VOLUME 14 JANUARY, 1914 NUMBER 1

NEW YORK STATE JOURNAL OF MEDICINE

Entered as second-class matter, July 5th, 1907, at the post office at New York

NEW YORK STATE JOURNAL OF MEDICINE

A Journal Devoted to the Interests of the Medical Society of the State of New York

JOHN COWELL MAC EVITT, M.D., Editor

Business and Editorial Offices: 17 West 43d Street, New York, U. S. A.
Address Journals sent in Exchange to 1313 Bedford Avenue, Brooklyn, N. Y., U. S. A.

Vol. XIV. JANUARY, 1914 No. 1

EDITORIAL DEPARTMENT

"YOUR JOURNAL."

WE have no recollections of the joyful emotions we must have experienced in getting into our first pair of pantaloons, as the occurrence and the emotions are lost in the mist of years, but we have instead a pleasing recollection of having seen somewhere a picture of a youngster standing before a mirror, a smile of satisfaction wreathing his countenance, his hands in the pockets of his trousers. and beneath, the words "His First Pair of Pants." The picture could just as well have been entitled "Pleasure and Pride," as these qualities are depicted in what a Frenchman would say—*Le tout ensemble.* If you have read thus far, thanks; we are now certain that you are a person of discernment and that you have recognized the analogy between the picture and the NEW YORK STATE JOURNAL OF MEDICINE, in its new dress, which we hope is in accordance with your ideas of sartorial taste. If your day's work is over and there is a bright fire burning in the grate, move your easy chair into a position where the reflected heat will instil a sense of comfortable warmth, and where the shaded beams from the lamp will fall upon this page of the JOURNAL, for in a non-offensive, egotistical way, we desire to tell you something about your JOURNAL, something about its personality, policies and ambitions.

Have you not had for years a casual acquaintanceship with some fellow wayfarer, and yet knew nothing about him until some circumstance or accident brought you into a closer intimacy in which he revealed to you unexpected traits of character which won your admiration and developed into indissoluble bonds of friendship? The JOURNAL wants to establish just such a bond of intimacy with you and how better can this be accomplished than by a free interchange of confidence. So light your pipe and we will begin, that is if you are interested in the JOURNAL. If not, seek some subject of greater importance, for that which we are about to say will require some little time, and realizing that a compassionate mercy is due our readers, this editorial will be divided into a series which will appear in this and the two following issues.

YOUR PATERNALISM IN THE JOURNAL.

HAVE you ever seriously considered your relationship to the JOURNAL? It should appeal to you in a different sense than do other journals, by virtue of paternalism. You are responsible for its creation, its birthright demands your guardianship, it is your personal property. You are the keeper of its soul and body, it exists for your special benefit, it brings you into a closer fellowship with your brothers of the State Medical Society. Its voice annihilates distance between city and hamlet. You take greater pleasure, do you not, in reading an article written by an author with whom you are acquainted than by one unknown to you? You also feel pleased, do you not, to welcome the young aspirants into the field of Medical Literature even though their efforts show elements of immaturity?

You would like also to have your JOURNAL present the most recent discoveries in medicine expressed in a scholarly style. Under the existing rules of your JOURNAL can this be accomplished? Yes and no. It all depends upon the viewpoint one takes of matter and composition. As you are aware, the papers read at the annual meeting of the Medical Society of the State of New York, become the property of the JOURNAL, the acceptance of which necessarily implies their publication, if at all meritorious. You can thus see that the JOURNAL has not the power of selection but accepts the grist which comes to its mill irrespective of its quality.

As to your own STATE MEDICAL JOURNAL, you are particularly fortunate. The Medical Society of the State of New York numbers amongst its members men possessing a highly developed mental culture which shines no less brilliantly than that which pales mediocrity elsewhere. They are affiliated with research laboratories, institutions of learning and hospitals; there are also the renowned surgeons and practitioners in the metropolitan centers, and that army of practical country practitioners many among whom, if transplanted to the city, would kick the heels of the foremost.

It is from these men that the JOURNAL receives its nourishment, whose quality varies; it is for the Dietetian to be sufficiently adept to prepare and serve this *nourriture* to us in a manner savory to the palate of the most fastidious. A constant diet of highly seasoned food soon palls upon the appetite, and one of indifferent fare produces ænemia; served in proper proportions, digestion and assimilation will follow.

TIME OF PUBLICATION OF PAPERS IN THE JOURNAL.

IT is the JOURNAL's delight to have a long distance acquaintanceship with its contributors, otherwise it is afraid that its willingness to be obliging would cause it to become metaphorically "tangled up." Some of them request an early publication of their contributions, some a specific date and some a simultaneous publication in another journal, while many others write asking an explanation for the non-appearance of their theses. These requests and queries are considerate and proper; they prevent possible ennui and bestir the JOURNAL to a sense of dutiful circumspection. The date of the publication of an article and the position it occupies in the JOURNAL has but little relation to its merit or non merit. To properly utilize the material at the JOURNAL's disposition at the commencement of the year, it must take into consideration its twelve monthly appearances and provide in advance for its proper selection and distribution covering this period. If it were to publish the valuable papers in their order of merit in the early issues it would seriously impair the value of the later ones. The JOURNAL is thus compelled to delay publication of many of the most valu-

able papers until the close of the year. The JOURNAL desires to be as agreeable to everyone as possible and will, when able, comply with the requests for an early publication or on a specific date. As the JOURNAL's form is made up one month in advance of its publication it would be well to bear in mind that at least four weeks, notice in advance is necessary for the insertion of an original article. Notices and communications which appear on its last pages, if of sufficient importance, will be accepted eight days in advance of the date of the appearance of the JOURNAL.

108TH ANNUAL MEETING OF THE MEDICAL SOCIETY OF THE STATE OF NEW YORK.

THE next meeting of the Medical Society of the State of New York, which is to be held in New York City on the 28th, 29th and 30th of April, promises to be one of unusual importance to the medical profession throughout the State. This will be the first Annual Meeting held in the metropolis since the re-organization of the Society. Appreciating the clinical advantages to be found in Greater New York and desirous of taking advantage of the educational facilities, the Council, through its Committee on Arrangements, has changed the general plan of the meeting. In the first place, all the sections, as well as the general sessions, will be held under one roof, namely, the Hotel Astor, thus obviating the necessity of our members' traveling from one place to another to attend the different sections. This, we believe, will secure a larger attendance at the section meetings. The second innovation is the introduction of two distinctly clinical sessions, which will be held on the afternoons of Wednesday and Thursday. It is the purpose of the Committee to have these clinics held by representative men, members of the State Society, who will illustrate, clinically, the subjects discussed in the papers presented before the special sections. For illustration, the section on Surgery will discuss on the morning of the second day the operative Treatment of Fractures, and on the afternoon of that day clinics will be held in many of the larger hospitals, illustrating the clinical application of the methods discussed; again, on the third day, the symposium in the section on Surgery will be upon the Surgery of the Thorax, and in the afternoon clinics relating to this subject will be held.

Formerly, free discussion of the papers before the several sections of the Society was limited, only a few men taking part. This was due to two reasons: first, because of the large number of papers presented too much time was occupied, leaving none for discussion; second, only specially selected men were invited by the Chairman to participate in the discussions. The Committee hope this year to correct this by inviting those members desirous of discussing any special paper to send their names to the Secretary of each section before the meeting or during the sessions, on slips provided in each section room. These names will be placed on the black-board in the meeting room in the order of their application and they will be called upon in that order.

In order to make this meeting afford the greatest good to the greatest number, it has been decided not to schedule the unusual, but to give demonstrations of cases met with by the average man in his daily work, so that when he goes home from his few days in New York, he may feel that he has gained something of practical value.

We believe that these innovations will be acceptable to the majority, who journey to New York in quest of information, affording a week of post-graduate study under the most auspicious circumstances. J. O. POLAK.

Original Articles

THE PRINCIPLES UNDERLYING THE SUCCESSFUL TREATMENT OF STERILITY IN WOMEN.*

By EDWARD REYNOLDS, M.D.,

BOSTON, MASS.

A STATEMENT that sterility in women is usually susceptible to cure, if the treatment is conducted along appropriate lines, is of interest for many reasons. No one can practice medicine long without becoming aware of the intense interest which attaches to this subject in the minds of patients, nor without coming to realize also that the number of individuals in the community who are so interested is a very large one, (while few will dispute the statement that the treatment of sterility has been to date extremely unsatisfactory.)

Sterilities in women have long seemed to be of obscure origin from the facts, that on the one hand women with gross lesions, such as new growths or displacements, often conceive; while upon the other, women with apparently normal organs are not infrequently sterile. So, too, (in the present state of practice) sterile women with gross lesions are often operated upon without relief to their sterility, from neglect of the true causes of their condition; and others who have apparentely normal organs are either given empirical and usually inefficient treatment, or are pronounced normal and advised to have patience, in spite of the fact that they have remained sterile for years. This unsatisfactory state of affairs is, I think, due to the fact that most sterilities are in reality produced by minor variations from the normal which have not heretofore been recognized as such, which may be either present or absent in either class of cases, and which are commonly overlooked in those which are treated. The brief limits necessarily set for this paper and the fact that I have recently published† a more extended article on sterility must, however, compel me to pass lightly over my theories of its causation, referring to them only so far as is necessary to a comprehension of what I have to say about treatment.

Sterilities for the purposes of this paper may be divided in three classes: (1) Those due to the persistence of underdeveloped or infantile organs. (2) Those due to altered conditions in the secretions of the genital tract. (3) Those due to failures of ovulation.

1. Sterilities due to grave failures of development may be dismissed at the outset with the statement that except for the renewed development which sometimes follows an early marriage they are hopeless, and that no treatment can be recommended.

2. *Alterations of the Secretions.*—Sterility is sometimes the result of a mere fermentation of one of the secretions and its consequent alteration into a condition hostile to the spermatozoon without any change in the mucous membrane which secretes it. It is frequently produced by localized alterations in the mucous membranes of such slight extent as to be incapable of producing symptoms, and to be detectible only by observation of the change produced in the secretions at that point.

It must be remembered here, that the patency of a canal is the patency of its most obstructed portion, and, further, that we are here speaking not of mechanical patency, but of that most delicate physiological patency which affords easy access to so feeble and feebly moving an organism as the spermatozoon. In the light of this conception it can be easily understood that the changes necessary to offset this delicate physiological patency may easily be so slight as to produce no noticeable symptoms of ill health and to require especially careful observations for their diagnosis, (but we are not forced to depend, for our acceptance of this conception, upon merely a priori reasoning).

That very slight degrees of change in the medium in which the spermatozoon lives are sufficient to destroy its life or motility, is easily demonstrated under the microscope; in point of fact, the effects of artificial alterations of the normal medium furnished by the semen have been studied many times. The spermatozoa demand an alkaline reaction. They are killed by acidity. They are destroyed by contact with pus, or more probably by contact with the products of the pus cells. Their motility is diminished or annulled by an increase in the viscosity of the medium. In the presence of a current they all head against the current. They make progress against a slight current in the medium, but are swept backward by too rapid a current. They head away from an acid and towards an alkaline medium.

In the course of the natural process, the spermatozoa soon pass from the semen into the secretions of the woman who is their host, the semen itself being left behind in the vagina when the spermatozoa enter the os; this last statement being, however, more certain for the physiology of impregnation in the human species than in most other animals. In some of the quadrupeds it has been demonstrated by the use of colored fluids in the vagina that the semen is drawn into the uterus by suction, but the mechanism by which this is affected does not exist in the human species, and it now seems to be well established that the possibility of the existence of any suction into the uterus in the human race is negligible. In the quadrupeds the uterus is a thin-walled flaccid bag, which alters its shape with every change in the pressure around it, and in the ordinary position of coitus the relaxations between the heaving mo-

* Read at the annual meeting of the Medical Society of the State of New York, at Rochester, April 30, 1913.

† The Theory and Practice of the Treatment of Sterility in Women. Journal of the A. M. A. Jan. 11, 1913. Vol. LX. No. 2, p. 93.

tions of the abdomen make, under the influence of gravity, a definite negative pressure in the abdomen, a pumplike suction, by which any fluid which is in the vagina is drawn into the uterus and, as has been experimentally demonstrated, sometimes even into the oviduct. In the human race, however, the ordinary position of coitus affords no such suction under the influence of gravity and, moreover, even if active negative gravity were present in the abdomen as a whole, the thick-walled rigid uterus could respond but little to it. The human spermatozoon must then enter the uterus by its own motility, and in correlation with this necessity we find that the motility of the human spermatozoon is very much greater than is the case in most other animals. Since, then, in the human race impregnation depends so largely on the motility of the spermatozoon, even mere mechanical conditions such as constrictions of the genital canal may be of importance, and in two ways; either by leading to a retention of the secretions, with consequent inspissation to a degree of thickness through which the spermatozoon cannot make effective progress, or by increasing the rapidity of the outward flow of the secretion to a degree of speed which prevents the passage of the spermatozoon past the constricted point. All this may sound fanciful, but in point of fact nothing is more common in actual practice than to see the secretions behind a pinhole os so thick that they can be picked up with the forceps instead of being barely more viscous than water as is the normal. In this condition, too, they soon act as a foreign body, setting up irritation in the mucuos membrane around them, or, on the other hand, perhaps become infected as a result of the stasis. Again stasis favors infection, and infection by non-pathogenic bacteria or by others which have been rendered non-virulent by residence in the acid secretions of the vagina often produces changes in the secretion after it has been poured out and so effects a condition which is destructive to the spermatozoon but is harmless to the woman—hence sterility without ill health. This point, which I think an important one, was, however, discussed at length in my former paper and must be dismissed without the expenditure of further space here. There is reason to believe that the cornual portion of the tube and often the region of the internal os are even more important points of stasis, but, again, too much space cannot be given to this point here. However, as an actual fact in practice, in cases of excess, or of the semi-perversions in the marital act, which are far from uncommon, it is an everyday experience to see the current through the os so far rapid that any one who has been in the habit of watching spermatozoa on the stage of the microscope will see at once that their chance of passing the os is extremely small. These are plain facts which any one may see for himself, and I think no one who makes a study of the subject can fail to be convinced that these trifling alterations are often efficient causes of sterility, even though they produce no symptoms of ill health.

3. *Failures of Ovulation.*—The conceptions outlined above had led me some years ago to a fair degree of success in the treatment of sterility, but the many cases which remained sterile even after all the foregoing conditions had been rendered normal left the subject still very unsatisfactory and led to the study of the conditions which underlie the failures of ovulation. There are at least two conditions of the ovary which appear to inhibit ovulation, and which are commonly remediable: *a.* Persistent corpus luteum. *b.* Distention of the ovary by retention cysts, usually with thickening of its capsule.

A. The very existence of pathologically persistent corpora lutea in the human ovary has not hitherto attracted much attention, but every one knows that many of the large cysts of the ovary are of luteal origin, and it needs but a small experience in the conservative surgery of the ovary for other reasons than sterility to show one that a large proportion of the minor enlargements are due to more or less cystic corpora lutea, of sizes larger than the normal and presenting every appearance of undue persistence. It soon becomes possible, also, to accumulate cases of this character in which the existence of a moderately enlarged ovary has been recognized for some prolonged time before operation. In looking over my recent records I find three cases in which a stationary enlargement of one ovary had been noted for periods of from one to several months, and in which the enlargement of the ovary was found at operation to be caused by a large and more or less cystic corpus. I find four other cases in which a similar condition was found at operation, and condition probably the same, but in which the patient had been under observation for but a short time before the operation was undertaken. In each of these seven cases the enlarged and apparently persistent corpus was removed from the ovary and its bed closed over and in every one of the seven cases the operation was followed by the prompt appearance of pregnancy in a previously sterile woman. These clinical results are, moreover, supported both by views of laboratory workers and by animal pathology, as follows:

Extensive studies of the functions of the corpus luteum have been made in the last few years by Frank, L. Loeb, Marshall, Jolly, and others. As a result there seems to be a consensus of opinion, at all events on the point that the presence of the corpus luteum in the ovary inhibits pregnancy.

Again, in veterinary practice persistent corpus luteum has long been recognized as a leading cause of sterility in the cow, and its removal by a somewhat rough-and-ready method has long been recognized as standard and successful practice.

B. The degree of importance which should be

accorded to the ovary distended by retention cysts, as a cause of steriliy, is as yet not susceptible to as definite demonstration, but the balance of evidence seems to me to show that it is of considerable importance. These ovaries uniformly present a condition of abnormal tension within a usually thickened capsule. We may take it for granted that the cysts which we see distending the ovary have not discharged their ova and with the capsule thickened to resist the increasing tension there seems small chance that, alongside of these failures, there should be other follicles which have made successes; that such ovaries can occasionally ovulate is probably shown by the occasional appearance of small normal corpora lutea in them, but that they do not habitually ovulate is equally well shown by the rarity with which corpora are found in ovaries which are the seat of well-developed multiple-retention cysts. The existence of undue tension and an unduly thick capsule seem to be the essential abnormalities and it would seem at first sight that the removal of the retention cysts would furnish but a temporary relief of the abnormal condition since one would expect that other retention cysts would soon be formed and the tension be re-established. A somewhat large experience with the conservative surgery of such ovaries has, however, shown me that the recurrence of enlargement is a very rare exception. It has occurred in about three per cent. of my cases. It seems very possible that with the decrease of tension there is a reduction of the capsule, which is, moreover, in fact not a capsule, but a mere increase in the abundance of the connective tissue of the organ near its surface, and which may, perhaps, hypertrophy or atrophy in response to the force which it is obliged to resist.

Whatever the theory may be the fact remains that after these retention-cyst ovaries have been treated by the removal of the cysts the condition seldom recurs, and, while I am not yet ready to present statistics, an experience of now about five years leads me to believe that the addition of conservative operative treatment of such ovaries to the other methods of treatment of sterility, in appropriate cases, has added largely to the list of successes.

Even so hurried a resumé of the subject as this, make its evident that sterility in women is not the result of any one condition of lesion but that the subject is a complex and difficult one, presenting many and varied phases for consideration. In such a subject the key to treatment must always be found in diagnosis and in this subject the key to diagnosis is to be found in the study of the secretions and especially of the minor alterations of the secretions which, by furnishing a hostile environment to the spermatozoa, prevent conjugation and fertility; in conjunction, however, with a study of the minor alterations of the ovaries, which are equally efficient by the prevention of ovulation. It is surprising how small a deviation from the normal may be the cause of a sterility, as proven by the fact that once it has been remedied fertility occurs, and this is, of course, the reason why so many cases are said to have normal organs, and an unexplained sterility, by those who have not given special attention to this subject. When the cause for hostile secretions is to be found in general conditions, such as hyper-acidity, produced by the ingestion of undue amounts of table salt with the food, or by other forms of general acidosis the alteration of the secretions is always general and the remedy is to be found in general medical treatment. When the hostile secretion is the result of any of the many forms of comparative misuse of the sexual instincts, conditions which in their lesser degrees are by no mean uncommon even in married life, these habits must be set straight. This presupposes cross-questioning and a certain knowledge of the subject, since the physiological ignorance which leads to these semi-perversions is often surprisingly great.

The alterations of the secretions which produce sterility are many, *i. e*: Alterations in the reaction or consistency of the vaginal secretions, due usually to the presence of unduly large amounts of the many bacteria which are normal in this region. These conditions exist both with and without vaginitis. When the vaginal secretions are such that living spermatozoa are unable to reach the cervical secretions, even though these be normal, the case is evidently one for local treatment. It is impossible within the limits of a short paper to cover all the phases of the subject, but the common, important alterations of this secretion are purulence and hyperacidity. Both are bacterial in origin and both indicate disinfection, which to be efficient for fertility must, however, be extended to cover every fold and crypt in the vagina. For myself, I find that insufflation of the vagina with powdered protagol when the vagina is distended by gravity in the knee-chest position is, if repeated several times, the most efficient procedure for this purpose; mere douching is seldom effective.

Then the cervical secretion may be thin and milky or inspissated, or both, *i. e*., inspissated with a thin discharge around it. It may be clear, but acid instead of alkaline. It may be without any other evidence of alteration, be attended by a reddened and eroded condition of the edges of the os and of the endocervical mucous membrane, a condition which is almost invariably attended by sterility; not infrequently when the cervical canal is opened for inspection isolated patches of inflamed mucous membrane will be seen with a thickened or semi-purulent discharge about them. Most of these cervical conditions are dependent on obstruction thus: there may be a pinhole os with dilation of the cervical cavity behind it, or anteflexion of the cervix may produce a narrowing of the lumen at the point of flexion; this latter condition is often of especial importance to sterility, since not infre-

quently there are marked strictly localized alterations of the mucous membrane at this one point and the corporeal mucous membrane may be altered behind such constrictions in any degree up to the hypertrophic endometrites.

Many of the minor cervical alterations can be reached by minor treatment or extremely minor operations, indeed, I think it probable that most of these sterilities could be so treated if they were seen early enough, and in this connection and before speaking of the affections of the upper part of the genital tract it seems wise to recall one well-known bit of natural history. Every gynecologist is familiar with the patient who has been well until married and has then developed a long series of pelvic symptoms. On examination some of these cases show well marked evidence of a specific infection of low grade, the so-called marital gonorrhœa, but in many others there is, on routine examination, nothing objective to account for the symptomatology, other than perhaps somewhat turbid and abundant secretions, with subjective tenderness, and these cases are too often considered gonorrhœal. More careful study will usually show that in these cases the genital apparatus which has not given rise to symptoms during virginity, but has begun to make them so soon as the organs are subjected to use is one in which there is imperfect drainage from the uterus and consequently from the tubes, and the reason for the development of symptoms appears to be this. With habitual penetration of the vagina, the vaginal secretion becomes for the first time the constant habitat of bacteria of many kinds and if there is imperfect drainage and consequent stagnant flow in the cervical canal and above it, turbidity and inspissation of the secretions soon occur, probably usually by fermentative action from the non-virulent bacteria which the patent vagina always contains, the physiological protection against infection which is furnished by a constant outward current from the cervix having been lost by the inspissation. These cases are of importance to this subject because by the time this change has occurred they are always sterile. Were they seen before such a change, I think that it could also be prevented from appearing by a permanent opening of the cervical canal at both the external and internal ores by whatever plastic is best adapted to the shape of the individual cervix and the free drainage which follows; but cases without symptoms except sterility are, of course, not seen at the outset of their married life, and by the time they do consult us the conditions have usually progressed at least to the stage when the cervical secretions are altered in chemical composition by fermentation, *i. e.*, by mild infection.

They are not infrequent at this stage and if so the appropriate cervical plastic work, with curettage and thorough disinfection of the cervical cavity alone will usually cure the sterility. If the uterine cavity is not affected it should not be entered, but the curettage and disinfection of the cervix must be so entirely thorough as to produce entire normality of the cervical secretion in order to be efficient, and one or both must frequently be repeated in order to obtain the result. Few physicians seem able to perceive the meaning of the words "entire normality," and one other word here,—dilatation and curettage are, in the majority of cases here, insufficient to produce the thorough drainage which is essential to the relief of sterility—perhaps two-thirds of the sterility cases which I see have been subjected to this routine procedure without benefit, and in not a few cases with the production of conditions which make their subsequent treatment more difficult. The profession should either treat these cases by thorough-going operative methods or leave them alone.

In perhaps a majority of these cervical cases, however, alteration of the secretions has extended above the cervix at the time when they are seen, and in these cases curettage of the uterine cavity must be added to the treatment. If sufficiently, cautiously pursued disinfection after curettage and in the presence of the operative dilatation seems devoid of danger and is certainly an aid. The recent work of Stone, while perhaps not yet wholly established as inocuous, shows the possibilites in this direction. I myself prefer to introduce the uterine disinfectant on swabs than with a syringe, and if the tubes are also to be disinfected prefer to do this from above, forcing the fluid back into the uterus with a syringe rather than from the uterus into the tubes as Stone does. Used from above downward, I have as yet seen no harm, but have not employed this method in enough cases to speak as yet with authority.

Our knowledge of the affections of the tubes is as yet limited to a familiarity with inflammatory disease of severe grade, but the uterine orifice of the tube has a very small lumen which is narrowed or obliterated by slight congestion of the mucous membrane of the surrounding structures, and a large number of observations made in the course of abdominal operating since I have been interested in this subject of sterility has shown me that congestion of a tube without apparent inflammatory disease is an extremely common phenomenon, and it is probable that partial obstruction about the uterine orifice and consequent alteration of secretions must be reckoned with. The prognosis of tubal cases is, however, not as yet, in my hands at least, as good as that of those with uterine and ovarian causes for their sterility, and I believe that in the majority of the minor affections of the tubes it is better to trust to the effects of good operative drainage from below under the care of nature rather than to use local applications to the tubes.

The whole trend of my observations leads me to believe that the occurrence of retention cysts in the ovaries and of persistent corpora lutea are also in the majority of sterility cases associated

with imperfect drainage from the uterus, probably as a result of consequent congestion. When in addition to cervical retention there is tenderness of the body of the uterus on pressure and more especially if there is even slight tenderness over the tubes no examination should be considered complete until it has been repeated under anæsthesia.

When in a sterility case an examination under anæsthesia demonstrates enlargement of both ovaries of even small degree or palpability of even one tube it is probable that an abdominal incision will be necessary before fertility is secured. In a few such cases and especially in those associated with extreme anteflexion and under-development of the cervix the obtaining of proper uterine drainage by a suitable discission of the posterior lip and division of the anterior attachments of the cervix will result in gradual subsidence of the abnormal ovarian or tubal condition as the result of improved drainage, but in the majority of cases by the time the adnexal abnormalities become palpable they will have become permanently established unless directly attacked. The decision whether to advise the minor plastic operating only, and to hold the conservative work on the ovaries, or tubes and ovaries in reserve for possible future use, or to advise complete repair at one sitting involves consideration of so many details that it can only belong to the study of the individual case.

If it is necessary to attack the ovaries the removal of that most significant of all lesions as regards sterility, the persistent corpus luteum, is technically an extremely simple matter—the expression of the corpus and the suture of its base after trimming redundant edges, if necessary, is very easy and leaves a practically normal ovary; on the other hand, the technique of the conservative treatment of retention cysts must vary with their number size and situation in the ovary, and its adequate discussion might alone occupy the full time allowed for a paper to-day—as my own views on this subject are fully set forth in another paper already published I must avoid it here.*

The key note to the whole subject of the treatment of sterility seems to me to lie in a recognition of the fact that fertility is dependent upon an extreme normality, in so far as the physiological patency of the canal is concerned. A normality so extreme as to require great closeness of observation, if the slight alterations which are sufficient to upset it are to be diagnosed.

That a mere chemical, biological, or even mechanical alteration of the secretions of one small spot in the canal may be sufficient to destroy patency of the whole canal to the spermatozoon is I think a somewhat new, but a wholly defensible conception; that such slight alterations may upset fertility seems an adequate explanation of the fact that apparently normal women are frequently sterile. That the restoration of entire normality demands close diagnosis and minutely careful treatment of the individual case rather than the institution of routine methods would seem to follow from the premises, and has been borne out by my experience in practice. I am confident that the gynecologist who dilates and curettes because he does not know what else to do for sterility does his case very little good, and leaves many of them much the worse for his attentions.

I am frequently asked by medical friends in personal interviews what my percentage of success in the treatment of sterility has been, and I think it may be appropriate to say here what I have said to them, that I am unable to answer that question, and for the following reason: So soon as any man becomes associated in the minds of the profession and the public with the treatment of sterility he is likely to find, as I certainly have, that he is consulted by many women whose chance of fertility is almost nil, and who yet demand, and with right thereto, that they be given treatment for the sake of the one chance in a thousand which may exist. Such for instance are the many women whose age renders it improbable that they will bear children, women of forty-two or three, of whom one cannot say that there is no chance, but in whom it is unlikely. There are many other women who are sent with a statement from their physician that the husband is undoubtedly all right, but with no definite information on this point. Experience shows that in a large proportion of such cases the trouble rests with the husband. Women who have come a long distance must often be given treatment, and if severe dysmenorrhœa or other symptoms are present as complications, sometimes operated on in the absence of any knowledge about the husband. If all these and other similar cases are included in one's statistics they will manifestly vitiate the conclusions, yet the moment one begins to exclude any cases the impression is given that the statistics come from picked cases only; and they are again worthless. It is impossible to judge of this matter statistically.

That the line of treatment which I have been pursuing, and which I am advocating in this article, yields reasonably good results is proven to my satisfaction by the fact that of the considerable numbers of patients who now come to me on this question, a majority are sent, either directly from previous successes, or from physicians whose previous cases have been successes, but this is all that I can say.

Discussion.

DR. ROBERT TUTTLE MORRIS, New York City: We must go far away from the pelvic organs for the fundamental history belonging to some cases of sterility. Under conditions of cultiva-

* Conservative Surgery of the Ovaries. *Journal of the A. M. A.* Nov. 1906, Vol. XLVII, pp. 1449-1454.

tion, animal and vegetable life reaches protoplasmic limitations, and we then have extinction of an over-cultivated species. Under conditions of modern civilization—anatomic defects appear first in women when cultural limitations are being reached, because nature strikes at the most vital point for limiting over-population. In some cases we find ovaries which do not develop normal ova; in other cases the uterus is unable to retain an impregnated ovum because of its own inherent anatomic defects. Sometimes derangement of function of fairly good pelvic organs is caused through the influence of toxins of enteral origin. Furthermore, reflex disturbance of the generative apparatus in susceptible individuals of neurasthenic habit may be caused by such a distant influence as eye-strain. Many an ovary has been removed for ovarian neuralgia when the neuralgia had no relation to the ovary, excepting that the latter furnished a field for the demonstration of irritated scympathetic ganglia. When treating of the subject of sterility in women we must first get past the obstruction caused by pelvic symptoms, and then reapproach the pelvis from a distance.

Dr. Reynolds: With regard to abdominal operation for sterility. It should be rare. If the patient demands an abdominal operation, there is no reason why it should not be done.

CARDIOSPASM. WHAT IS IT? WHAT IT SEEMS TO BE.*

By ANTHONY BASSLER, M.D.,

NEW YORK CITY.

CARDIOSPASM is described as a spasm of the cardiac orifice of the stomach in four late works on internal medicine, three on surgery, and eight on diseases of the stomach. A study of numerous X-ray plates of—— cases shows the stricture to be located in almost every instance epicardial, the cardiac orifice itself being some distance below. The lower extremity of the esophagus or the cardiac orifice of the stomach have no or only a faintly developed sphincter. Since it has never been proven that cardiospasm is what its name implies, observations were made in the hope of elucidating this point.

As a result of a careful dissection of five fresh cadavera, the following matters are of interest in this connection: At the middle of the esophagus, the muscular coat includes both the striated and non-striated fibres, and at the lower end the involuntary alone are present. At the esophageal opening of the diaphragm the gullet is narrowest, usually from 12 to 14 m.m., as compared to 14 m.m. at its beginning and 14 m.m. at the base of the heart opposite the third dorsal vertebra. Above the esophageal opening the normal gullet is wider, and below the opening in the diaphragm it is funnel shaped. This latter abdominal portion under deep inspiration runs the length of the twelfth dorsal vetebra, a distance of about 4 m.m. (1½ in.). This lower end is almost horizontal and narrowest from side to side even when food is passing. Under conditions of diaphragm rest, this abdominal portion of the diaphragm is opposite the eleventh dorsal vertebra and about 3.5 m.m. (1 in.) to the left of the median plane, and under expiration above this. Therefore, the esophageal opening of the diaphragm is about the distance of one vertebra above the cardiac orifice, a distance maintained under all conditions of respiration. The dilation or bulb immediately above the diaphragm is caused and maintained by the muscular and tendinous fibres of the diaphragm surrounding the esophagus and the two pneumogastric nerves that pass through it, rather than by any sphincteric action of the esophagus at that point. Careful X-ray observations in the living human being prove that during life a status of tonus exists in the fibres of the crura that surround the esophageal opening of the diaphragm. This cannot be demonstrated during anæsthesia or at death because under these conditions the crura are relaxed leaving the esophagus to be loosely held in an atonic esophageal opening.

The vagi give no branches to the diaphragm at the esophageal opening. After passing through the diaphragm, the esophagus runs in a groove in back of the left lobe of the liver to the under surface of it, where it joins the stomach at the right of the spiegelian lobe, while behind it are the decussating fibres of the crura and the left inferior phrenic artery.

Dissecting the circular fibres of the diaphragm from above downward it can be demonstrated that close to the cardiac orifice of the stomach, the fibres group up slightly. When present in a demonstratable way, and this is not often, it is logical that at best this grouping forms only a very weak sphincter, one easily overcome in life by any weight pressure of food (particularly fluid) above it even when spasmed.

If you force water from above into the stomach, or from below into the gullet the esophageal opening of the diaphragm acts as a barrier to it, and when this is cut away, the barrier is obliterated since the circular fibres of the gullet itself or the cardiac orifice do not constrict. It seems logical to believe that it is not the contraction of fibres of the gullet or stomach that prevents food entering the gullet during the normal process of gastric digestion but that this is maintained by certain projections of the mucous membrane of the esophagus into the cardiac orifice of the stomach supported by the resisting liver tissues in front and above it by the resisting esophageal opening of the diaphragm The circular fibres of the esophagus join with the oblique fibres of the stomach rather

* Read at the annual meeting of the Medical Society of the State of New York, at Rochester, April 30, 1913.

than with the circular ones of that organ, and it is this arrangement that gives to the abdominal portion of the esophagus its funnel shape and causes its shortening and enlargement when food is passing through it.

At the cardiac orifice there is an intermingling of the internal oblique coat of the stomach with the circular fibres of the gullet. Although the arrangement here is complicated, careful study proves that the circular fibres of the gullet are essentially oblique at the orifice, and thus, since muscular fibres contract in their long axis, a spasm of these fibres would cause an opening of the cardiac orifice rather than a closing. Therefore, if the muscular fibres of the lower end of the diaphragm or those that surround the cardiac orifice of the stomach became spasmed a dilatation of the gullet and cardiac orifice would ensue instead of a stricture.

A study of the anatomy of the esophageal opening of the diaphragm gives logical conclusions that every arrangement necessary is present for a stricture. The muscular fibres of the right crura divide into two distinct bundles, each going to the diaphragm at one side of the opening. The left crura divides in the same way the muscular bundles being above that of the right. Thus, the main portions of the fibres of the right and left crura pass to the right and left of the esophageal opening, while the internal portions of the fibres of both crura makes up the back of the left margin of the orifice, and a bundle from the left crura makes up the back of the right.

ILLUSTRATION No. 1.

FIG. 1.—Anteroposterior view, showing the distance of the cardiac orifice of the stomach from the diaphragm, and the horizontal course of it between the two.

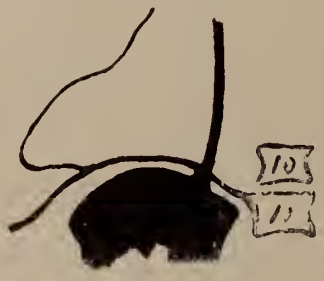


FIG. 2.—Is an oblique view, showing the slight funnel shape.

FIG. 3.—A view from side to side, showing a more marked funnel shape, this extending through the diaphragm in this individual.

Normal esophagus at the lower end.

ILLUSTRATION No. 2.

Anatomy of the crura about the esophageal opening of the diaphragm.

Although this arrangement of the muscular fibres of the crura differs somewhat in subjects, it is essentially the same in all. Thus it is plain that each crura margins the esophageal opening at opposite quarters and that the contraction of these fibres, particularly the inner section of both crura, would contract the esophageal opening by drawing the central tendon of the diaphragm against the front of the esophagus or contracting it at the sides.

A careful study of the literature of cardiospasm cases that have come to operation or autopsy was made to disprove the above assumption. In the first place, there are very few on record because the severe ones are seldom met with and the rest yield to mechanical stretching by way of the mouth. The best description of the living pathology of the subject is that by V. Mikulicz (Central bt. f. Chir. 1904, p. 1632) in which he described five cases he had stretched the cardia from the stomach side but which contained no detail as to whether the spasm was at the cardiac orifice of the stomach or at the esophageal opening of the diaphragm. Wendel of Magdeburg, 1909, performed a cardioplasty, in which the cardia corresponded to the size of a stout finger with a constricted portion distinctly above it. This case is of interest because no signs of inflammatory process or muscular hyperplasm were present, and since the stricture was the distance of the height of one vertebra above the cardia, it helps to prove my conten-

tion. Many other cases have been described but in none of them is the subject pertaining to where the spasm was located or what it was due to helpful to the point in question.

X-ray observations were then made in seven cases of cardiospasm, each of which showed the stricture to be at the level of the esophageal opening of the diaphragm and below it. Attempts were made in each case to fluoroscopically study the bismuth passing the stricture and the course of the gullet below. It was plain that the bismuth descended to the esophageal opening of the diaphragm and was held there. Plates were then taken of the opening from below and through the opening from above, each instance showing side or front pressures of the diaphragm upon the gullet. After considerable bismuth had passed the stricture the patients were X-rayed in the horizontal position, lying on the right side so as to outline the fundic end of the stomach and the lower end of the gullet, and afterward plates were taken with the patient's head downward to permit gravitation of the bismuth to the upper part of the stomach. Each of these again showed the stricture was not at the cardiac orifice or in the abdominal portion of the esophagus, but at the esophageal opening of the diaphragm itself. Therefore, considering that at the level of the opening the esophagus has no special sphincter, it is plain that we must be dealing with other than what we supposed cardiospasm to be.

Plates of one case at hand, taken some years ago, in which the stricture is possibly 2.5 c.m. below the side of the esophageal opening and it is possible that in this instance cardiospasm really existed, but in all of my other cases and in the plates of those cases of others, that I have seen, from a study of the anatomy of the parts, the absence of any operative or postmortem proof to the contrary and the new operative proof of Wendel's, it seems justifiable to believe that we are not dealing with cardiospasm in these instances but with a spasm of the esophageal opening of the diaphragm, due to contraction of the muscular fibres of the crura, and that when we stretch these strictures we are relieving the patients by stretching the esophageal opening of the diaphragm.

If such is correct, it seems warranted to assume that in intractable cases the approach to the site and cause of the stricture had best be made by the safer abdominal route rather than through the thorax, and that an operative procedure which has to do with the division of the crura, either at their insertions or the bisection of two of the inner portions of both at the back of the gullet or some point in the esophageal opening, is worthy of consideration.

BENZOL IN THE TREATMENT OF LEUKAEMIA, WITH RESULTS IN A CASE OF MYELOID FORM.*

By JEROME MEYERS and THOMAS JENKINS.

THE recent brilliant institution by Korányi[1] of benzol in the therapy of leukæmia is based upon the clinical observations of 3 cases of benzol poisoning in the Johns Hopkins Hospital, and upon the animal researches by Selling on the effects of benzol. The cases of benzol poisoning[2], two of which died, showed symptoms of purpura hæmorrhagica with typical manifestations in the skin and mucous membranes, and a blood picture similar to aplastic anæmia, in which the most striking finding was a marked leucopenia. This diminution of white cells in the circulating blood was evidenced in one fatal case by a count of 1,280 per cmm. at admittance, and 480, at death a week later, in the other fatal case the first count was 560, falling to 140 at exitus. With this leucopenia there was a distinct anæmia of 640,000 and 1,500,000 with 8 and 15 per cent. of hæmoglobin (Sahli), respectively. Microscopically there was little change in the reds, no myelocytes, and only one megalablast. The animal experimentation of Selling[3] shows that benzol is a very powerful leucotoxin, destroying not only the white cells of the circulating blood, but attacking the parenchyma-cells of the entire blood-forming system, so that, on repeated injections of benzol, the bone-marrow, the spleen, the lymph-glands, and the lymph-follicles are rendered aplastic or atrophic, regeneration occurring with the cessation of the poison; that myeloid tissue is more affected than lymphoid, causing a greater destruction of polynuclear cells than lymphocytes, that the erythroblastic tissue of the bone-marrow is disturbed, but that the circulating red-cells are not greatly injured. There is at first a hyperleucocytosis followed by a leucopenia. The aplastic blood organs regenerate completely in from 10 to 21 days. The liver and kidneys show varying grades of fatty change; in some animals there were hæmorrhages in the wall of the stomach and intestine and lung.

Korányi in his original article reported 2 cases with his conclusions based on these and 7 other cases reported later by Kiralyfi. He sums up his experience as follows:

(1) After an initial rise in the leucocytes, there is a decrease at the end of the second or beginning of the third week, at first slow, then rapid. The red cells are little affected, and may be higher at the end of treatment. All forms of leukæmia are benefited. The spleen is markedly decreased in size late in treatment. The general condition is markedly benefited.

(2) The action of benzol is slower than X-ray, but may be of benefit when X-ray has failed. Patients with previous X-ray treatment seem to

* Read at the annual meeting of the Medical Society of the State of New York, at Rochester, April 29, 1913.

react better to benzol than those without. The results of benzol seem to be transitory.

(3) Small doses stimulate the bone-marrow; so give as large doses as possible, that is, 3 to 4 g. daily, in capules of 0.5 g. each with equal quantity of olive oil. There are few bad effects outside of initial dizziness, ringing in the ears, eructation, or pyrosis.

Korányi's first report showed a case, in which previous use of X-rays had failed to diminish the whites. With benzol, the whites dropped from 173,000 to 12,000 in 78 days, and finally to 8,000, at which level the whites remained 6 weeks later. The patient felt better, the spleen, at first hardy diminished, grew rapidly smaller, the reds rose from 3,000,000 to 4,000,000, and even, with cessation of treatment, the patient was able to work.

With these favorable findings in mind, we decided to try the effect of benzol on a freshly diagnosed case of myeloid luekæmia, the patient receiving no other treatment of any kind. The case is as follows:

Mr. F. C., aged 41, a fuller by occupation, first seen September 7, 1912, stating he had been ill for a long time. His only previous illness was typhoid 6 years ago, since when he has never been well. Has always had trouble with his stomach and bowels. At present, he complains of fullness after eating, cramps in the bowels, relieved by defecation, occasional diarrhœa, with incontinence of feces and urine. He suffers from dyspnœa and palpitation, and it is only by main grit that he is able to keep at work.

Status Præsrus, September 7th. The patient is tall and spare but not thin, weighs 145 lbs., very pale, eyes prominent, partially bald, with visible temporal vessels. No enlarged lymph glands. Chest negative, except one rib on either side seemed to be enlarged.

Examination of the abdomen revealed an enlarged and tender spleen, extending a hand's breadth beyond the border of the ribs. No increase in size of the liver, no ascites, no œdema, Temperature 99, pulse 90. Systolic blood-pressure 105.

Urine pale, spec. grav. 1008, normal. The feces were alkaline, meat was not well digested, there was a reaction with benzidin, no starch-cells, numerous ammonium-magnesium phosphate crystals, some acid-fast organisms, not tubercle-bacilli, and a large number of what were first considered pus corpuscles, but later proved to be the various white elements of the blood.

The blood count gave 4,000,000 reds, 30 per cent. hæmoglobin, and 212,000 whites, of which 52 per cent. were neutrophiles, 38 per cent. eosinophiles, 3.5 per cent. basophiles, 6.6 per cent. small lymphocytes, 10.2 per cent. large, 3.8 per cent. transitionals, and 20 per cent. myelocytes.

On September 13, the patient was started on benzol, 2 capsules, each containing 0.5 g. benzol and oil of sweet almonds, 4 times a day. After a few days diarrhœa, and tinnitus aurium developed, which necessitated its discontinuance for 2 days, after which the benzol was again taken, and taken continuously, in an aggregate daily dose of 4 g., for 174 days.

September 19, the white count was 350,000, a rise, in accordance with the findings of Selling and Korányi. The patient felt better, however. September 25, the leucocytes numbered 140,000, the reds, 3,600,000. The differential count showed 60 per cent. of neutrophiles, 1.5 per cent. eosinophiles, 3 per cent. basophiles, 3 per cent. small lymphocytes, 17 per cent. large, 15.3 per cent. myelocytes. There were nucleated reds. Patient continued to feel well, gained strength, and could walk better.

October 2, 1912, Leucocytes, 244,000.
October 10, 1912, Leucocytes, 277,000.
October 17, 1912, Leucocytes, 247,000.
October 24, 1912, Leucocytes, 290,000.

All during October there was an increased leucocytosis, but the patient continued to improve subjectively; he could walk with less dyspnœa and weakness, he worked full time and even overtime, he gained 5 lbs., and the improvement in his complexion was apparent to himself and his wife. The spleen is less tender, but little decreased in size.

November 6, 1912.—Leucocytes, 254,000.
November 18, 1912.—Leucocytes, 179,200.
November 30, 1912.—Leucocytes, 250,000.
December 6, 1912.—Leucocytes, 218,000, Reds, 4,304,000.
December 19, 1912.—Leucocytes, 221,000, Reds, 3,500,000.
January 31, 1913.—Leucocytes, 308,000.
February 28 1913.—Leucocytes, 450,000, Reds, 3,900,000.

On February 28th, the hæmoglobin was 60 (Sahli) and the differential, neutrophiles 74 per cent., small lymphocytes, many of which were filled with coarse basophilic granules, 9 per cent., large 2 per cent, myelocytes 13 per cent., basophiles 1 per cent., eosinophiles 1 per cent., mononuclears 1 per cent.

Benzol was now stopped for three weeks, during which period, there was a loss of 3 lbs., and loss of sense of well-being. April 4th, the whites numbered 443,000, reds 4,212,000, hg. 55 per cent. (Sahli); benzol was again given, and on April 11th, the whites numbered 350,000, of which 50 per cent. were neutrophiles, 42 per cent. myelocytes, 4 per cent. basophiles, 1 per cent. eosinophiles, 2 per cent. small, 2 per cent. large lymphocytes, and 1 per cent. transitional. On April 18th, the count was 313,000 with 65 per cent. neutrophiles, 24 per cent. myelocutes, 2 per cent. eosinophiles, 2 per cent. basophiles, 4 per cent. small, 2 per cent. large lymphocytes, and 1 per cent. transitionals. The patient felt better when taking the benzol.

The patient had then, up to April 18th, taken benzol for 174 days with no evidenc of poisoning. The last white count was 313,000, the original 212,000; at no time did the leucocytes even ap-

proximate a normal level. The lowest count, 140,000, was reached after only 12 days of benzol. Recently, even with the use of benzol, there has been a rise in the leucocytes. However, with the renewal of benzol after a 3 week's pause, there was a fall from 443,000 to 350,000 during a week. Myelocytes have persisted, and even in larger percentages than in the early counts. The spleen, though not as tender, has not markedly decreased in size. Yet in spite of all these failures in the effect of benzol, the patient has been strikingly benefited as far as his subjective symptoms are concerned; he has grown stronger, gained 5 lbs., has worked even overtime, lost his dyspnœa, shows a distinct improvement in his red cells and hæmoglobin, and even with a rising white count, was not as comfortable without benzol as he was with it.

The paradoxical actions of benzol are evident from the cases reported. Kiralyfi[4], in his series of cases, had three show marged diminution of the whites to normal with a spleen still palpable and persistent myelocytes. One case of lymphatic type showed a normal count, but the lymphocytes still remained at 63.3 per cent. One myeloid case with much glandular involvement, in which X-rays caused a leucocytic increase, was brought from 208,000 to 65,000 in 3 weeks by benzol, but further use was attended by a rise. Another case gave at first a slight decrease, and then a rise from 110,000 to 290,000. Kiralyfi, as do others, notes that fever rapidly disappears on the administration of benzol.

Wachtel[5] in one case had to stop benzol on account of a resultant albuminuria. In a second case, in which arsenic injections had been of no benefit, benzol brought the whites to 8,000, increased the reds, destroyed the fever and rendered the spleen just palpable, but the myelocytes remained at 2 per cent.

Stein[6] reports one case, with no great relief with X-rays, in which, with benzol, the whites fell to 9,000 in 42 days, the myelocytes were still 11.4 per cent. and the spleen palpable. He believes it is well to follow benzol with a course of arsenic.

Billings[7] reports 5 cases, all of which had X-rays at some time. One, a case of second relapse, in which the whites fell to 3,600 with no myelocytes. A lymphatic case with a fall to 40,000. A myeloid with a fall to 9,800 with 1 per cent, of myelocytes. A fourth case, in which X-rays were employed 3 times weekly wth benzol, fell to 8,500, with a normal differential count and a just palpable spleen. A fifth lymphatic case that fell to 5,900 with some increase of the lymphocytes and an enlarged spleen. He speaks of a basophilic granular degeneration of lymphoctyes, a condition we found in some smears.

Neumann[8] reports a case in which the ordinary dosage of benzol was used. The patient felt better, the spleen decreased, at the end of 36 days' treatment the whites numbered 5,300, and the patient considered herself well. But, even after stopping the benzol, the whites continued to fall, reaching the number of 200 per ccm., then developed weakness, fever, diarrhœa repeated copious nasal bleedings, hæmorrhagis stomatitis and rhinitis, with death 39 days after stoppng benzol.

Tedesco[9] had a favorable result, in a lymphatic case, the whites falling from 120,000 to 11,000, the reds rising from 975,000 to 3,770,000 with subjective improvement.

Klein[10] has treated 22 cases with benzol, 12 of which he reports in detail. One case of myeloblastic form died with no benefit from either X-rays or benzol. Another myeloid, in which 54 X-ray treatments brought the whites from 250,000 to 19,520, was brought by benzol to 12,440 in 6 weeks; 2 weeks after stopping benzol, the whites numbered 9,920; 5 weeks after 10,180; there is still a small percentage of myelocytes, the spleen is hardly palpable and the patient is in excellent subjective health. One case of myeloid, that fell from 204,800 to 84,600 after 33 X-ray treatments, relapsed, and after 43 benzol injections of 1.5 g. fell from 142,800 to 78,800, with little improvement. Another case of myeloid, in which the whites fell from 972,800 to 597,000 in 25 days, only to show a sudden rise to 750,400 at the 37th day, falling to 388,000 on the 47th, but never dropping below 340,000, even though the benzol was given as often as 10 times daily in subcutaneous doses of 15 drops for 8 days. A further myeloid case, treated for 154 days with enormous doses of benzol by mouth and hypodermatically fell from 598,200 to 190,800, the general condition was good, the spleen and liver almost normal, but a marked anæmia, and a varying white count that never fell near normal persisted, a paradoxical effect, such as is seen in our case. Another case of myeloid that fell from 94,600 to 48,900 in 15 days after 10 X-ray treatments, then with benzol and later with X-ray in combination, to 4,600 in about 2 months. The spleen is hardly palpable, the liver very much smaller, and the differential blood picture normal, a case similar to those reported by Billings, in which, with combined treatment, he obtained normal numerical and differential values. Another myeloid case, the first count 210,800, falling to 69,000 on the 47th day, and then in 5 days suddenly rising to 103,800 with very slow diminution in the size of the spleen, but with marked effect on the fever and general well being. A further case of myeloid type with the enormous count of 988,000; given benzol, first by mouth with no great benefit, then by hypo for 18 days in doses of 4 g. and later 3 g.; the whites fell to 30,040, then to 11,520 four days after stopping the drug, and then to 1,720 19 days after. Very serious symptoms of poisoning appeared during the subcutaneous use; a severe generalized papular eruption with a sero-hæmorrhagic exudate, fever and weakness. Klein supposes that benzol has different poisonous effects as it is inhaled, swallowed

or injected, but he has used very high doses on many of his cases, and has been very free even in its subcutaneous administration. A lymphatic case with 61,200, in which X-rays had no great effect, showed a reduction with benzol to 3,650 in 20 days; at the end of 40 days, without benzol, the count rose to 13,320, to fall to 6,400 with 18 days of benzol. The patient was tuberculous, and though the spleen, glands and blood were bettered, the general condition was greatly injured.

Stern[11] reports a freshly diagnosed myeloid case with an initial count 264,000 which with doses of 4.6 g. per mouth fell to 13,600 in about 90 days. The myelocytes which had numbered 44.5 per cent. fell to 2 per cent., the reds rose from 3,500,000 to 5,500,000, the polynuclears rose from 48.5 per cent. to 74 per cent., the spleen returned to normal, the general condition excellent, with a gain of 2 kilo.

From a study of our own cases and the cases reported we may draw the following conclusions:

Benzol is a valuable addition to the therapy of leukæmia of any kind. Its institution is however, so recent, and clinical experience still so scanty, that definite conclusions as to its intrinsic value should be held in abeyance. It would seem to have no uniform action; in all cases it reduces the white cells but in some, apparently those with very high counts, it does not reduce the leucocytes to normal, while in case of 100,000 to 200,000 it may give brilliant results with normal white counts, greatly diminished or normal spleen, distinct gain in weight and strength, and loss of fever. On the other hand, we may have paradoxical reactions with falling white counts and gain of strength with no change in the spleen, or we may find decrease of the spleen with persisting high leucocytic counts, or there may be low counts with many pathological leucocytes, or there may occur sudden leaps in the number of white cells. The red corpuscles and the hæmoglobin are usually very beneficially influenced. When X-rays can be used in combination very favorable results may be obtained, the blood returning to normal with no persisting myelecoytes. It is very probable that the results of benzol-therapy are variable for two reasons: (1) The cases in themselves vary in intensity and in the fundamental pathologic conditions or etiological factors in the bone-marrow, the spleen, or lymphoid system. (2) The results are in some way dependent on the size of the dose of benzol, which dose may be either stimulating or depressing to the tissues involved and this dose may be peculiar in a marked degree to each case or individual. We would, therefore, suggest that the effect of benzol should be carefully checked by daily blood examinations so as to gauge the optimum dose, and to forestall any symptoms of benzol poisoning.

BIBLIOGRAPHY.

1. Korányi: *Berl. Klin. Woch.*, 1912, No..XLIX.
2. Selling: *Bull. Johns Hopkins Hosp.*, Vol. XXI, 1910.
3. Selling: *Beitr. zur Path. Anat.*, Bd. 51, Heft. 3.
4. Kiralyfi: *Wien. Klin. Woch*, 1912, No. XXV.
5. Wachtel: *Deutsch, Med. Woch.*, 1913, No. 7.
6. Stein: *Wien. Klin. Woch.*, 1912, No. 49.
7. Billings: *Jour. A. M. A.*, Feb. 15, 1913.
8. Neumann: *Therapue Der Gegenwart*, Feb. 1913.
9. Tedesco: *Münch. Med. Woch.*, 1912, No. 48.
10. Klein: *Wein-Klin. Woch.*, 1913, No. 10.
11. Stern: *Wein. Klin. Woch.*, 1913, No. 10.

Discussion.

DR. JOHN M. SWAN, Rochester: In November and December, 1912, I had under my care a case of acute lymphatic leukæmia in a child aged 4 years. At the earnest solicitation of the physician who referred the patient to me I ordered benzol. The second or third dose produced nausea and vomiting, which was, to say the least, an unfavorable result.

I think that we ought not to forget that leukæmia is an incurable disease. We do know that treatment with the X-rays improves the condition temporarily, in some cases resulting in definite prolongation of life. I am of the opinion that in the treatment of this disease benzol is a dangerous drug. We do not know what bad results may follow its use nor how soon.

So far as the cases reported in the literature are concerned, it seems to me that too short a time has elapsed between the cessation of treatment in Billings' cases and the published report; not more than six weeks. Klein has reported a case in which there was no result from the treatment at the end of five months. Korányi and Tedesco have reported one case in which the patient did not tolerate benzol, and one case in which it produced no benefit. Neumann has reported a case in which the patient died 39 days after the benzol treatment was begun. Wachtel has reported a case in which benzol had to be stopped on account of the appearance of albuminuria. Jesperson reports a case in which after an improvement, coincident with the administration of benzol, the disease promptly relapsed, and the patient died on the twenty-third day of the relapse. Klemperer and Hirschfield regard benzol as dangerous.

It seems to me that a drug which is capable of producing an aplastic anemia in laboratory animals is one to employ with very great caution, if not with extreme skepticism, in human therapeutics.

DR. JULIUS ULLMAN, Buffalo: Immediately following the publication of the five cases of leukæmia treated by benzol by Frank Billings described in the Journal of the American Medical Association, p. 495, February 15, 1913, I used the drug upon a case then under observation with the following history:

Mrs. B. W., housewife, aged 27, Russian Jewess. Father and mother living and well. Two sisters living, six dead; two having died

of cholera in Russia-Poland, others died in infancy. One brother living, five dead, two having died of cholera in Europe, one of small pox, and two in infancy.

Patient had usual children's diseases, always had regular menses, married five years and has two children, the youngest two years old. At last accouchement had slight perineal laceration.

Seven years ago had slight "rheumatism of left shoulder," sick two weeks.

Since two years, complains of indigestion, headaches, vomiting and gradually becoming weaker and losing weight. The weight was reduced from 168 lbs. to 127 lbs.

Patient consulted Dr. M. Hartwig who sent her to me.

Patient has had epistaxis but no blood vomited nor in stool.

Present complaint: Weakness dizziness, and a sense of pressure in the abdomen.

There is great pallor of the face, conjunctival and buccal mucosa. The liver is not enlarged, the spleen tender and tremendously enlarged extending finger breadth beyond the median line and into the pelvis covering the entire left abdominal region. There are no enlargements of lymph nodes, tonsils normal, hemic bruits over cardiac area.

The first blood examination showed hæmoglobin 50 per cent., leucocytes 140,200.

Differential count: Polynuclears, 40 per cent., myelocytes 22 per cent., baso-myelocytes 2 per cent., eosin-myelocytes 1 per cent., large lymphocytes 27 per cent., small lymphocytes 3 per cent., eosin 3 per cent., basophils 2 per cent.

March 13, 1913: Leucocytes 141,000, polynuclears 57 per cent., small lymphocytes 10 per cent., all other lymphocytes 28 per cent., basophils 2 per cent., eosinophils 3 per cent.

April 3, 1913: Leucocytes 80,500, hæmoglobin 55 per cent., polynuclears 41 per cent., small lymphocytes 7 per cent., large lymphocytes 30 per cent., myelocytes 20 per cent., basophils 2 per cent., eosinophils —

The examination of the stained specimens less granular degeneration of the lymphocytes and a tendency to a change to the transitional form.

April 16, 1913: Leucocytes 130,400, polynuclears 28 per cent., small lymphocytes 7 per cent., large lymphocytes 42 per cent., myelocytes 21 per cent., basophils 2 per cent.

April 27, 1913: Leucocytes 91,000, hæmoglobin 60 per cent., polynuclears 46 per cent., myelocytes 29 per cent., large lymphocytes 13 per cent., small lymphocytes 10 per cent., basophils 1⅓ per cent., eosinophils ⅔ per cent.

In the beginning of treatment, February 10th, a number of X-ray treatments were given by Dr. Grover W. Wende of 20 minutes duration over the spleen and the shafts of bones, but the the patient became bedridden because of the development of a severe pyrexia, 99⅘ per cent. to 105°, which ran for about three weeks. To replace the X-ray treatments the ampules of sodium cacodylate, 0.2 mg. in 1 c.c., were given subcutaneously on alternate days. The patient has materially improved in strength and general well-being, and though there is some improvement in the blood picture there has been no appreciable drop in the leucocyte count as described by various observers, but the spleen has diminished about one-half in size and the patient is up and about.

This case shows that, where for any reason the X-rays cannot be given with the benzol, that the addition of sodium cacodylate may be of decided value.

THE IMPORTANCE OF THE TREATMENT OF WEAK FEET IN CHILDHOOD.*

By BRAINERD H. WHITBECK, M.D.,

NEW YORK CITY.

THE prevalence of the deformity of weak-foot, or as it is more commonly known, flat-foot, throughout the civilized countries of the world has led the writer to present this subject for consideration with the view of urging the treatment of this condition at a period when real reconstruction of the feet may be accomplished and through persistent care and education the child may grow to adult life with well formed and strong useful feet.

At present the condition of weak-foot is steadily on the increase as various statistics show, both because there are actually greater numbers of people suffering from the condition, and because the weak foot is more frequently recognized as such, both by the physicians and the laity. The economic problem involved in this condition within the writer's knowledge has never been considered in figures but it would be astounding if worked out upon accurate lines. It is far more serious a factor in the life of the world as well as that of the individual than would be supposed. The great white plague which has through the generations ridden along on the crest of the wave of civilization, accepted as inevitable, has been shown to have appalling economic effects upon the world, and these effects have had a great influence in the concerted efforts towards stamping out the disease. Weak-foot though not in any way threatening the life of the individual as does tuberculosis, nevertheless is the most frequent and most disabling of all the deformities of posture.

1. Past assistant surgeon A. G. Heiner, U. S. Navy, in an article on flat-foot and its relation to the Navy says: "A review of the causes of discharge for disability from the United States Navy and Marine Corps during the year 1910 shows that flat-foot is second in number and that the only disease which caused a greater number of invalidings from the service was tuberculosis. The amount of damage from flat-

* Read at the annual meeting of the Medical Society of the State of New York, at Rochester, April 30, 1913.

foot is large and it will be seen that there is a marked increase in the past few years. In the writer's experience the large majority of flat-feet are found in recruits in the United States Marine Corps when they are examined at the various barracks after arrival from recruiting stations. In many recruiting offices the applicants for enlistment are examined by civilian physicians, many of whom do not appreciate service conditions."

Through the kindness and assistance of the Surgeon General of the United States Navy the writer was able to study the reports of the United States Army and Navy and those of other countries in relation to the frequency of weak-feet in those presenting themselves for enlistment in these organizations. The seriousness of this condition is fully appreciated by the military authorities and the examinations are very stringent in this respect. The following statistics include the reports of the U. S. Army and Navy and those of the English and Japanese Armies, all of which are worked out about in the same manner and therefore offer a relatively good comparison as well as illustrating the frequency of the condition. The statistics represent those men who were refused enlistment for the one cause of weak feet and does not include those who may have had weak feet in conjunction with some other defect for which they were refused enlistment. It is for that reason especially that the writer presents these reports to emphasize the fact that these men who in every other respect would be acceptable as soldiers and sailors are refused a good occupation. The writer also desires to call attention to those cases which having been accepted as apparently good risks for service fall short of expectations during the probation period of three to four months as raw recruits.

ARMY: ENLISTED AMERICAN TROOPS. DISCHARGES AND REJECTIONS ON ACCOUNT OF FLAT FEET, YEARS 1908-1911.

Years.	Mean Strength. Adjutant General's	Discharged on certificate of disability for flat feet. Number.	Ratio per 1,000 of M. S.	*Rejected by Medical Officers because of flat feet. Number above (with ratio per M. of all examined by Medical Officer.	Ratio per 1,000 of all rejected.	Ratio per 1,000 rejected for causes physical and mental.
1908	67,515	35	0.52	7.07 388	(7,434) 52.19	(6,694) 57.96
1909	75,399	43	0.57	7.95 187	(3,356) 55.72	(3,081) 60.70
1910	71,814	31	0.43	3.82 96	(2,378) 40.37	(2,051) 46.81
1911	73,000	61	0.84	†5.01 227	(4,110) 55.23	(3,604) 62.99

* NOTE: Only those applicants are examined by Medical Officers who have been carefully examined and found physically qualified by the line officers at the various recruiting stations in cities.

† January to November 1911, only.

NAVY MEMORANDUM FOR THE SURGEON-GENERAL RELATIVE TO FLAT-FOOT:

Invalidings from service, 1909, 104.=1.8 per 1,000 of force.

Invalidings from service, 1910, 147.=2.5 per 1,000 of force.

Invalidings from service, 1911, 168.=2.8 per 1,000 of force.

Invaliding by reason of flat-foot, 1911, for men of less than 4 month's service equalled 38, or about 2 per 1000 for recruits.

Prior to 1909 there appears to have been no title for flat-foot in the navy list, these case evidently being carried as "deformities" or "other diseases of this class."

Prior to the current year the number of rejections other than for color-blindness was not returned, so no statistics are available for flat-foot as a cause for rejection.

[2] REPORT OF THE HEALTH OF THE ENGLISH ARMY FOR THE YEAR 1909, VOL. LI.

Certain diseases were on the increase for the past 10 years as causes of rejection for enlistment; flat-foot was among those on the decrease.

Percentage of rejections as unfit after three months. .06 decrease.

FIGURES FOR 1909.

Cause of Rejection.	Total number inspected 706,492. Number rejected on inspection.	Ratio per 1,000 rejected on inspection.	Unfit within 3 months of enlistment.	Ratio per 1,000 rejected as unfit within 3 months of enlistment.
Flat feet....	294.	5.85	26	.52

FIGURES FOR PERIOD 1899-1908.

Cause of Rejection.	Total number inspected, 706,492. Number rejected on inspection.	Ratio per 1,000 rejected on inspection.	Unfit within 3 months of enlistment.	Ratio per 1,000 rejected as unfit within 3 months of enlistment.
Flat feet....	8,129	11.51	407.	.58

REPORT FOR TROOPS STATIONED IN THE UNITED KINGDOM FOR 1909.

Average Strength.	Disease.	Admitted into the hospital.	Invalids discharged the service.	Average number constantly sick	Number sent home.
110,492	Flat-foot	63	26	3.20	0
	REPORT OF TROOPS IN THE MEDITERRANEAN.				
15,946	Flat-foot	12	1	.57	4
	REPORT OF TROOPS IN SOUTH AFRICA.				
11,784	Flat-foot	1	0	.01	0
	REPORT OF THE TROOPS IN INDIA.				
71,556	Flat-foot	20	9	1.29	8

ENGLISH ARMY REPORT.

Total number inspected.	Year.	Cause of rejection.	Number rejected at inspection.	Ratio per 1,000.	Unfit after 3 months.	Ratio per 1,000.
84,402	1900	Flat-foot	761	9.02	25	.30
62,371	1906	Flat-foot	488	7.82	13	.21
59,393	1907	Flat-foot	304	5.12	13	.22
61,278	1908	Flat-foot	372	6.07	24	.39

[2]ANNUAL REPORT OF THE HEALTH OF THE IMPERIAL JAPANESE ARMY.

Date.	Disease of injury.	Old patients.	New patients.	Total.	Days' sickness.	Average No. of men sick daily.	Ratio per 1,000 of force sick daily.	Recovered.	Treatment ceased.	Dead.	Invalided.	Patients remaining.
1896.....	Sore from walking..	..	3	3	34	0.09	0.01	3	..	..	..	..
1897.....	" " " ..	..	29	29	571	1.56	0.10	26	..	..	..	3
1898.....	" " " ..	3	36	39	1,150	3.15	0.17	38	..	..	..	1
1899.....	Foot sore.....	1	46	47	675	1.85	0.09	44	..	..	..	3
1900.....	" "	3	39	42	882	2.42	0.10	41	..	..	..	1
1901.....	" "	1	40	41	557	1.53	0.06	39	..	..	..	2
1902.....	" "	2	27	29	453	1.24	0.04	28	1	..	..	..
1903.....	" "	..	53	53	1,129	3.09	0.10	49	..	..	..	4
1904.....	" "	5	34	39	723	2.00	0.05	36	..	..	..	3
1905.....	" "	3	27	30	515	1.41	0.04	30	..	..	..	..
1906.....	" "	..	66	66	1.972	5.40	0.14	51	3	..	..	12
1907.....	" "	12	26	38	743	2.04	0.05	35	1	..	..	2

The Examining Surgeon of the Civil service Commission of New York City reports "at the last examination for patrolmen held by the Municipal Civil Service Commission of New York 204 candidates out of 3,746 examined were rejected for flat-foot or everted foot. In the last examination for firemen 136 candidates out of 2,820 were rejected for the same cause. During the last ten years about 20,000 men have been examined for patrolmen and 12,000 for firemen. The proportions of rejections for flat-foot and everted foot have been in about the same proportions as shown by the above figures as the same standards have been maintained and the same examiner has been in charge."

A beginning has been made in the routine examination of the school children of New York City. The only accurate statistics at present are as follows: Of 2,059 boys at the DeWitt Clinton High School, 667 or 32 per cent had weak feet and 260, or 12 per cent had broken arches. In 1908 the High School of Commerce showed 18 8-10 per cent of the boys to have the worst form of flat feet. The percentage of flat-feet in the Elementary Schools is said to be much higher by the Medical Authorities but no exact figures can be obtained at present.

The frequency of weak-foot and its attending discomfort in nurse in training is well recognized. [3]Lovett at the Boston City Hospital found that many nurses were obliged to leave service on account of weak-foot for more or less extended periods.

In 1892 the aggregate loss of time was 42 days.

In 1893 the aggrgate loss of time was 125 days, one nurse left service permanently.

In 1894 the aggregate loss of time was 41 days, one nurse left service.

Since 1895 when he started to prevent faulty attitudes of the nurses, feet no nurse has been off duty for foot trouble up to January 1st, 1897, when this report was made.

[4]T. H. Openshaw, one of the attending surgeons of the London Hospital in 1894 and 1895 said, "the importance of this subject and the frequency with which we are called upon to treat these cases may be judged from the following statistics. Out of 1,444 cases of deformity occurring in 17,619 surgical out patients at the Munich Hospital 338 were cases of flat-feet, in other words in every 100 cases of deformity, 23 were flat-feet, or 2 per cent. of all surgical cases." The study of the statistics of the adult cases would not show that their deformity of weak-foot was necessarily a condition which had existed from childhood but might have come on after reaching the age of maturity, but the large percentage of school children of the N.

Y. Public Schools found to have weak-feet shows clearly that if untreated they would furnish a seriously large supply of deformities in adult life.

[5]For the year ending September 30, 1911, there were treated in the orthopedic department of the Hospital for Ruptured and Crippled, New York, 8,020 patients. Of this number 2,102 were treated for flat feet or over 25 per cent. of all the deformities and disabilities presenting themselves; 244 of these were under 14 years of age and 529 were between 14 and 21, 27 per cent. For the year ending January 1, 1913, there were treated at the New York Orthopedic Dispensary[6] 498 new cases of which 18 were under five years of age, 19 from 5 to 10 years, 38 from 10 to 15, 54 from 15 to 20. Whitman in an article presented in 1906 showed that in his private practice of 189 males, 41 were under 10 years of age, 29 between 10 and 20, and of 211 females 27 were under 10 years, 41 between 10 and 20 years, or 17 per cent. under 10 years of age and 17 5-10 per cent. between 10 and 20 years. This larger percentage of children is due undoubtedly to the greater care with which the children of the better classes are observed. The statistics of Whitman are made up of cases which have been brought because of recognized deformity or disability and therefore do not represent the widespread existence of weak feet among children as do the statistics of the public school children of New York City, for instance. The latter examinations were made as a routine measure among all the children of the schools so far inspected. The importance of the examination of every child appears therefore as many of the discovered cases would not have come to notice until adult life was reached and then because of disability.

[7]The functions of the foot are two, namely a passive support and an active lever for lifting and propelling the body. Acting as a passive support the feet assume that attitude which is best adapted to the standing position. The legs are then somewhat rotated outward in order to more thoroughly maintain the equilibrium. The feet are also rotated outward, the muscles are relaxed, the joints fixed, and the ligaments bear the greater part of the strain. In performing the second function, that of lifting and propelling the body, the normal motion should be one by which the greatest power may be obtained with the least amount of strain. If the feet are held parallel to each other the weight falls to the outer side of the great toe and about through the second toe. As the body moves forward the calf muscles lift the heel while the metatarsal bones act as the fulcrum on which the weight is borne. In the complete cycle of the action of the foot the weight is borne first upon the heel, then upon the outer border of the foot and finally upon the ball, the toes giving the last push to the next step. The attitude of passive support is essentially one of weakness because in it the weight falls to the inner side of the foot and there is a tendency towards a downward and inward displacement of the astragalus and scaphoid. This attitude is one which is a rest to the muscles at the expense of the ligaments and if assumed for long periods in standing brings about a condition of stretching and straining of the ligaments. If this attitude of outward rotation of the feet is assumed in attempting the function of active motion the proper performance of the cycle of the normal foot action is impossible because the weight falls to the inner side of the foot and the power of the fulcrum is lost. The strain on the ligaments and muscles is very great under these circumstances. By the persistent assumption of the attitude of outward rotation both through long periods of standing and in walking a deformity is produced in which the astragalus is rotated downward and inward upon the os calcis stretching the ligaments and muscles and resulting in an actual subluxation. The navicular is depressed to a lesser degree and the entire inner border of the foot is depressed.

There is a type of weak-foot to which the writer desires to call particular attention in which the arch is present but in which a persistent attitude of outward rotation of the leg and abduction of the foot is assumed. Symptoms of a like nature present themselves as in the deformity where the arch does not exist and especially pain may be prominent, due to the faulty attitude and undue strain upon a resisting ligamentous structure. There is no type of weak foot where the true condition is more often unrecognized. If the feet are examined the absence of the true flat foot leads the physician to a faulty diagnosis of rheumatism, a mistake all too frequently made.

Several causes may be mentioned which produce weak feet in childhood. Congenital conditions of general weakness or abnormal development, overweight of the body, bringing undue strain upon the feet, a prolonged illness or general malnutrition when the muscular power is greatly below normal, and lastly of great importance, the improper attitudes assumed by children either as the result of the other mentioned causes or through faulty education or badly constructed shoes. We can all remember from our own childhood the advice of the parent, the school-teacher and the dancing-school teacher to walk with the toes turned out. It has been through the ages wrongly considered the proper attitude of the proper child. Badly constructed shoes designed to please the eye and not the foot, with pointed toes, high heels, and made upon a last which encourages abduction of the foot, act as powerful factors in the causation of weak feet.

The symptoms of weak feet in childhood are more those of awkwardness, weakness and fatigue. Local pain is not often complained of, though in occasional instances it is met with to a moderate degree, especially in that type of weak-foot described above, where the arch is

present but the foot is abducted. Of course, when a child first begins to walk it must learn the art of balance in the upright position, and no idea can be obtained at this point of the future attitude of the feet to be assumed. However, after a few weeks the weakness of the feet becomes apparent. The child falls easily and is very unsteady in his gait. The term of weak ankles is often applied to this condition. More persistent postures are now assumed for the feet in walking either outward rotation, which is, as we have seen, an attitude of weakness, or inward rotation, commonly known as "toeing in." This latter posture is very objectionable to the parents and friends, but is assumed as a compensation for the weak feet, giving a somewhat more stable balance in walking in these cases. In reality, it is a less objectionable attitude than outward rotation, as it guards the feet against any increase of the deformity. Thus it will be seen that any effort to correct the toeing-in *per se* would be harmful to the child. On the other hand, this attitude will gradually disappear when the feet are properly corrected. It is, however, sometimes awkward in the extreme and it is for this condition that advice is sought.

Deformities of the lower extremeties are often seen secondary to a condition of weak foot. Early general bodily weakness of rachitic origin or some other exhausting illness may be contributing cause also, but even in the presence of weak feet alone the persistent incorrect attitude will produce a mild type of knock-knee. Bow legs often bring about a compensatory weak-foot if long persistent. Because of these faulty attitudes and muscular weakness fatigue is a common symptom. These children do not appear to be as active as their fellows, do not want to play or walk, and often complain of being very tired. Accompanying this feeling of fatigue as the child grows a little older is the tendency toward round shoulders. In pronounced cases, pallor and loss of appetite may exist. A comparatively small number of cases have pain in some portion of the foot and in a few muscular spasm is present. These cases are due as a rule to lack of diagnosis and therefore improper treatment and neglect.

The main thought in presenting this subject has been to bring before the medical profession in general the wide-spread existence of this condition of weak-foot and its harmful results, and to urge the careful observation of all children entrusted to their care in the early years of childhood, in order that appropriate measures may be used to correct existing deformities and to prevent more serious conditions in the future. Time will not permit an exhaustive discussion of the treatment of the various grades of weak-foot, but the writer desires to consider the principles which govern the proper correction of the deformity. Prevention is of the utmost importance. [3]Lovett says "the adult foot of the modern civilized American compares unfavorably, from an anatomical and mechanical standpoint, with the foot of the child of the savage. The child starting life with a foot representing certain definite anatomical characterstics reaches adult life among savages with a foot but little altered in these essentials, but in civilized life in practically all cases with a foot distorted and weakened." It is our duty, therefore, to guard against this state of affairs. When the child begins to walk a proper shoe should be supplied. The toes should have sufficient room for their free movements. The inner line of the shoe should be straight, the shank high and narrow and sloped to the outer side. The forward part of the sole should slope slightly outward, thus aiding adduction. The high laced boot is preferable to the oxford tie.

When the condition of weak-foot is recognized in the child, the fundamental principle is to restore the feet to that position which has been described as that of the normal foot. The proper shoe as described above is supplied and, in order to throw the weight to the outer side of the foot, the inner border of the sole is raised one-quarter inch. This procedure has a tendency to prevent abduction and to aid in bringing about adduction. If the child toes in, this building up of the shoes does not tend to correct that deformity, but, as has been stated before, it is secondary to the weak foot and will in time correct itself as the feet improve. In the mild types of weak-foot this method is often sufficient and it is very interesting to observe the gradual improvement that results in the steadiness and loss of awkwardness. The arch will be seen to develop and the child soon walks with a strong, springy gait. Exercises are not practical, naturally, in the very young, but when the child reaches the age of four or five, they may be used with decided benefit. Proper walking, however, is the most efficient exercise for the feet, and is one which is always present during the activity of the child, provided the feet are held in the proper attitude. In a large number of cases, however, the child is not able to give its assistance towards voluntary correction of deformity. It is too young and too preoccupied to give the proper attention. Therefore the writer has used the method devised by Whitman, that of applying a special form of brace to the foot which will hold the foot in the proper attitude at all times without the voluntary assistance of the child. Strong arguments have frequently been brought forward against the use of any steel support in the treatment of weak feet, especially in children. This may be true in the use of the ordinary forms of plates which merely support by pressure across the middle of the sole without any tendency to correct valgus or abduction. Moreover they are so made as to limit the action of the feet from heel to toe. The Whitman brace, on the other hand, is so constructed as to correct abduction by holding the foot in adduction and at the same time does not restrict the free action of the foot in the

corrected position. By its means, downward and inward displacement of the foot is corrected, the patient walks on the outer border of the foot and the normal action of the foot is restored. This brace, therefore, is not merely a support but essentially a corrective appliance, and as such excells any other form of apparatus. This brace is made upon a plaster cast of the foot and accurately fitted. Objections to the use of this brace have usually been in the nature of complaints of its difficulty of adjustment. It is needless to say that it is upon the efficiency and manner of taking the casts and the accuracy of fitting the braces that the success depends. Children, however, are not inclined to resist the treatment and quickly become accustomed to the braces. The braces should be worn from six to eight months, when new casts are taken and new braces made, because of the change in the foot and because of the growth of the child. The brace treatment is continued from four to five years, or even longer, and then the inner border of the shoe may be raised to hold the foot in continued adduction. Those cases which present symptoms of pain or moderate muscular spasm require a preliminary treatment by strapping with adhesive plaster before applying the braces. Extreme cases of spasm, uncommon in childhood, will require an anaesthetic, manipulation, and plaster paris dressing in extreme adduction and inversion for four to six weeks and then strapping, followed finally at the appropriate period by braces and exercises.

In conclusion, let me present the principal points on which I desire to lay emphasis:

1. That weak foot is the most disabling and widespread of all postural deformities affecting all classes of society and occupation.

2. That a decidedly large number of cases exist from early childhood.

3. That as the result of various causes brought forth, faulty attitudes are assumed for the feet which, though not necessarily causing disability in childhood, are nevertheless powerful factors for harm in adult life.

4. That the proper treatment of this condition in childhood is essential to the prevention of disability in adult life, when interference with occupations is a serious matter.

The writer has presented this subject in this manner in order to bring before you the great and compelling responsibility which the physicians in general should realize in the supervision of the children entrusted to their care. The future men and women of the nation are now passing through the stage in their growth and development as children, when evils arising from weak feet may be prevented. More and more are the physicians of today held responsible for diseases and their sequelæ occurring in their communities and they should be held equally responsible for the deformities and discomforts of tomorrow in the men and women who were once their charges when little children.

BIBLIOGRAPHY.

1. *"United States Naval Medical Bulletin No. 4,"* vol. 5, October, 1911, page 451.
2. Surgeon General Library, Washington.
3. R. W. Lovett, *"Boston M. & S. J.,"* CXXXVI, page 197.
4. T. H. Openshaw, *"Clinical J.,"* 1894-95, vol. 5, page 106.
5. *"48th Annual Report of the New York Society for the Relief of the Ruptured and Crippled."*
6. *"45th Year Book of the New York Orthopedic Dispensary and Hospital."*
7. *"Whitman's Orthopedic Surgery."*

Discussion.

DR. ROLAND O. MEISENBACH, of Buffalo, stated that the topic of Dr. Whitbeck's paper seemed to him to be a timely one, inasmuch as the majority of foot work is in the adult rather than in the child. This emphasized immediately the fact that if the child's feet are carefully guarded there will be less adult foot trouble. I am daily convinced that if many who have weak feet in adolescence had been taken care of earlier in life, they would not only have good feet, but in all probability would have stronger and better formed feet.

We must not confound the appearances of the feet in very young children. Although, when babies, we believe that they have weak or flat feet, we must not forget that there is a cushion of fat in the childs foot which is absorbed later on in life. This pad of fat may give the appearance of a flat foot, but in reality the arch is not down. By weakness of the feet we commonly mean pronation; that is, weakness of the posterior tibial group, or perhaps an over-strong peronei group; in other words, an unequal balance of muscle action about the ankles. To overcome this, I have been in the habit of using, especially in children, a rubber muscle, which I am passing around. The purpose of this is to take the place of the weaker muscles to counterbalance the motion at the ankle joints. It is surprising to see how quickly the weak muscles upon which the foot is dependent will "take up." This is due to two causes: First, because the rubber muscle allows the flabby or over-stretched muscle to take up, and secondly, by the hyperæmia, which the artificial muscle causes locally.

The artificial muscle has the advantage that it does not interfere with shoeing or bathing, but more than that, its action is continuous day and night. In treating weak feet, it is often forgotten that they should be held in the proper position at night as well as during the day. This I think especially holds good in children. A pillow placed at the foot of the bed so that the bedclothes will not bear down, and some support, as for instance, the artificial muscle, holds the foot in proper position during the night time. In order to put on the proper night splint, it must be elastic and flexible and should not be held rigid. I have used the artificial muscle in certain cases of infantile paralysis where the muscles were in a state of paresis due to over-stretching, with satisfactory results.

In very young children, plates should not be prescribed without exercises. There are many exercises which can be used to advantage in developing the foot.

Time will not permit me to go into this topic as I should like to, and I am sure that you will all agree with me that it is very important to carry out the early treatment of weak feet in children in order to prevent future foot trouble.

A PRELIMINARY REPORT ON THE TREATMENT OF TOXAEMIAS OF PREGNANCY WITH PLACENTAL SERUM.*

By ABRAHAM J. RONGY, M.D.,
NEW YORK CITY.

NEARLY all of the symptoms incident to pregnancy, from simple morning sickness to pernicious vomiting and eclampsia, are only varying degrees of toxemia. Heretofore all investigations as to its causation were directed to the changes found in the kidneys, liver and even the brain, and the symptoms complex were attributed to the alteration of function in these organs. Recently our conception of the pathology of the toxemias associated with pregnancy, including even some of the persistent skin lesions often found during gestation has undergone great changes. The pathological changes usually found in the various organs in patients who succumbed to one of the toxemias of pregnancy are at present considered secondary to some poisonous substance circulating in the maternal circulation which have their origin in the product of conception.

Wolf-Eisner and other investigators positively state that during pregnancy foreign protein substances are thrown into the circulation of the mother and there, under certain conditions, bring about a state of intoxication as a result of a process of absorption and the consequent oversensitiveness.

The nature and exact origin of these substances is as yet not definitely known. It may be in the fœtus, or placenta, or it may be due to changes brought about in the maternal metabolism consequent to gestation. The preponderance of clinical investigation, however, point to the fact that these symptoms of intoxication are due to a protein substance which has its origin in the product of conception.

Normally these substances are neutralized by the antibodies formed in the maternal circulation.

Theis maintains that fœtal serum albumin is of a different composition from maternal blood serum albumin; under varying pressure in fœtal and maternal systems fœtal serum albumin enters the mother's blood by dialysis. It acts as an antigen and provokes the formation of antibodies. When fœtal serum enters the mother's blood the union of this antigen with the antibodies leads to anaphylactic symptoms of which eclamptic convulsions are one. The severity of the toxemia will depend upon the amount of these substances in excess of the antibodies. That there are present substances in the maternal circulation of the pregnant woman which are not found in the non-pregnant was fairly well demonstrated by the investigation of Von der Heide and myself in the use of fœtal serum to cause the onset of labor. While labor has not been terminated or caused to set in, in all the cases experimented upon, yet we proved conclusively that it causes contraction of the uterus in the majority of cases. Heide termed these unknown substances as "labor substances." It would seem almost reasonable to assume that if, for some reason, these "labor substances" are suddenly thrown into the maternal circulation in excess amounts, that it would cause contraction of the entire muscular structure of the body, producing what is known as the eclamptic convulsion.

We first observed that placental serum has a favorable effect upon toxemia of pregnancy in the course of our investigation of the effect of fœtal serum upon the onset of labor. Case 19 of that series was a woman who was admitted to the hospital with severe symptoms of an impending eclampsia. After a careful examination I decided to try to induce labor with fœtal serum. After the first injection I noticed improvement in the general condition of the patient. I, therefore, concluded to use the serum as a therapeutic measure. The result in this patient was such that in addition to onset of labor brought about by the serum, all the toxic symptoms improved before labor actually set in. Realizing the possible therapeutic value of placental serum in late toxemia of pregnancy I decided to make use of it in the early toxemia, that of pernicious vomiting.

In consulting the literature on the subject it was apparent that no systematic use was made of placental serum in the treatment of vomiting pregnancy. We were fully familiar with the work of Lockman and Treis, Fruend and Pincunsohn, A. Mayer, Wolf-Eisner and other investigators who used placental serum in the treatment of eclampsia and the skin lesion of pregnancy, particularly urticaria. However, S. Fieux, in the Annals of Gynecology and Obstetrics, December, 1912, reports his experience with placental serum in the treatment of pernicious vomiting of pregnancy in four cases. The method adopted by him, was to inject 15 c.c. of horse serum to be followed later by 15 c.c. of serum of pregnant woman. All his cases improved and is, therefore, very favorably impressed with the therapeutic action of the serum. He concludes by saying that one must consider the improvement of the symptoms to be due to the presence of antibodies in the blood of normal pregnant woman, counteracting the poisonous substances.

* Read at the annual meeting of the Medical Society of the State of New York, at Rochester, April 30, 1913.

My experience with the use of placental serum consists of four cases of severe pernicious vomiting of pregnancy and two cases of threatened eclampsia.

CASE 1.—History No. 3803. Mrs. J. G. Age 28. Para. 1. Russian, wife of dentist, patient of Dr. P. Hurowitz. Menstruated last September 10, 1912. Gives history of persistant vomiting for the past five weeks. Was confined to bed the last four weeks. Lost a good deal of weight, and seemed exhausted. Interruption of pregnancy was advised by attending physicians. Saw her at her home with Dr. Hurowitz November 21st. We decided to remove her to the hospital and try the injection of fœtal serum, and if no signs of improvement were noticed within 36 or 48 hours, to induce an abortion.

She was admitted to the Jewish Maternity Hospital the same day. Urine showed slight traces of albumin. Urea was normal. Sp. gr. 10, 12. Some granular casts. Blood pressure 95. 10 c.c. of placental serum was injected in tramuscular at 5.50 P. M. Patient continued to vomit. At 8 P. M. 10 c.c. of P. S. was again injected. Patient felt somewhat nauseated, but did not vomit. She slept from 12.30 to 5.50 A. M. and did not vomit during the night.

November 22d 10 A. M., 10 c.c. of P. S. was injected into right thigh. Patient did not vomit during the day but felt highly nauseated. Passed ounces XXXV of urine during the 24 hours.

November 23d, patient did not vomit but complains of pain in the back and abdomen also slight headache.

November 24th-25th, patient felt very much improved.

November 26th, general diet was given. She continued to improve and was discharged from the hospital November 28th.

Patient remained well until December 7th, when she commenced to vomit again. Was not notified until December 10th, when I saw her again. She appeared quite exhausted. She was readmitted to the hospital on the same day. At 4 P. M. 10 c.c. of P. S. was injected and at 8 P. M., 10 c.c. more was injected. Patient did not vomit until 11 P. M.

December 11th, 2 P. M., 15 c.c. was injected. Blood pressure, 110. Felt very much nauseated but did not vomit. At 8 P. M. began to vomit quite severely. 10 c.c. of serum was again injected.

December 12th, 1 A. M., patient vomited fluid tinged with blood, but did not vomit any more during the entire day.

December 13th patient vomited once, but felt nauseated the entire day. December 14th, patient complains of pain in the abdomen. Vomited once at 9 P. M. and feels nauseated.

December 15th, X c.c. of P. S. was again injected did not vomit. General condition better.

December 16th, vomited twice, feels weak.

December 17th, vomited a few times, but does not seem to be affected by it. Feels much better.

December 18th, patient vomited a few times and felt nauseated. At this stage of her illness her general condition was very much better, while she still vomited a few times, but she retained a good deal of food. I commenced to give her ℥ii of the P. S. per mouth every two hours. Patient still vomited occasionally until December 22d, when her vomiting ceased.

She remained in the hospital until December 31st and was discharged in good condition.

CASE 2.—History No. 3946. S. B. Age 20. Para. 1. Pregnant 8 weeks. Confined at Mt. Vernon Hospital in charge of Dr. Goodwin. General condition very poor. Doubtful if she could withstand interruption of pregnancy. Her pulse remained between 140-150. I suggested to Dr. Goodwin to try Placental serum as "there is not much to lose." Patient was transferred to the Jewish Maternity Hospital the same morning, December 30, 1912. At 3 P. M. XII c.c. of P. S. was injected intramuscular. Patient still continued to vomit. ℥ii of serum every two hours was given per mouth.

December 31st, patient continued to vomit, but general appearance better, conjunctive less jaundiced.

January 1st, pulse dropped to 108 and is vomiting less, retains some zoolack.

January 2d, general condition much better, pulse between 108-116, complains of severe headache.

January 3d, patient was put on general diet and during the following 10 days of her stay in the hospital she gradually improved, vomiting occasionally only.

She was discharged January 13th, in good condition.

CASE 3.—A. G. History No. 40224. Patient of Dr. Ralph Waldo. Admitted to Lebanon Hospital February 24, 1913. Para. 111. Three weeks prior to her admission she commenced to vomit and at the same time began to lose a great deal of weight. Urinary examination showed traces of albumin, 7½ grains of urea to the ounce, few granular and hyaline casts. Notwithstanding all treatment patient still continued to vomit.

March 7th, at the suggestion of the pathologist of the hospital, Dr. E. Bernstein, XV c.c. of P. S. was injected intramuscular. Patient vomited one-half ounce of greenish fluid. An hour later she began to retain some broth and soup. March 9th, 10 c.c. of P. S. was again injected, patient takes more nourishment.

March 11th, patient developed erysipelas of the right ear and face. March 13th, patient died while expelling the fœtus.

CASE 4.—I. M. Patient of Dr. Dorsey M. Lewis of Middletown Del. Age 38. Para. VI. Menst. last, October 6 1911. Admitted to the Jewish Maternity Hospital, May 12, 1912, with

the following history. Three weeks prior to her admission patient commenced to have severe headaches and general weakness, felt nauseous and vomited 2 to 3 times daily. At the same time patient noticed that her sight was failing.

On admission patient gave all classical symptoms of an impending eclampsia. Induction of labor by catheter was decided upon, and at the same time 10 c.c. of placental serum intramuscularly was given.

May 13th, patient had comfortable night, headache slightly improved. Blood pressure fell from 238 to 180.

May 14th, catheter removed, as it failed to induce uterine contraction. She was again injected with 26 c.c. of placental serum. Her general condition much better, passed a greater quantity of urine and eye sight improved. Blood pressure 165.

May 15th, general condition good, patient feels comfortable. Blood pressure 190. 5 c.c. of P. S. was again injected.

May 16th patient much brighter, was able to write address on an envelope. 5 c.c. of P. S. injected.

May 17th, patient began to complain of slight abdominal pain. At 9 P. M. active labor pains set in and delivered at 11 P. M., child weighing 4 lbs., 11 oz., and alive. Patient gradually improved and was discharged May 29th.

In this patient I am not certain what caused labor to set in, as the catheter was removed 3 days prior to the onset of labor. It is questionable whether the continued use of P. S. did not incite uterine contractions. However, the general improvement noticed after the first injection of the serum, that I was not concerned about the termination of labor any longer.

Case 5.—D. M. Thirty. Para. 11. Menstruated last, June 15, 1911. Admitted to the hospital March 4, 1913, complaining of severe headaches, dimness of vision and slight edema of the legs. Urine was full of albumin, hyaline and granular casts. March 5th at 2 P. M., patient was injected with 11 c.c. of P. S. intravenously. After the first injection she appeared improved, the albumin and casts deminished in amount. She developed a polyurea, and in three days all the symptoms pointing to eclampsia disappeared.

March 6th, patient was again injected with 22 c.c. of P. S.

March 7th, another injection of 20 c.c. was given.

She was delivered March 7th, at 3.45 P. M., of a female child weighing 8 pounds.

In this patient the serum was used to cause onset of labor, as mentioned above.

Case 6.—A. S. 28 years. Para. 1. Had two miscarriages. First in the 5th week, second at 2 months.

Menstruated last, December 1, 1912. About two weeks later, patient began to complain of some distress over the lower portion of the sternum, same continued until about January 15th, when she began to vomit, increasing in severity and not limited to any period of the day.

She was admitted to the Jewish Maternity Hospital March 17th. 15 c.c. of P. S. given intramuscular with no appreciable effect. Serum was also administered by mouth, ʒii every two hours.

March 18th, 10 c.c. of P. S. injected, patient still vomits, but general appearance better, blood pressure 121.

March 19th, 20th, 21st, 22d patient's condition better, retains some food.

March 23d and 24th, patient feels worse, does not retain any food, very restless and has severe headache. Blood pressure 111.

Patient felt slightly better 25th, 26th, 27th.

March 28th, patient grew worse and I decided to inject the serum intravenously and 10 c.c. was given. Patient had slight reaction and severe precardial pain lasting about 5 minutes. The following day patient did not vomit.

March 30th, patient vomited once during the night.

March 31st, patient began to vomit again, but not so severely. She still continued to vomit, but partly retains food. Urine analysis showed no albumin or casts.

The diet for these patients was not limited. The nurse was instructed to give them all the food they asked for. As a general principle they were given lesser quantities at more frequent intervals. Vomiting was not a contra indication for food. The patient's preference for a particular variety of food was always attended to. They all were given large quantities of water to drink. As a rule they were kept in bed, and as soon as the general conditions improved they were sat up on a chair and even walked about the room. These patients, as a rule, do not sleep and are restless, and this was controlled by trional in sufficient doses. Sleep is very essential in these cases of exhaustion.

The main criterion in these patients, I believe, is the pulse rate and the general appearance. If the pulse remains 100-110 there is no danger, even if they do vomit, the intoxication could not be very severe. A drop in the pulse rate takes place in these patients before the vomiting is controlled. I am fully aware that the number of patients treated in this manner is too few to base any definite conclusions as to the value of placental serum in the toxemias of pregnancy, still the marked improvement in Cases I, II, IV and V, I think warrants its further use, particularly so when we have had so little success in the treatment of the severe forms of vomiting of pregnancy. Heretofore we had no rational method of treatment and in almost all instances we were compelled to wait for the woman's health to be so menaced that a theraputic abortion became imperative.

Finally I wish to state that I believe that our success in preventing or relieving these various

forms of toxemias of pregnancy will be hastened if we direct our attention to the maternal circulation, not to the end results brought about by changes in some of the internal organs, like the kidneys, liver, etc.

The alteration of structure and function of these organs are secondary to some poisonous substances circulating in the maternal blood and the discovery and isolation of these foreign substances is the problem that we shall have to solve in the future.

THE GALL BLADDER AND ITS PASSAGES. A PLEA FOR EARLY OPERATION.*

By LOUIS F. O'NEILL, M.D.,
AUBURN, N. Y.

THE last generation has added much to the total of exact knowledge with which the physician is equipped to combat disease. Beside observation is supplemented by the innumerable aids of the laboratory, and there are available, statistics from the most responsible quarters giving the probable course and danger to the patient of any symptom complex.

We are enabled to judge as to whether a condition is local or general, or, if local whether it will remain so or can be made to do so. We are enabled to learn of the efficiency of all the vital organs and of their relation and importance in the condition presenting. The development of asepis and the improvement of technic has made exploration of the body safe.

With these advantages it has been found that diseases or conditions have a fairly constant history which may be taken up at any point in their course and written out to its very probable conclusion.

Experience has established the fact that it is within our power to arrest absolutely or to alter favorably the course of certain affections which, when unhindered, advance with ever increasing complication to the destruction or crippling of the patient. When for a given condition the greatest immediate safety, as well as protection from all the remote sequela, is conserved by operation that condition should be recognized as a surgical condition and operation considered and advised at the earliest favorable moment. Let us then have the courage of our convictions and operate, upon diagnosis, conditions in which delay serves only to allow complications to develop or become intensified. Were not facts so stubborn such a plea would be superfluous. The Germans operate twenty per cent. more incipient malignancies than do we; and one of our leading teachers pleads for the recognition of stomach cancer as a surgical disease from its incipiency, although, in medical hands, it has a conceded mortality of one hundred per cent. When physicians, generally, accept and act upon this classification, results in many other conditions will equal the results obtained in the treatment of the appendix, which is now everywhere removed, in its first inflammatory stage, with its walls intact. The time is not far distant when the presentation of an advanced surgical condition for operation will be as much *prima facie* evidence against those in charge as is the presentation of a pus appendix.

It will be my effort to show that the diseased gall bladder meets the requirements of this classification perfectly. That, in its early surgical treatment, exists the greatest factor of safety to life; that early treatment encounters the minimum of complications; and that by early treatment disabling and dangerous sequelas are avoided.

The consensus of opinion among medical men generally is not clearly defined as regards gall bladder and related conditions. The truth of this statement is amply established by the conditions in which such cases present for operation.

The majority bring with them a history of more or less temporizing treatment extending over long periods of time. During that time the patient will have been treated for all of the various digestive disturbances until the colic appears and thereafter usually for some years for more or less severe attacks of billiary colic. This condition of affairs exists in most communities, and such cases are frequently presented at all clinics. The general mortality is far too high and is materially affected by the timidity or delay of those responsible for the treatment.

The following data are presented in the hope that the number of those who believe that gall bladder pathology is a progressive process may be increased and that more of us may be led to bring our cases to early operation when the prospect of complete success is brightest.

The gall bladder and its passages may be, in whole or in part, affected by disease or trauma and in the course of the affection produce inflammatory changes in any of the viscera near; the stomach, duodenum, pancreas, colon, liver and so on.

While we all seem to agree, with Lartigau, that the stones are the direct result of infection, every possible channel has been held to be the source of the infection. It has been held that the infection traveled up the bile stream from the duodenum, and the occasional presence of the typhoid bacillus in the gall bladder has been offered in substantiation. For our purpose it will be enough to say that it is now generally believed that stones originate almost invariably in the gall bladder as the result of a cholecystitis from bacteria which have passed through the liver without being destroyed. I shall offer no further proof of this assertion because it is accepted so generally. This one fact should be enough to establish gall stones as a surgical disease pure and simple, because it establishes a definite point of origin with all the affection con-

* Read at the annual meeting of the Medical Society of the State of New York, at Rochester, April 29, 1913.

fined to a circumscribed area accessible to surgical relief.

Three hundred sixty-five gall bladders from the Mayo Clinic analyzed by MacCarthy indicate that the pathology in the gall bladder to use his own words, reduce itself not to definite pathologic lesions but to stages of a pathologic process which consist of an infection of the mucosa of the gall bladder, the common or cystic ducts due either to mechanical or inflammatory agencies. He found that the cases could be classified into eight divisions which varied directly with the nature and degree of obstruction. That to a mild disturbance there reacted only a congestion of the mucosa with slight infiltration. The more severe and protracted cases presented the more advanced and more extensive changes. In those in which malignancy was found the question is certainly open as to whether the malignancy were not the recent evolution of an earlier inflammation, owing to the length of time through which symptoms had been observed. Nineteen years was given as the average duration of definite symptoms in these malignant cases.

It seems a fair conclusion then that inflammatory affections follow the same course in the biliary passages as in other regions more accessible to examination and progress from the simple catarrhal inflammation through all the grades even to malignancy.

So much then for the tissues originally affected, our findings at operation certainly indicate that in a very large percentage of all cases and in most cases of long standing nothing in the vicinity of the organ is free from its menace. In its early manifestation, through its common nerve supply, there are various reflex functional disturbances of the stomach secretion, of the pylorus in its regulating capacity, of the duodenum and of the pancreas; and, indeed, the reflex character of many indigestions, dyspepsias and gastralgias is so well recognized by those of extensive surgical experience that these conditions are now classed as symptoms only to be considered for their value in arriving at a diagnosis. We can each offer ample evidence that the same destructive changes take place in the tissues in which stones may lodge as would be effected by foreign bodies in any similar place, ulceration and perforation either into the peritoneal cavity or into the stomach, or into any portion of the bowel to which it may have become adherent. It is certain too that in addition to the suffering and debilitating effect of the acute attack we must consider the physical or mechanical effect which adhesions produce upon the function and sensitiveness of the viscera to which the gall bladder may adhere.

The mucous membrane of the gall bladder and its passages is, of course, continuous and of the same nature, and it is impossible to consider a cholangeitis as other than an extension of an inflammation at first restricted to a much lesser area. We can almost judge clinically of the time required from the first evidences of gall bladder pain for the extension of the inflammation through the cystic duct to the common duct by the jaundice which supervenes immediately upon the occlusion of the lumen of the common duct by its swollen mucosa. In the advance and recession of the inflammatory changes peculiar to this affection there occur the same progressive impairment of the mucosa and underlying tissues as obtain with any inflammation. The gall bladder, infilterated and thickened by long standing disease, loses much of its own elastic character and hence much of its usefulness—the ducts thicken and are more like pipe stems than the compressible distensible tubes of the normal person. That this condition of the gall bladder is in itself a menace is borne out by the fact that one observer was able to report the rupture of twenty-five gall bladders due to external violence.

These ruptured gall bladders presented the evidence of long standing inflammatory changes and constitute in themselves the best argument for early interference for the prevention of degeneration of the cyst walls.

The bladder and its passages are liable to stenosis of all degrees both from inflammatory thickening and as the result of adhesions at any portion of the biliary tract.

There is still another method of direct harm from gross changes in the passages. The point of entrance of the pancreatic duct into the common duct is not constant and may lie far enough above the ampulla of Vater to allow obstruction of the common duct below its entrance. In such a condition bile or bile mixed with mucus may be forced into the pancreas. Bile alone will set up an acute pancreatitis. Bile and mucus a disturbance of function.

It is rarely reported that an acute surgical disease of the pancreas is treated without the evidence of disease of the bile passages. Even in subacute cases and in the intervals between attacks, glycosuria is a common finding.

Although the gall bladder from its structure resists the passage of infection directly through its walls by reason of its scanty lymphatic supply, having no glands and but few lymph channels, the ducts are well supplied with lymphatics, and septic conditions may easily arise from protracted cholangeitis. This must seem that nature has almost anticipated the necessity of protecting the economy against the infected and even empyæmic gall bladder by arranging its walls to resist the spread of its contaminated contents so that even the most dilatory could arrange to afford relief.

Serious circulatory disturbance have been observed, notably endocarditis. It is worthy of mention that the onset has usually been dated from an attack of colic, and that, while the crippled heart has not been restored, further damage has been avoided by successful operation. Ser-

ious mental disturbances have been known to accompany this lesion, and to recover following operative relief.

Some of those most competent to operate admit a mortality of 25 per cent. when forced to operate during complete obstruction and claim a loss of one-half of one per cent. in the cases operated at the time of election, stones confined to gall bladder and the ducts free.

E. M. Stanton in a careful study of 350 cases finds complete cures to result in 80 per cent. of all cases, with the majority of the remainder expressing themselves as convinced that the relief experienced justified the operation.

With the complicated pathology of this condition in mind, it must seem reasonable to suppose that a great number of deaths annually take place which are attributed to other causes but are primarily due to some effect of biliary infection. Autopsy statistic indicate that between five and eight per cent. of all who reach middle age are affected and, if we accept the statement that "benign stones are a myth," we must accord to the gall stone a very important place in the class of fatal maladies.

Convinced of the formidable character of these affections and of the fact that every complication is a development from an earlier condition which was more simple and therefore more amenable to treatment, let us become a part of that movement in our profession which is aiming to bring early operative relief to this large class of cases where delay is folly and procrastination is fatal.

Discussion.

Dr. Frederick W. Zimmer, Rochester. You will all agree with me that Dr. O'Neill's paper on the gall-bladder and bile-ducts is timely, and gives us much food for thought.

I fully agree with him on all points that he has mentioned, especially the earlier manifestation of trouble in the gall-bladder.

If we diagnose these conditions early it means very much to the patient, if he or she will consent to early operation for their cure.

Early operation means, as far as operations go, shorter incisions, few or no adhesions, no chronic pancreatitis, and above all, no cancer of the gall-bladder or liver.

In regard to this latter disease developing, W. J. Mayo states, that "the danger of carcinoma alone is five times as great as the mortality following operations for simple gall-stone diseases." Carcinomatus disease of the gall-bladder is three times as common in women, which is about the relative frequency of gall stones in the sexes. Gall stones are found in nearly all of their (Mayo) cases of Carcinoma of the gall-bladder, although, as a rule, there had been no recent symptoms. However, a good early history of gall stones was usually obtainable, showing the stones could have been removed early and carcinoma prevented.

One principal reason why I wished to discuss Dr. O'Neill's paper, is to call attention to a grid-iron like incision over the gall-bladder region that I have made for several years.

In practically every incision made to reach the gall-bladder, one or more muscles are cut at right angle, and when it happens to be the transversallis muscle that has thus been cut, I am sure you will all agree with me that it is very difficult, if not impossible, to bring the ends of the muscle and its very intimately adherent peritoneal covering together. The result is, there is a raw surface of muscle uncovered by peritoneum on the abdominal wall, where adhesions of the stomach or intestines will take place and be a constant source of distress and pain to the patient. Then, too, there is danger of hernia.

The operation I make to get at the gall-bladder is to make an incision through the skin and fascia covering the upper part of the right rectus muscle at about one-third of its distance from the outer edge, the muscle fibres are separated with the handle of the scalpel until the posterior sheath of the rectus is reached, now the separated portions of the muscle are held apart with retractors, and the posterior sheath of the rectus divided in a transverse direction, somewhat above the middle of the sheath. Now, usually below this posterior sheath of the rectus you will find the fleshy or fleshy tendenous fibres of the transversallis muscle, that reach to the median line—the fibres of the transversallis muscles are divided in a line with the transverse incision in the posterior sheath of the rectus.

If the handle of the scalpel is carefully used to separate the fibres of the rectus, the motor nerves need usually not be sacrificed, leading to the inner two-thirds of the rectus muscle—the nerve will often span the separation.

By use of deep retractors the gall-bladder is easily exposed, after separating adhesions, and its fundus, if large enough, brought well up, that it may be emptied of its contents. If need be, a stab puncture through the skin for the drainage tube from the gall-bladder may be made.

The separated transversallis fibres with its peritoneum come very easily together when sutured with catgut—a few catgut stitches are best placed in the separated rectus muscle fibres. The external fascia of the rectus is, I think, best reunited with a continuous, fine, chromic catgut, and the skin with silkworm and silk.

Through the incision described, I have removed an enlarged, diseased gall-bladder. The opening too, admits of inspecting the duodenum, the right half of the stomach, etc. I have, on several occasions, been able to pass my whole hand though this opening in order to determine what other trouble might exist in the abdomen.

TWO CASES OF ABSCESS OF THE LIVER FOLLOWING GALL-BLADDER DISEASE.*

By FREDERICK W. SEARS, M.D.,
SYRACUSE, N. Y.

IT is not my purpose in this short paper to discuss the usual operations for abscess of the liver, but to briefly report two cases which have come under my care and to bring to your attention a method of operating which, so far as I can learn, has not been previously done. I wish to be understood as not offering this method as a substitute for the generally recognized operations in the ordinary cases of abscess of the liver.

The cases which I shall report represent a class of cases of severe infection, in which the patient's condition is such that we have grave doubts as to his ability to withstand the shock of even a moderately severe operation, and in which any extension of infection will surely prove fatal. In these cases it becomes imperative that we shall quickly reach the abscess with the least possible damage to the surrounding structures.

In this class of cases both the transpleural and the intraperitoneal route require considerable time and exposes important tissue to the possible risk of infection. The method which I shall discuss aims to reach the abscess without opening either the pleural or the free peritoneal cavity. I believe I can best describe this operation in the report of the cases.

CASE I.—Dr. K., aged 34, married and in general practice, was called to see him by Dr. C. F. Chadbourne, on Sunday, July 17, 1898, being requested to come as quickly as possible and be prepared to operate. On arriving, I obtained the following history.

The patient had been well until July 4th, when he had a severe attack of hepatic colic. This had been relieved by morphine, hypodermatically, and he had resumed his practice on the following day, although there was considerable soreness over the gall-bladder region. This persisted with varying degrees of intensity until July 11th, when he had a chill, followed by considerable fever, and Dr. Chadbourne was called, who immediately sent him to bed. He continued to have chills and fever with attacks of vomiting and pain in his right side, and on Friday, July 15th, a surgeon was called to see him, but owing to the vagueness of the symptoms, an operation was not advised at that time. On Sunday morning July 17th, he had a severe chill, followed by rapid pulse, high temperature and vomiting and a condition bordering on collapse. Examination revealed extreme tenderness over liver area and especially marked at costal border in axillary line.

Temperature 103, p. 120, and very weak. His appearance was that of one of extreme septic infection. Diagnosis of abscess of liver and immediate operation advised. We did not deem it safe to remove him to a hospital, the nearest one being some two miles distant, and under light anæsthesia I proceeded to operate at his house after a hasty preparation. The operation was done in the following manner.

A linear incision was made in the right axillary line extending from about one-half inch above to about three inches below the costal margin, extending through skin, subcutaneous tissue and fascia. The muscles below the ribs were now separated by blunt dissection down *to* the peritoneum. My right index finger was now inserted under the ribs and carried upward between the peritoneum and the muscular portion of the diaphragm, being extremely careful not to tear or perforate the peritoneum, until a point opposite the ninth rib was reached. At this point there seemed to be an adhesion between the liver and the diaphragm, and the tissues were very friable. By exerting a little pressure inward with the tip of my finger I was able to enter the abscess cavity, as was demonstrated by a profuse gush of pus. The opening was enlarged with my finger sufficient for good drainage, a gauze drain inserted, and the dressing applied. The entire operation consumed but a few minutes and the patient rallied well from anæsthetic. The following morning he seemed much better. He had no more chills or vomiting. His temperature soon came to normal. Drainage was profuse for several days; gauze was removed on the fifth day. After this time the amount of drainage gradually lessened. I last visited him on August 3d, fourteen days after operation, when drainage had ceased and the wound required no further attention.

It is now nearly fifteen years since the operation and Dr. K. informed me last Saturday that he has not had a sick day since that time; weighs over 200 pounds and considers himself to be in perfect health.

CASE II.—On November 2, 1911, was asked by Dr. Adelaide Dutcher to see Mrs. B., aged 51, a widow. I obtained the following history from Dr. Dutcher's notes:

"Was called to see Mrs. B. on October 22, 1911, as she was suffering from intense pain over hepatic region, which had been more or less continuous for the past three weeks. Personal history: Has always been a strong, healthy woman, no record of typhoid fever, no illness except child birth. Had not consulted a physician for twenty years, until six months ago, when she had an attack of la grippe. Passed menaupause one year ago. For the past fifteen years has had pain in right side, accompanied with vomiting, but has never sought medical aid. Was for one week in St. Joseph's Hospital preparatory to exploratory operation but became frightened and left hospital without permission. Since returning home the pains have been intense with persistent vomiting and constipation.

* Read at the annual meeting of the Medical Society of the State of New York, at Rochester, April 29, 1913.

Present condition: Abdomen distended and very tender everywhere, but especially over region of gall-bladder. Vaginal examination reveals fibroid uterus about size of child's head. Diagnosed gall-stone colic, and morphine given hypodermatically."

October 24.—Patient has been more comfortable, with less vomiting and less constipation.

October 29.—Has had sever pains for past 24 hours. Had chill last night, followed by vomiting which has persisted when liquids were taken. Temperature 102.5, pulse 100. Urine shows presence of bile and trace of albumen, few granular or hyaline casts, no sugar, large excess of indican.

October 31.—Pain has been controlled by morphine and patient has been able to retain liquids.

November 1.—Patient had another shaking chill this afternoon, attended with violent pain and vomiting. Temperature 103, leucocytes 30,000.

November 2.—Patient has had two chills since last night, vomiting persists. Temperature 103, pulse 120. Patient seems in collapse. Dr. Sears called.

My examination reveals extreme tenderness over liver area, especially marked at costal margin, not very marked over gall-bladder region. Extremely weak. Pulse 124 and thready. Temperature 103. Diagnosed abscess of liver. She was immediately transferred to Women's and Children's Hospital and operated upon as soon as preparations could be made. Operation similar to Case I except that no adhesions were discovered between liver and diaphragm. At a point opposite ninth rib liver seemed very tense and believed could detect fluctuation. Using finger as guide, aspirating needle was inserted at this point and pus withdrawn, leaving needle in position, as guide, opening was enlarged when a large quantity of pus escaped. On exploration with finger many gall stones were felt, more than fifty of which were removed with the scoop. Owing to the precarious condition of patient further exploration was not made. A large drainage tube surrounded with gauze was inserted and dressings applied. She rallied well under rectal stimulation. Had no more vomiting or chills; temperature for next three days varied from 99 to 102 degrees. Pulse from 100 to 118. Temperature and pulse remained practically normal from this time on. Drainage was quite profuse. Gauze removed on third day, tube left in. She left the hospital on the fourteenth day after operation in very good condition except that there was still considerable discharge of pus and bile. Dr. Dutcher informed me that the drainage continued with the passage occasionally of a small gall stone through the tube for about two weeks, when the tube was removed, drainage having practically ceased. When seen a few days ago, she stated that there had been no discharge except that at intervals of two or three weeks, she had for some time passed a small gall stone from side with but little discomfort, except on one occasion about six months ago when she passed quite a large stone which had caused considerable pain and was followed by a profuse discharge of bile. She is now in splendid physical condition except that she still has the fibroid tumor, which has not greatly increased in size. Her constipation has been entirely relieved.

I first performed this operation as a temporary procedure, hoping to tide my patient over a very critical condition, but the result so far exceeded my expectations that I felt justified in presenting it for your discussion.

NASAL OBSTRUCTION AS A PREDISPOSING FACTOR IN THE ETIOLOGY OF PULMONARY TUBERCULOSIS.*

By JAMES E. McCAMBRIDGE, M.D.,

POUGHKEEPSIE, N. Y.

WHEN we consider the vast progress that the study of tuberculosis has made in the past decade, and the number of institutions that have sprung up in our midst to take proper care of these patients and limit the spread of this contagion, we feel that we are making rapid progress in our fight against the greatest enemy of our race. However, in our enthusiasm, we have overlooked, I am convinced, or at least partially neglected to care for, a condition of some of our patients which is, in my opinion, of importance in completing the cure.

No doubt you will think it presumptuous on my part when I state, that I am fully convinced that at least twenty-five per cent. of the cases of pulmonary tuberculosis are due indirectly to some derangement in the nasal breathing, and their recovery is either hindered or retarded unless the nasal condition is remedied. The important results of an obstructed nasal passage on the lungs was first brought to my notice some years ago while house surgeon at the Manhattan Eye and Ear Hospital. I was much impressed by the fact that a large number of patients who came to our clinics with various forms of nasal trouble, complained of having pains in the lungs, generally in the apex of the side, corresponding to the side of the nose affected. On examining the lungs of a number of these cases, I invariably found, especially the cases of long standing, a clavicular dullness associated with a lack of apical expansion.

The results of nasal operations on these cases I was unable to follow up, as we lost sight of them after leaving the hospital. However, in my private practice, and in our work at the Bowne Memorial Hospital in Poughkeepsie, I have been able to follow these cases more closely, and have secured results that have shown us

* Read at the annual meeting of the Medical Society of the State of New York, at Rochester, May 1, 1913.

very decidedly the important relations existing between the nose and the lungs.

The idea of the older writers, that the current of air from the right nostril passed down the right bronchus into the right lung was scoffed at. This, however, I am inclined to believe as we invariably find the corresponding lung affected, and by holding the nostril of the healthy patient and having him inhale we find a slight defect in the lung expansion on that side. This lack of lung expansion, if continued for a long time, necessarily means a lack of oxygen entering the lung and a gradual weakening of the tissues. Now, when we remember that one of the physiological functions of the nose is to purify the inhaled air by means of its ciliary mucous membrane, this function being destroyed permits of the passage of vitiated air into the lung tissues. This condition with a weakened lung tissue forms a most suitable nidus for the lodgement of the tubercle baccillus, and a suitable medium for its development.

This, of course, is ancient history to the most of us, and the reason I bring it before you is, that the average case of pulmonary tuberculosis is turned over to the lung specialist, who devotes his entire time to the regular routine treatment of that patient and a condition which I think an important causal factor is neglected.

My paper consists merely of a series of cases which I have been able to follow very closely and have noted results. The first class are those with slight obstructions, partial mouth breathers; second, those with slight obstructions, and on exertion breathe through the mouth; third, those who are entirely mouth breathers.

Class 1.—Patient, Miss G———, 27 years old, no occupation; sluggish habits; consulted me on the advice of her physician for what he termed "nasal catarrh." Her physician stated that he was afraid she was going to develop tuberculosis. The patient had a slight cough, considerable expectoration, pains in the lungs, a loss of appetite, shortness of breath on exertion; family history good. On examination of the patient's nose, I found the left nares almost entirely obstructed posteriarly by a polypoid inferior turbinate which had an eroded surface about its center. There was considerable thick tenacious mucous in the nose and nasopharynx. I concluded that part of her throat and bronchial trouble was due to the existing nose condition and advised removal of at least part of the inferior turbinate. Patient positively refused operation, and, after a few weeks of unsuccessful attempts to alleviate her condition by local astringents and changes in her mode of living, I lost sight of her, until about six months after, when she was admitted to the Bowne Memorial Hospital with a pronounced lesion of the left apex, tubercle bacilli in the sputum and marked emaciation. We then started to prove the feasibility of our theory—that the obstructed nares had aided very materially in producing her condition.

The patient at that time was perfectly willing to have us do anything to help her. I examined her nose and found practically the same condition as before, only more marked, and with considerable more hypertrophy of the right inferior turbinate. Owing to the patient's weakened condition, however, we thought it advisable to wait a while and give her a chance to recuperate. She improved somewhat after a few months in the hospital, enough to permit us to operate. I removed the posterior tip of the left inferior turbinate with a snare and made a deep horizontal incision through the remaining portion. With the usual antiseptic treatment, the wound healed up in about three weeks. In the meantime I had the house physician make a daily application of 20 grains silver nitrate to the right inferior turbinate, which was very effective in shrinking it, so much so that about one month after the operation the patient was able to breathe comfortably through the nose. The change in this girl was remarkable, especially in her lung condition, which had remained practically the same during her four months in the hospital prior to the operation. Her weight increased, which had been only three pounds during the first four months, was equalled in the fifth month. This patient at the time of writing, ten months after her entrance, is a picture of health, and has gained twenty-six pounds, and although her sputum is negative, we have decided to keep her in the hospital for observation. This is one of the class of cases which I think, gentlemen, can, if taken in time, be saved from the white plague.

Class 2.—The second class of cases simulate pulmonary tuberculosis very much. They have the night sweat; some clavicular dullness and profuse expectoration, although they may be negative for T. B. This class of cases is more common in the factory district or among dust workers, and is a familiar case at a T. B. clinic.

Case.—John B., moulder, age 32, married. Came to me with a history of having had two physicians examine and tell him that he "should go to the mountains, as he had consumption." He complained of pains in the chest, profuse expectoration, slightly blood-stained, and night sweats. He had always been healthy up to four years ago, when he had his nose broken playing baseball. Since then his condition had become such as to make him suspicious of lung trouble. I had Dr. Davis examine the patient's lung; found some apical dullness on the right side; lack of expansion; chest flat; no T. B. in sputum. On the nasal examination, I found a marked deviation of the nasal septum, obliterating the left side and knuckled to partially obstruct the right side; patient breathed almost entirely through the mouth. I explained to this patient that he did not have tuberculosis, but had a condition close to it and advised operative interference. The patient readily consented, and under local

anaesthesia I did a sub-mucous resection of the septum of the left side and removed an exostosis on the right side, giving the patient fairly good breathing space.

With the usual antiseptic treatment the patient's nose healed up in about two weeks. I advised him to go to the country and suggested deep breathing exercises. At the expiration of a month, the patient returned to me and expressed himself as feeling like a new man.

His general condition had gradually improved, respirations became easier; the expectoration was lessened and he began to gain in weight; the lung condition cleared up, and at the present time the patient is working at his trade (moulder) and has not lost a day since.

This case, gentlemen, is a typical one of the class on which the theory of my paper is based. Although we could not positively state that this patient had tuberculosis, I am certain that he was on the road to it and unless the nasal condition was relieved we soon would have found the tubercle bacilli, and his lungs were a most fertile field for development.

CLASS 3.—This class consists of a series of cases who are hereditarily predisposed to tuberculosis and suffer from nasal obstruction. I refer to children of tubercular parentage suffering from adenoids and enlarged tonsils. In the preventorium of the Bowne Memorial Hospital last year we had fourteen children, ranging from six to twelve years old, all of whom gave a positive von Pirquet reaction, which I think is most reliable up to that age. Ten of these fourteen children had adenoids, and I have selected these as types of this class. I could proceed to discuss these cases separately, but that would be unnecessary, it being sufficient to state that at the present time ten of these fourteen children have been discharged as cured, and three others are about ready to go. These cases have given us most gratifying results and are a class which demand early operative interference. In connection with these cases, we divert a little from routine operations for adenoids and tonsils.

It had always been my custom, and no doubt that of many other rhinologists here, to remove the tonsils at the same sitting, especially if they were at all enlarged. This I did not do for two reasons: First, as the tonsils act as safeguards in protecting the larynx and bronchial tubes from bacterial invasion, their removal would take away the main protection that a mouth-breather has. Second, that 75 per cent. of the enlarged tonsils associated with adenoids in children are more of a hypertrophy than a hyperplasia due to irritation of excessive mouth-breathing, and in a large percentage of cases will shrink of their own accord after the adenoids are removed, or by the aid of a mild stringent. If they do not do so after a reasonable length of time, enucleation will be the proper treatment.

No doubt many of you gentlemen here today have such cases as I have described with similar results in everyday practice. I have a two-fold reason for bringing this subject before this society. First, because the lung specialist pays very little attention to the upper air passages in his examination of a tubercular patient and in that way modern methods of sanitarium treatment of these patients is lax, because a patient with obstructed nasal breathing does not receive the amount of oxygen in his lungs that he would if his nasal passages were clear, and if he does it is by forced inspiration, which throws more work on the weakened lung tissues, which need all the rest possible, and thus work at a considerable disadvantage, and as the majority of bacteriologists believe that the secretion from the normal nares has a pronounced phagocytic action on certain bacteria, in pathological condition this function is lost. When we consider the rarity of tuberculosis of the nares as compared with the frequency of tuberculosis of the tonsils and larynx, we begin to realize there is something to it. Out of 72 cases of tuberculosis at the Bowne Memorial Hospital, 59 had some pathological condition of the nose or nasal pharynx.

My second reason for bringing this subject up is, in most of our cities we have a system of school inspection of the nose and throat of children which has done noble work in educating the public as to the harm resulting from constant mouth breathing.

Now, gentlemen, I think if we are going to limit the spread of pulmonary tuberculosis in this country, we must extend this inspection to the factory, the workshop, and the tenements, for it is from these places that we draw the bulk of our tubercular patients, simply because they are not taught the harmfulness of mouth breathing. I think it is the duty of rhinologists to aid our brother physicians who have taken up this work, and by eliminating the mouth-breathers, we will, in my opinion, eradicate one of the most prominent predisposing causes of pulmonary tuberculosis.

Discussion.

DR. GEORGE H. ROCKWELL, of Syracuse, said that the relationship between nasal obstruction and tuberculosis is axiomatic. In tracing the connection there has been a missing link, as normal lung tissue is probably immune from the ordinary quantity of tuberculosis with which it comes in contact.

The lung changes are first of all congestion which prepares the soil for the infection. When increased demands are made upon the respiratory muscles there is a tendency toward round shoulders and flat chest. This condition puts an unnatural strain upon the vertebral and costal articulations and their ligaments, with eventual stretching of these ligaments, so that increased motion is possible. This increased motion is frequently great enough to permit the articulating surfaces to become locked in abnormal positions and through the increased tension on muscles and ligaments through which the nerves, espe-

cially the branches to the sympathetic, pass. Either stimulation or inhibition of impulses takes place.

Through the branches of superior and inferior cervical ganglions supplying the root of the lung, vaso-dilation takes place, giving rise to that condition which is the first sign demonstrated by the X-ray—thickening at the root of the lung. In addition, this thickening at the root of the lung the articular changes mentioned show up beautifully in nearly every X-ray plate in this class of cases, though the bony condition, is frequently overlooked.

In addition to correcting nasal obstructions, the bony conditions need attention in the majority of cases and prove extremely beneficial.

Hay fever, asthma, goitre and "neurotic" coughs frequently are the result of these changes in the cervical and upper dorsal regions, and are relieved by correcting the deformities, and it would seem reasonable to greatly benefit patients in the pre-tubercular periods, or in the early tubercular stage, by such corrections.

Attention has been called by Dr. Yankauer to the large middle turbinate often seen on the side of the septal concavity. I believe these should always receive our attention, for not only will they be in contact with the straightened septum after the submucous resection, but they are just as apt to enlarge externally as toward the median line, closing up the middle meatus, making pressure upon and occluding the several sinus ostia. Such turbinates are very often cystic, consisting of a large shell closely hugging the lateral wall.

Dr. Sidney Yankauer, New York City: The impression conveyed by the writer is that the first thing to be attacked in the nose is the septum, whereas, at any rate, the slight cases, I should rather be inclined to believe that it should be the last, *i. e.*, after the condition of the middle turbinate and ethmoid region had been carefully considered.

The concurrence of enlarged middle turbinate on the hollow side and with deviation of the septum, is a common one, and I have found that to completely relieve the symptoms, the middle turbinate should be removed before or at the same time as the resection.

Dr. E. E. Hinman, Albany: We see a good many cases in which there are symptoms indicating pressure between the middle turbinate and the septum and upon examination the turbinate is seen to be in contact with the septum. If adrenalin or cocaine will so shrink the mucosa of the middle turbinate as to entirely clear the septum, such a case will generally do very well by cauterization of the lower border of the middle turbinate. The resulting scar will contract and give a permanent relief.

Dr. Gerhard H. Cocks, New York City, said he had enjoyed listening to Dr. McCaw's paper and had no fault to find with his conclusion. Yet he gained the impression that the doctor favored operating on practically all deflections of the nasal septum, however slight they are. Dr. Cocks said he thought it was a great mistake to operate upon slight septal deflections, such as are present in almost all normal people.

Where patients, especially women, suffer from slight nasal obstruction, running from the nose and sneezing, attention to the general health and diet accomplishes more than operation on the septal deformity.

Dr. B. A. Richards, Rochester: The point of pressure remaining after resection from overgrown middle turbinate is well taken. Do not find it necessary as Dr. Yankauer does to remove every middle turbinate. They are usually cystic in character and are better attacked by incision and crushing together, kept over from septum by packing until fixed, thus conserving mucous membrane.

EXAMINATION OF THE EXPOSED AS A FACTOR IN THE PREVENTION AND RELIEF OF TUBERCULOSIS.*

By JOHN H. PRYOR, M.D.,
BUFFALO, N. Y.

THE recent increased provision for the care of incipient cases of tuberculosis has emphasized much more distinctly the paramount importance of an early diagnosis, and revealed with striking clearness the different problems associated with the incipient and advanced class. In one group relief, control and the saving of life is highly successful, and failure to recognize early stages of disease is becoming more and more a cause for blame and censure.

Information that a patient is rejected for admission to a sanitarium because the disease is too far advanced and was detected too late is arousing more searching inquiry and angry complaint, and criticism is more directly placed where it belongs. By estimating the capacity of institutions for the care of incipient tuberculosis and the percentage of truly incipient cases admitted it will be found as a rule in most localities that about one to one and one-half per cent., or about one and one-half in a hundred of those afflicted with pulmonary tuberculosis reached the right place for treatment, control and prevention at the right time. About 99 per cent. seek a physician's advice too late, or diagnosis is incorrect or delayed too long, or treatment at home is tried for too long a period. The chance for efficient, promising relief and prevention has been largely lost, and then the problems of control and protection of others with all the difficulties and opportunity for failure arrive in due course.

There is no room for argument when we urge insistently the dire need of hospitals for advanced cases, but there is, unfortunately, plenty of justification for the questions which may become more clamorous—why are there so many

* Read at the annual meeting of the Medical Society of the State of New York, at Rochester, May 1, 1913.

advanced victims? Why are so many applicants for admission to sanitariums refused? The answer that they did not consult a physician soon enough after the invasion of the disease will not suffice, because we know that a large percentage did. If we look for causes of failure they can be found in the medical colleges and the text books. The newer methods of diagnosis are not properly taught, and examination of the exposed is almost entirely unmentioned. I appeal once more for the dissemination of knowledge which will lead to the introduction of rather new methods of physical diagnosis and enlightened management of a germ disease which is communicable under certain conditions.

In referring to the growing importance of examining the exposed something more than infection by close association is intended. The same economic and hygienic conditions which predispose to produce one victim in a home may be and usually are dangerous contributing factors in other members of a group. These vicious agencies may be and usually are increased and aggravated by the illness of a wage earner and the results of overwork, impure air, insufficient food, grief, worry and distress.

There is much that we do not understand concerning the conditions favorable to tuberculous invasion and its character, development and course in a given individual. We can rarely state decisively how the infection occurred or record even approximately the time of inception. The fact that we assume to do this frequently in a dogmatic manner is not under discussion to-day. We do know, however, that definite contributing causes are often associated; that one case in a household or workshop is occasionally accompanied or followed by another; that close contact, particularly if long continued under similar conditions, is apt to result in the infection or re-infection of those exposed, and that this may and does occur in spite of warnings, instruction and diligent efforts to check the spread of the disease.

The question at issue is, what is our plain duty to the others who have been exposed to a communicable disease in a favorable environment for its development? They should all be carefully examined for evidence of disease and those physical manifestations which mark one as a promising victim for its ravages. This method of procedure seems so necessary and intelligent that one wonders why it is not generally adopted in private practice and particularly among the poorer classes, where the malady reaps its harvest. If this procedure is not thoroughly employed at a tuberculosis dispensary its work and results are open to merited criticism to-day.

At the Buffalo Tuberculosis Dispensary, where the examination of the exposed was begun in 1907, and where the practice has gradually become more thorough, the following results are reported in 248 families where there was one living case:

Pulmonary tuberculosis found in one or more members—35 per cent.

Glandular tuberculosis—8 per cent.

Tuberculosis in some form—43 per cent.

In 87 families 100 cases of pulmonary tuberculosis were discovered.

In 19 additional families 48 persons had tubercular glands—that is, they were probably tubercular.

In 113 families where other members were examined and in which a death from tuberculosis had occurred, shows, other cases reported in 40 per cent. of the members.

In some families 3 or 4 other cases were discovered.

Only those families are included in which examinations were made of most of all members. The diagnosis of pulmonary tuberculosis is based upon physical findings and existed as a clinical entity. No conclusions were based upon tuberculin tests in any form. This work has resulted in sending a remarkably high percentage of ncipient cases to sanatoriums, as a large proportion of those found tuberculous were in an early stage. In this particular line of endeavor the service and helpfulness of the visiting nurse is invaluable.

The advanced case should lead to the unsuspected early one and remedial effort applied at the effective time. That the work is difficult at the dispensary and decidedly more so in private practice is fully appreciated. As a rule it means considerable labor without pay in money, but a duty has not been discharged until an earnest attempt has been made. Many of the obstacles would disappear and disinclination overcome if the practice became established as a necessary and wise custom on the part of the medical profession.

The belief that tuberculosis is rarely found in the homes of the moderately well-to-do, and that it is time enough to examine when symptoms appear is fallacious. It is much more common than is generally supposed if association has been intimate, and there is no excuse for not insisting upon a search for the signs of disease in this class.

During the last year I repeatedly urged the wife of an advanced consumptive to allow me to examine her chest and that of her two daughters. She refused until after the death of her husband and then finally consented. The wife had moderately advanced pulmonary tuberculosis and both daughters revealed signs of incipient disease. In all probability none of them would have sought my advice until months later, or when symptoms were pronounced.

One of the chief blunders hard to combat is the false idea, often encouraged by physicians, that examination can be delayed until symptoms appear. In the first place a truly incipient case is often symptom-free, and a large percentage of them have not observed any symptoms whatever.

They are nearly always very slight if a really early diagnosis is made. Many times the evidence of disease may be recognized weeks or months before any symptoms appear, and the progress of the lesion can be watched for a considerable time before its effects attract attention. The chief exception is hæmoptysis, but that is uncommon. It occurred in 8 per cent. of more than 2,000 incipient cases which came under my observation in recent years.

The examination of those exposed is one thing, and the examination of those who seek advice because of symptoms is another. If one desires to learn the art of detecting the presence of a tuberculous implantation at the earliest possible time he must seek it by finding the patient, not waiting for the request of one who suspects its presence because of symptoms much more characteristic of later manifestations. If the consent of members of the family cannot be obtained the physician should at least instruct them or the parents concerning the symptoms which may denote danger and necessitate an examination. The measure of success attained in finding slight lesions among the exposed will, of course, depend upon the methods employed, thoroughness of the search and repeated examination. There may be no signs present for months and then they may suddenly be plain. The members of a household or family should be examined while the more or less advanced case is living, and after his or her death. I have many times failed to find evidence of disease in others during the illness of a consumptive and discovered several victims in the family after his or her death. As a rule the second victim is the wife, husband or daughter, and the one who performed the duty of nurse is the one most often afflicted.

At the dispensary if the work is thorough other members of the family should be examined once every month or six weeks for a period of at least six months, and during this interval efforts should be made to improve or change the environment if conducive to the development and rapid progress of tuberculous disease. At present the physicians's work in the dispensary, hospital and home is very seldom fully performed in many aspects. When a patient, at a tuberculosis dispensary especially, is not followed to his home and medical and sociological science applied there, the whole system and purpose of relief is partial and faulty. Incipient cases must be searched for and found. If one will learn to detect them he must be led to them by other sufferers who have usually been neglected by somebody's blunder. He must appreciate the clinical fact that true incipiency and the advanced type, so long carefully described, are in many ways like two different diseases. In time the advanced case will exist largely as an accusation, and an explanation will be demanded. It will be made clear that one way to diminish a death rate will be to save a life if possible.

By the adoption of auscultation with cough and the acquisition of proficiency a means of diagnosis has been added of very great usefulness. This method was described by Laennec, but the art was apparently lost until renewed attention was called to it by Turban. Even the recent text books make only slight or no mention of this most essential procedure. By its employment the recognition of a small incipient implantation and the limits of the extent of disease is made possible when otherwise attempts would be difficult or futile. Application of this practice so rare except among experts during recent years becomes an art and the problem of early diagnosis and the examination of the exposed acquires an entirely new phase. Areas reveal secrets which previously would never have been disclosed, and this one test when properly and thoroughly tried seems to have more value than all other methods of physical diagnosis combined.

During the last three years the necessity for more careful examination of the borders of the lungs along the spine and beneath the sternum has become apparent. These two regions are

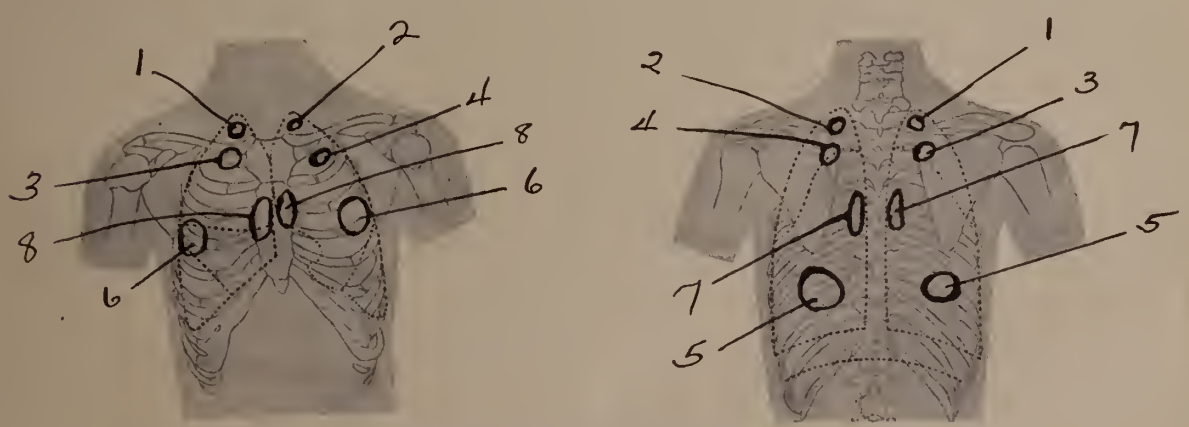


Chart showing regional anatomy of pulmonary lobes and their dividing lines with comparative frequency of location of invasion, as revealed by physical signs in incipient tuberculosis.

apt to be entirely overlooked. Auscultation of the sternum is particularly uncommon in practice. Yet the signs of a lesion occasionally is manifest there and absent elsewhere. This is especially true of children and young people. There may be evidence of disease of the bronchial glands but the free borders of the lungs in the mediastinum should be searched also. In numerous instances when symptoms justified strong suspicion and all other regions betrayed no signs, the focus was found beneath or at the edges of the sternum or close to the spine after repeated forcible inspirations and cough. In two instances the lesion was located at the edge of and under the sternum and had followed sternal blows in a foot-ball game. When children have made an apparent recovery the evidence of renewed activity or recurrence is occasionally only elicited along the edges of the spinal column.

I present a chart showing the comparative frequency of the initial location of invasion as revealed by physical signs. It is based upon an examination of 2,000 cases.

Finally the introduction of auscultation with cough makes an early diagnosis of incipient disease far more accurate and easier of accomplishment and removes many excuses for failure to examine the exposed. Progress in the crusade against the white plague still depends, to a very large extent, upon the discovery and relief of those suffering from the beginning stages of disease, and the acceptance of the fact that examination of those within suspected limits is a vital necessity seems most manifest if success is to be rapidly achieved.

INFANT FEEDING FROM A NEW VIEW POINT.*

By GODFREY R. PISEK, M.D.,

AFTER all the methods of infant feeding that have been proposed and considering the large number of proprietary infant foods offered for sale and widely used, it might appear that there could not be such a thing as infant feeding from a new view point. But if we, as physicians, are to be the leaders in infant feeding we must look at the subject from a new view point.

During the past fifteen to twenty years there has been accumulating a mass of knowledge concerning infant feeding which has not been digested and assimilated by the medical profession as a whole. Too often a new contribution to this subject has been hastily seized upon and made the basis of a so-called system of infant feeding instead of being assigned its relative position in the general scheme of infant feeding.

At one time sterilization of milk to destroy all the bacteria was lauded as the solution for all infant feeding troubles; then modified or humanized milk came along; followed by pasteurization. Later percentage modifications, for which were offered tables by which infant feeding was to become a mathematical science; then milk and gruel mixtures, whey and cream mixtures, malt soup, precipitated casein and maltose mixtures, had their advocates. The use of clean milk which contained so few bacteria that it need not be heated was put on the market and the other extreme, the addition of millions of bacteria to each teaspoonful of milk for the infant's use, was advocated to make it suitable for digestion.

Babies have survived all these fashions, and in spite of them the death rate has declined.

From the standpoint of the practicing physician there was not much cause for complaint when there was but one fashion displayed at a time; but now, when all fashions are in style at the same time the situation has become complicated.

What is one to say or to do when a mother, a nurse, or another physician objects to the pasteurization of the baby's milk and quotes some well-known pediatrician as denouncing it. Recently the writer received from a dealer an inquiry concerning the advisability of pasteurizing the food for infants in the tenement districts of another city, and advised it. The inquiry had arisen because a local doctor had opposed the pasteurization and fortified himself behind the teachings of a pediatrician who lays all the nutritional ills of infancy to pasteurized milk, and who had apparently convinced his followers that pasteurization was a very pernicious practice.

Condensed milk and proprietary foods have been roundly denounced by some teachers who have no hesitancy in using them themselves. A case was reported to the writer, of a physician who had the care of an infant whose nutrition was not progressing satisfactorily. The mother wanted to use condensed milk but the physician in charge had been taught that condensed milk did harm to infants and showed the mother a text book on pediatrics in which the great harm done by condensed milk to infants was vividly described. The mother wanted the author of the text book to be consulted, which was done, and he promptly directed the infant to be fed on condensed milk, much to the chagrin of the physician in charge.

With teachers preaching one thing and practicing another, and with one teacher, for instance, urging the importance of sterilizing or pasteurizing milk to destroy bacteria to make it suitable for infants and another proclaiming the importance and advantage to the infant of having hundreds of millions of bacteria added to its milk, and each claiming brilliant results, the laity are bewildered and the path of the general practitioner is made harder.

Every physician who practices among infants has had mothers or nurses watch him critically to see if his feeding agrees with that recommended in some Book for Mothers, written by

* Read at the annual meeting of the Medical Society of the State of New York, at Rochester, April 30, 1913.

more or less well-known pediatricians. If he departs from the plausible rules positively laid down he is suspected of being unskilled. If he explains that the author of the book is advising a method not applicable, or that he is actually wrong in his statements, or that the rules were intended for different conditions he at once creates doubt as to whether physicians really know much about infant feeding after all.

This same condition exists in the medical profession at large. Students going from one clinic to another hear their teachers make contradictory statements, and it is not at all uncommon to hear the general practitioner say, "How is the general practitioner to know what to do in infant feeding when men who are supposed to be authorities flatly contradict each other on what are supposed to be the fundamentals?" All know in what contempt the opinions of medical experts in insanity cases are held by the laity. Pediatricians should see what is coming their way.

A house divided against itself must fall and scientific infant feeding will fall into disrepute unless this division of medical opinion ceases to exist and teachers become more consistent in their statements.

Some queer ideas are abroad as what is scientific feeding. We all know the type of physician who claims to be a scientific feeder because he does what Dr. ——— does! Another attempts to follow an authoritative text book only to find that many methods are given, varying from ancient methods to the latest fad. Which one the author himself uses is not indicated. Some physicians who try to follow such a teacher confess that the more they study his teachings the less they know.

Scientific infant feeding *consists of doing what is right at the time, for the particular infant.* It is impossible to state in a book what shall be done under all conditions, for the conditions are seldom exactly alike in different cases. For example, at one time it may be highly scientific to pasteurize food, and at another time just as scientific to add certain types of bacteria to the food. Here there is no contradiction. Each procedure has its place and in its place is scientific. Out of its place it is unscientific.

Statements which were correct years ago may be incorrect to-day. When people traveled by stage coach it was correct to say it took two days to go from New York to Philadelphia. Now it is correct to say it takes but two hours. What would be thought of anyone who in these days persistently taught that it took two days to go from New York to Philadelphia because he could show histories that were accepted as authoritative in which it was so stated? Such an illustration may seem far fetched, but in infant feeding there are not a few who shut their eyes to accomplished facts and to present conditions and refuse to believe them because they have not found them in *books* written by those they choose to consider authorities, and persist in teaching things which undoubtedly were true at one time but which are not true now.

Infant feeding properly belongs to the physician, but he must qualify for his work, not by blindly following specialists or their methods, but by familiarizing himself with the readily grasped fundamentals of animal nutrition and care which pertain to all infants, and then use his common sense in applying them. We will not, I believe, be overstating the facts when we say that the average student in a good agricultural school, or in a class of domestic science, has a better training in the fundamentals of nutrition than the average practicing physician. May it not be awkward for the physician during the coming years if he finds that the young men and women on the farms are feeding their animals more scientifically than he can feed their babies? Agricultural students are taught the principals upon which depend the production of strong, vigorous animals and they will naturally watch to see if they are applied to their own children. Some of the teaching concerning the principles of infant feeding which are followed by some physicians could be criticized justly by high-school students who have studied agricultural or domestic science.

Complaint is made by the teachers in a well-known school of domestic science training teachers in dietetics, that their graduates find themselves not understood by the physicians whom they are expected to assist. The training of the laity in the science of nutrition is going on rapidly and unless the medical profession appreciates this and stops following fads and fancies, instead of mastering the rudiments of the general science of nutrition, particularly as they apply to infants, the profession must not be surprised to see manufacturers swamping the field with their alluring literature.

The fundamentals of chemistry, physics, bacteriology and surgery are uniformly taught and the graduate of one school does not find his training different from that of another school. In infant feeding it is different. A young graduate from one school may come in contact with another physician, perhaps in the same community, who feeds according to methods that he was taught are absolutely fallacious, and he is astonished to find that he gets good results.

By diverse opinions expressed to patients regarding the former feeding of their baby, and the willingness of the untrained doctor to experiment with food after food, or preparation after preparation with the hope of finding one that will fit, a fertile field is being prepared for proprietary food manufacturers who can and will occupy it with their products unless the physician will make the effort to fit himself for the care of this class of patients.

There is no such thing as new principals of infant feeding. There is, however, a periodic appearance of new methods of infant feeding

which are temporarily in vogue until the stern logic of practice proves them to be founded upon misconceptions of the elemental principals of nutrition.

The history of infant feeding is a narration of the rise and decline of such methods.

We must approach infant feeding from a new standpoint and we will approach it from a new standpoint when we concentrate our teaching on the broad general principles of the science of nutrition, of which infant feeding is only a branch.

Discussion.

DR. L. E. LA FETRA, of New York, said that to pediatrists infant feeding was a most important topic, as it was the only truly specialized study of the pediatrist. As Dr. Pisek has said, there was much confusion as to the exact method to be used in a particular case. In fact infant feeding was easy only on paper. Babies had thrived on every imaginable manner of feeding, but this proved nothing more than that the healthy baby was very resistant. The important cases were those of difficult feeding and these were the cases that repaid careful study. In these difficult cases one must try to select that particular form of feeding adapted to that baby. If the method did not succeed, one should endeavor to find out the cause of failure. Infant feeding offered many problems not yet accounted for by our theories. Take, for instance, twins weighing the same at birth, of the same sex, nursed by the same mother, one might thrive and the other might have severe indigestion. How could one account for this? Even if a baby was not being fed in just the way one might think it should be, if it was doing well with no excess of caloric requirements, the food should not be changed.

The papers of the morning had been exceptionally good. Dr. Rulison's paper was a splendid epitome of the subject of infant feeding. He had spoken, however, of "the caloric method versus the percentage method." This was a mistake, for there was no antagonism between the methods. The caloric method was valuable as a check and the two methods should be combined. The caloric method was valuable in showing what quantities of the different food elements the infant was getting, but it was not a method of feeding. As someone had said, "A lump of coal has sufficient calories but the baby cannot utilize them."

Individual babies differed in their capacities for sugar so that one had to find out which one was suitable in each case.

As to the salts, Dr. LaFetra said he did not think that the theories explain all the cases. According to theory an edematous water-logged baby ought to have no whey salts; yet when undiluted skimmed milk is given the edema disappeared. What about the theory? As to the whole milk feeding, one might take a vomiting baby, put that baby on concentrated food, giving it sufficient calories, and the baby would do well. There has been mentioned a healthy breast fed baby of eight pounds that took twenty-four ounces of milk from the mother in twenty-four hours; that was about three ounces per pound weight. About one-fifth the body weight was a good rule for the amount of liquid. One badly nourished baby had been cited as getting double the quantity of food supposed to be required, but the fact that the baby was badly nourished showed that it needed the excess. Having sufficient calories, sufficient liquid, and a proper balance of the principal food elements, one was on the right road to the correct food.

The statement that proprietary foods had no food value was not true. These preparations have a food value and often could be used with advantage. In the feeding wards at Bellevue Hospital they used a wide diversity of foods; top milk, skimmed milk, whey, Eiweiss milk of two grades, condensed milk, dried milk, and all forms of sugar, and there was a use for each method in individual cases.

A CASE OF ANOREXIA NERVOSA IN AN INFANT.*

By NORRIS G. ORCHARD, M.D.,
ROCHESTER, N. Y.

IN going over the literature upon the various neuroses of childhood and infancy, one is impressed by two things. First, the tendency of some writers to lose themselves in the mazes of neuro-hystero-pyschopathic theories, and secondly, the scarcity of reports or discussions upon hysteria in infants.

The term anorexia nervosa is of course self explanatory, but it would seem wise to restrict the use of the term. All gradations of the disease are to be found. Those varying from simple, almost insignificant phases, to those of extreme severity, terminating fatally.

No reference will be made to this condition so commonly found in young children, neither will the common perversions of appetite be considered. These latter have been well worked out and need have no place here.

A negative statement possibly best suggests the application of the term, anorexia nervosa, that is, if we are able to find any organic lesion causing the condition we are not dealing with true anorexia nervosa. Forchheimer has expressed it as follows: "There must be absence of organic lesion which would explain the anorexia."

The condition in infants is extremely rare, to judge from the reports, and while nothing done in this case adds to our knowledge of the treatment neither does it throw any light upon the etiology, yet it does seem worthy of report.

The consensus of opinion at present is that it is a neurosis, and while it is extremely interest-

* Read at the annual meeting of the Medical Society of the State of New York, at Rochester, May 1, 1913.

ing to attempt to grasp the underlying psychology, at the same time it must be confessed that there are too many unknown factors in the equation.

Precocity on the part of the infant, or the presence of a very delicately balanced nervous organism in either parent must not be disregarded as factors. To what extent they obtain as a suggesting force must be left undecided.

Forchheimer has reported several cases of anorexia nervosa in children with a review of the literature, and gives his ideas upon the etiology of the condition. His paper includes Friedlander's case which was considered to be the youngest patient in whom this condition was found.

Friedlander's patient was one year old. Attempts to wean the child brought about a complete refusal of food. Repeated, thorough examinations were absolutely negative. He was removed to a hospital, and for four days nothing was taken by mouth despite all skilled effort. Saline solution was given by rectum. It was not until the end of the second week that the child began to take food, being sustained meanwhile by gavage.

The case to be reported can not be classed as one of great severity, and it is not at all improbable that placing a nurse in charge, or transferring the patient to a hospital might have materially modified the progress.

G. B.—Male, age 11 mos., 9 days. Third child.

F. H.—Two brothers, both of whom are alive and well. The older child being highly organized, and who, between the age of seven and nine years, required careful watching because of moderately severe anorexia.

Father and mother alive and well. The parents while not neurotic possess markedly nervous temperaments, the father more so than the mother. Nothing of importance in the history of either parent.

P. H.—Child born at full term, frank breech presentation after a pregnancy marked by severe and prolonged vomiting.

The infant came under my care at about six weeks of age, at which time he was artificially fed, this being advised by the obstetrician in charge. Breast feeding was deemed impracticable because of failure experienced with the other children.

The baby made good progress excepting an occasional gastro-intestinal upset due to the fact that the mother, who cared for the child, considered herself competent to modify formulæ without seeking medical advice.

Shortly before the onset of the present illness, the infant was getting whole milk, eight ounces every four hours, with one night feeding. He was also getting orange and beef juice daily.

P.I.—At the beginning of the P. I., the baby weighed twenty-three pounds, fourteen ounces. He had four teeth, and, excepting this deficiency, was apparently a normal infant. Stools normal. No vomiting. Sleeping well. Happy disposition. He occasionally left from one-half to one ounce in the bottle.

On February 11th, the mother stated that because it had become necessary to use a new nipple, the infant was extremely reluctant to take the bottle. No stress was laid upon this common incident, and she was advised to offer him his food in a glass, and that if he refused to take it, it was to be removed and no further effort made to get him to take it until next feeding time. It seemed wise to advise offering the milk in a glass because it might obviate the trouble of weaning him from the bottle a month or two later.

No attempt was to be made to compel him to take the milk. The mother, however, was instructed to make him take at least ten ounces of water in the twenty-four hours.

In the twenty-four hours, of February 12th, he took of milk, seven ounces, water, eight ounces; part of the milk he took from a spoon, part from a glass. Water he took from a spoon. February 13th: Took milk, four ounces, water, nine ounces, beef juice, one teaspoonful. February 14th: Took sixteen ounces of water, but no milk.

At this period the mother in desperation, and with my consent, offered him milk from the bottle, using the old as well as new nipple. Great care was employed to remove the odor from the new nipple by frequently boiling and by manipulation it was given the consistency of used rubber. The infant not only evinced no desire for the milk, but with both hands would push the bottle away, and resented deeply any attempt to place the nipple between his lips.

Repeated careful examination revealed absolutely no physical abnormality. Pulse was increased in rate. No fever. Stools were scant and at times green, but not foul. No blood or mucus. Urine was negative, excepting a rather high specific gravity (1.039) and a slight increase in normal solids. Blood, negative. No Wassermann was done. Reflexes normal throughout. No discernable change in mentality. As might be expected, no stigmata of hysteria obtained.

By this time, the fifth day of the disease, during which time the total intake was, milk, eleven ounces, water, forty-three ounces, beef juice, one teaspoon, the child had lost two pounds. Was very fretful, slept badly, and showed plainly the ordeal through which he was passing. Saline solution was promptly expelled from the rectum, even when given in amounts as small as one-half ounce.

Every known art to induce the infant to take nourishment was called into play. He was taken to the dining-room and offered food at meal times with the rest of the family. He was seated on the knee while the parent, with audible gusto and evident delight, partook of their food. He was left alone in the nursery with food. He

was left alone with the other children at their meal time. Nothing of which we knew was left undone to overcome his determination not to eat.

On the sixteenth, the weight had dropped to twenty-one pounds; a loss of two pounds, fourteen ounces.

Counsel was called in and gavage decided upon. It was felt that after four or five feedings with the tube, the discomfort and annoyance would be sufficiently great to correct the trouble.

The tube was introduced without difficulty, and four ounces of an equal mixture of milk and water were given. Four and one-half hours later six ounces of a like mixture. The strength was gradually increased until he was getting eight ounces of whole milk every four hours. The morning of the eighteenth he took four or five teaspoons of cereal. The morning of the nineteenth he nibbled at zwiebach. At noon, six teaspoons of beef-juice, and in the afternoon took two ounces of milk from a glass. It is interesting to note, that preparations for gavage excited only interest apparently on the part of the patient. No objection or displeasure being evinced until the actual introduction of the tube.

At the end of the fourth day of gavage it was considered advisable to discontinue this measure, and to attempt once more to starve the infant into feeding.

One and one-half spoons of barley gruel jelly; a small piece of bread with about three and one-half ounces of food mixture, constituted the food taken on the first day. On the second day he began to take fluids fairly well, and a day or two later solids were taken freely. By the end of the week he was taking all the food offered. Further history is unimportant excepting that he has since gone through chicken-pox, parotitis, and double otitis media.

To sum up the case briefly, we have a healthy infant, unencumbered by parental taint, manifesting a determination not to take food. So far as may be determined the sole cause was the substitution of a new nipple for an old one. A persistent refusal, with a resultant loss of nearly three pounds, to take any food offered in any manner.

Added to this the lack of any organic lesion which we could discover, to explain the disease. Gavage lasting four days, followed by a gradual surrender on the part of the infant.

SUB-CONJUNCTIVAL INJECTIONS OF CYANIDE OF MERCURY IN OPTHALMOLOGY.*

By CHARLES B. MEDING, M.D.,
NEW YORK CITY.

OF the value of subconjunctival injection in opthalmology clinicians are aware, but of the respective merits of the various solutions employed there seems to be no helpful measure.

The question would seem to be, whether the beneficial effects are due to the injection or to the chemical; whether the production of lymph stasis or the lavage and consequent elimination, cause disappearance of exudate. Mechanically, since any injection into living tissue increases fluid content and disturbs relations, it must awaken the circulation to restore normal tension. If we imagine virulency to depend on the percentage of dilution of toxins, osmosis alone might act beneficially, but it could scarcely be unattended by phagicytosis.

Certainly water to which is added an infinitesimal amount of sodium chloride must owe its efficiency to increased fluidity, disturbed relations and elimination consequent on their restoration, rather than to the slight increase of an already present agent.

There does not seem to have been any comparative experiments along these lines. Most observers have always used some preparation or combination of one or more of the popular agents, mercury, salt or iodine. There is, therefore, an abundant literature of remarks, opinions and discussions but so far as I have been able to find little definitely presented clinical experience. To this Darier is the notable exception in his presentation of the treatment of chorioditis.

The experience related in this paper was gained at the Amritsar Hospital, India, under Colonel Henry Smith, and presents a claim for the use of the cyanide of mercury as being the principal cause of results obtained, and superior to either salt or iodine. More or less full notes were taken on two hundred cases. Many patients disappeared on the second day before examination. A variety of causes make full data impossible there as here. The following is a condensed report:

Condition	*Number Injected*	*Good Results*	*No Result*
Opacities of vitreous	1	1	..
Trachomatous keratitis (panus)	100	75	3
Ulcers, acute-indolent	40	25	5
Ulcer, hypopyon	3	2	..
Keratitis ulcerus suppurativa	2	1	..
Corneal opacities (recent?)	28	10	..
Keratitis parenchymatous	3	1	..
Sympathetic ophthalmia	1	1	..
Episcliritis and scleritis	4	2	1
	182	118	9

Besides these a large number of mixed cases of what might best be called irritable eyes were similarly treated. Patients with scarred corneas, diseased lids, more or less ciliary injection, blepharospasm and lacrymation; conditions in which usual treatments are more or less tedious and unsatisfactory.

In all these cases the treatment consisted of a sub-conjunctival injection of 10-20 minims of a 1-4000 solution of the cyanide of mercury in sterile water.

The immediate effects differed considerably in extent and severity. Generally speaking, those showing least œdema ocular and neighboring

* Read at the annual meeting of the Medical Society of the State of New York, at Rochester, April 29, 1913.

were least benefited and in these a second injection achieved nothing. There was not much complaint, although in some cases no cocaine was used; this, however, is not the routine nor advisable. In cases injected at the Harlem Eye and Ear Infirmary this has also been true. Applications of heat and cold, whichever preferred by patient, have been used here, but no after treatment was called for in India. Within an hour or so all discomfort disappeared.

The results were very satisfactory. Blepharospasm and lacrymation were promptly relieved. Pain in scleritis and ulcers ceased. Those led to hospital were able to leave alone next day, so far as these symptoms were concerned. This was the cause of my awakening.

Recent corneal opacities were improved. Other remedies may have done as much in these cases, but only after more expenditure of time and attention, both impossible in India.

As a routine for chronic trachomas with panus, if time and suffering are of moment, cyanide injections hold high place.

In choroiditis, retinitis, neuritis and retinal detachment, I have no experience worth recording, but, in so far as a definite lymphagogue, a known alterative and eliminative and a certain antiseptic are indicated the method possessing these qualities should be valuable. The antisyphilitic value should also be considered.

In India the use of the injection was so general, that there must have been cases suitable for other treatment and no doubt some failures were due to mistaken application. The unprejudiced observer, however, was compelled to admit that no treatment could have exceeded the good results in time or simplicity, and for the failure, the experienced clinician would be puzzled to suggest a more likely treatment. The best results were evidenced in those cases where destruction of cornea was imminent and certain, the only hope here being in an instant checking of the process. Most any method will preserve a sightless globe, the eventual scar being the true measure of success. In a large number of cases the injection marked a beginning devervescence.

While the writer does not urge any such routine treatment as he saw and as he would follow in practice in India, he does not consider sub-conjunctival injection of cyanide as a method of last resort. On the contrary, he believes that a wise diagnosis in most of the severe cases of the above group calls at once for this treatment.

The fact is, that many cases of corneal ulceration are doomed by the lax treatment instituted. On first appearance with a casual history corneal erosions, abrasions and trauma from flying particles of stone, metal or wood, are apt to appear innocent. Cleansing and atropin are generally prescribed. When in twenty-four hours or more these cases return showing increased ulceration and hypopyon, the treatment which has proved of no avail is surely useless in continuation. An injection at this stage commonly gives brilliant results Later it is mere procrastination.

The experience was of use and maybe accepted as valid, in that it showed availability. There were no cases of "frightful" reaction, no "fearful" results. Untoward accidents, such as necrosis, ecchymosis, injury of sclera, were never observed. The apparent increase of tension was temporary, but it is difficult to be sure of its existence as a result. The tonometer should be used constantly before and after to make any statement useful.

The adhesions often mentioned are said by Indian operators to be temporary, and this was certainly true in those where examination was made ten months or a year after injections. They would seem to be unimportant in the class of eyes mentioned.

Although in a few cases the redness and œdema were more than ordinary the symptoms belied the sensations. Experience at home has confirmed this feature.

What may be considered minor matters by the listener or observer are evidently important. It is, for instance, wise to be sure that the needle point is free between scera and conjunctiva and not engaged in Tenon's capsule—wise, therefore, not to inject too near the limbus. It is best to inject only so much in one place as will make a soft bleb, if more is needed we should use inferior sub-conjunctival space. Children seem to stand stronger solutions than the aged. A warmed solution seems least painful.

The cyanide is less irritating, causes less adhesion and does not affect instruments. It is as potent and so discounts the bichloride. Whatever may be the value of salt solution in chorioidal, retinal and neural affections it is not to be compared with the cyanide in the above group.

It should be said again, that these cases received no other treatment whatsoever. It is indeed a point of value that these injections obviate constant attention and personal handling, both impossible in India and great trials here.

The report of results in the case mentioned may be dubbed as too general to be of use. May I answer that it was the number and mixed conditions which rendered the experience fruitful. The old trachomas and panus with blinding lacrymation and spasm, the ulcers, keratitis and opacities were of the most distressing and dangerous class. They made, aside from glaucoma, cataract and trichiasis, the bulk of all cases presenting. The impossibility of daily attendance at clinic, the poverty, ignorance and often indifference, rendered one hopeless. A year's work in New York would not give the severe cases of a week in India. It is only under such conditions that one grows familiar with a method of treatment. Too often widely published opinions are based on so small a knowledge that accidents of technique and mistakes in judgments take the place of physiological process and its results.

It is not necessary to become over enthusias-

tic, neither may one hope to try out cyanide injections in a single case. Each surgeon should test out his own usage and be governed by his own results. It is surely a sterling resource, and after a careful consideration of discussions pro and con here and abroad in the light of my experience I must tell you that no case has been made against the remedy and that splendid results await its wise use at your hands.

Discussion.

DR. E. J. BISSELL, Rochester: I have used sub-conjunctival injections of various agents in a variety of ocular diseases. Cyanide of mercury in the diseases referred to by the author of the paper has given me very satisfactory results. By adding a drop of 1 per cent. solution of cocaine to the cyanide solution just before its injection, very slight discomfort follows its use. Only in one case of choroiditis have I had any unpleasant symptoms. In this case the tension on the following was 35 m.m. HG. Eserine restored it to normal. In ten cases I have followed M. Smith's suggestion and used the cyanide of mercury in immature cataract cases. I have seen no marked results in the appearance of the lens. Many cases of cataract are accompanied by deeper tissue changes, vitreous opacities, etc. These deeper defects are, I believe, helped by the injection, and the improved vision may thus be accounted for. In two such cases I have seen marked benefit.

SQUINT AND ITS CORRECTION.*

By JOHN J. O'BRIEN, M.D.,
SCHENECTADY, N. Y.

THE purpose of this paper is not to enlighten the members of this section. They are already familiar with its subject matter. But to gain the passing attention of the general body of the profession so that immediate action will take the place of indifference, in the treatment of their cases of squint. To advise the parents of a child who has just commenced to squint, "to wait till the child is ten or twelve; that nothing, can be done till then; that the child will grow out of the squint," is wholly bad. It is true children do grow out of squint but always with a blind eye. Could parents' prevision see the sequence of procrastination there would be little danger of such counsel being accepted. In its consequence neglect is but a step removed from destruction of the eye, as a visual organ. Central vision in a neglected case of squint is seldom better than one-tenth of normal and the ability to read utterly lost. When these facts are familiar to the public there will be as little likelihood of a child with beginning strabismus being neglected than if he had appendicitis or gall-bladder disease. Yet as you know, it is but a short time since the public was educated to take care of the latter. The change was wrought by frequent discussion.

Of the many theories launched from time to time to account for strabismus, internal and external, a few are fanciful, some worthy of consideration. Among the former are imitation and habit. The possessor of normal eyes would have to practice a long time indeed to succeed in imitating his squinting brother. Where the essayist spent his childhood the popular accepted cause of quint was that the child was "overlooked" by one who had the "evil eye." This was not the belief of the profession. Twenty or more years ago faulty insertion or over-action of the external ocular muscles as the etiological factor in strabismus had great vogue. The remedy was so simple that a season of tenotomies ensued bringing in its trail disaster and disappointment. Tenotomy suddenly fell into deserved disrepute and the theory upon which it was based no longer holds a place as the causation of squint. At present the most accepted explanations of the etiology of strabismus are the accommodation theory of Donders and the fusion theory of Worth. But neither furnish a satisfactory explanation of all cases of strabismus. In the great majority, however, one or other or both do furnish a working basis upon which a rational correction of the defect can be undertaken. Worth believes that if the brain can fuse the two retinal images into one and thereby acquire binocular vision the desire of the organism is so all-powerful that once established it will never be relinquished. This development of fusion then is all that is needed to maintain the visual axes in their proper relations. That this is not always true is often apparent. In many cases where the constant wearing of proper lens produces parallelism of the visual axes, to re-establish the squint all that is needed is removal of the glasses. Upon putting on the correction again the squint as suddenly disappears. This happens, too, in patients with the highest degree of binocular vision. The fusion is perfect, but in the absence of the proper correction it is unable to maintain the parallelism of the visual axes.

Donders concept is that in internal strabismus the accommodation and convergence are out of harmony. This probably accounts for more cases of this form of squint than any other single explanation. It may be briefly stated thus: Accommodation and convergence have been so long and intimately associated in the act of binocular vision that one is never exercised without an equal employment of the other. The emmetropic eye when fixing a distant object uses neither accommodation nor convergence. To see clearly one meter the eye accommodates one diopter and converges one meter angle. The hyperopic eyes therefore, that must use, for in-

* Read at the annual meeting of the Medical Society of the State of New York, at Rochester. April 29, 1913.

stance, two diopters of accommodation for clear, distinct, distant vision when fixing a nearer object have a powerful tendency to overconverge. Where this cannot be controlled, at first there is an occasional, followed sooner or later, by a constant squint. But why one hyperope should squint and another with a much greater defect should not is buried in the mysteries of that tangle of cells and fibrils that go to make up the visual part of the central nervous system.

Like most everything else squint is seen in the neurotic. It may be convergent, divergent, alternating or periodic. The underlying cause is not usually difficult to discern, besides, in the periodic, the strabismus changes in a bewildering manner from day to day. Such patients should be under the care of a neurologist. Paralysis of one or more of the extra ocular muscles is the cause of squint. This is readily detected by the diminished, or absence of, excursion of the eye in the direction of the paralyzed muscles. With the disappearance of the paralysis the movements and position of the eye become normal.

The most reasonable explanation of alternating squint is that due to a total absence of the fusion function, the brain does not fuse the two retinal images into one. In almost all cases of alternating squint the eyes are nearly emmetropic. That there is neither faulty insertion of the muscles nor defect in their power is at once apparent. Cover the fixing eye, it converges while the other instantly fixes the object and becomes straight. The excursion, too, of each eye separately in all directions is at least normal. These patients are seldom neurotic; on the contrary, they are usually vigorous physically and mentally. Their only defect being the distressing, deforming, squint.

As divergent squint is frequently associated with myopia the accommodation theory offers no sufficient explanation of its causation. Nor does the fusion theory, for in order to fuse the two retinal images the object must be seen with a reasonable degree of clearness. To the myopic eye either distant objects are not seen at all, or, if the myopia be not of too high degree, they are so hazy that the myopic eye acts in the manner as if it were blind. It at first is unsteady in its movements, deviating out occasionally when looking beyond its far point. This tendency to diverge finally becomes fixed resulting in a permanent divergent squint. The muscles are not at fault for the movements of the squinting are just as vigorous and extensive as in the non-squinting eye except where the squint has lasted so long that the internal rectus has atrophied from non use.

The theories of squint are of the greatest interest and importance to the profession, for upon them in a large measure must a rational treatment be based. To the patient it is of the first importance to preserve the vision of the squinting eye and correct the deformity. To accomplish this we have many therapeutic agents. It cannot be too often iterated and reiterated that success depends on the child being properly treated at the earliest possible moment after the appearance of the squint. It may be worth repeating that children that grow out of their squint do so with an eye whose central visual acuity is zero. For the practical affairs of life such an eye is blind. The younger the child the more rapid is the decrease in vision. A delay of months in a four or five year old child may not be fatal to vision while a like delay in a child a month or two old would spell irretrievable disaster. In very young infants the deterioration of the macula is very rapid. The rule, therefore, should invariably be to institute treatment within a week of the manifestation of the squint.

The first step in the treatment is to correct, under atropine, the error in both eyes within from a quarter to three quarters of a diopter of the full correction. The less the error the nearer should the prescription call for the full correction. This should be constantly worn. Children are never too young to wear glasses when they are indicated. The proper correction of the refractive errors in a surprisingly large number of cases of both convergent and divergent squint will be all that is necessary to effect a permanent, complete cure. When this fails we have recourse to the other agents. These in order of importance are: Atropine to be instilled in the fixing eye; occlusion of the fixing eye; training the fusion sense and operation. The objects of treatment are to arrest the diminution of and bring back the vision to the squinting eye and restore the visual axes to normal. Their application can perhaps be best shown by an illustrative case. A boy of 13 months began, from no apparent cause, to have an occasional internal squint of 25° in left eye. Six weeks later the squint became constant. Three months after the onset of the squint I saw the little fellow. The corneo seleral margin was at the inner canthus. There was no loss of power in the external ocular muscles and good central fixation. Atropine for refraction. Retiniscopy determined an error in right eye of × 175 S., = C. × 125a 90: left eye + 350 S.,= c × 150 a75 Glasses ordered less × .25 S. O^2 for constant use. Three weeks later left eye with correction converged 15°. Ordered to occlude the fixing eye each forenoon and instill atropine one drop each morning in it and return in two weeks. The visual axes at the next visit were parallel. The visual acuity in left eye had returned; he can readily pick up a fine needle dropped on the floor. Ordered the atropine continued and return in two weeks. Now left eye is straight all the time but right eye converges when accommodating for near. Stopped the atropine. Three weeks later the child returned—its mother stated that left eye had turned in constantly for the past six days. Atropine in right eye ounce daily

and returned in a month. No improvement. Continue treatment and return in a month. For the past two weeks there has been a slight alternating squint. Atropine stopped and return in a week for training of the fusion. This was continued once weekly for six weeks since which, for the past eighteen months, there has been no return of the squint.

In cases where the above remedies fail operation is indicated and the one giving the best results is advancement with or without tenotomy of the opposing muscle. Very high degrees of squint require tenotomy. The correction should be such that at the time of the operation an image of a candle flame or like object should be reflected from the same point on each cornea, *i. e.,* the defect should be neither over nor under corrected. The subsequent permanent result will be that at the completion of the operation.

A word as to occluding the eye in babies. Great care should be used not to continue it for more than a few days at a time for macular vision deteriorates very rapidly in infants. In older children there is not much danger to the vision of the occluded eye. There is no such danger from the use of atropine. The atropinized eye keeps its tone by constant use in distant vision. With care, an abundance of patience and some skill the vision of the eyes of these little squinters can be, if promptly treated, saved with lasting benefit to the patient and some credit to the profession.

Discussion.

DR. WILLIAM T. MILLER, Schenectady, N. Y.: As I have been all my life a sufferer from insufficiency of the right internal rectus, which was at first latent and finally became manifest, I take a personal interest in cases of muscular imbalance.

As to the treatment of heterophoria or heterotropia of all kinds the first thing to do is of course to correct all refractive errors. When such correction does not remove the external muscular troubles and I am satisfied from careful testing of the muscles by the various methods that I have a proper case for developing them, I began a system of exercise. The various methods laid down in the books not being as satisfactory as one could wish. I commenced with a method of my own.

In exophoria or exotropia place the patient twenty feet from a light. If he sees double, see if he can merge the lights, turning the head from one side to the other. The side which is the hardest to merge shows the weakest muscle. Exercise by turning head to one side until image or lights merge, then back to center slowly telling patient to try and keep lights together, when they separate turn the head back and repeat. As muscles get stronger add prism, base out. Exercise must be from both sides but most on side of weakest muscle. The exercise should be kept up until the patient can overcome at least a prism of 7′ of 8′, base out. The exercise should not be continued long enough to tire the eye.

In esophoria or esotropia the image merges straight ahead and separates when the head is moved to the side. Arrange the prisms so the patient can just see single straight ahead. This may need a weak prism, base out, to start with, then turn head to side until image is double then back and repeat. You see, everything is the reverse of the method in exophoria. Gradually add prism, base in, as the muscles get stronger until at least prism 7 or 8, base in, is reached if possible. In esotropia the side that shows diplopia with least turning and exotropia the side that must be turned the most to obtain single vision shows the side of the weaker muscle.

In hyperphoria or hypertopia the head is turned to the shoulder opposite to the hyperphoria. If single vision is so obtained the exercise begins by turning the head up and to the other side until double vision is complained of, then back and repeat. As soon as single vision is retained when head is turned to opposite side, then you can add a weak prism opposite to which you would place a correcting prism, which can be gradually increased. A two or three degree prism will be sufficient. Easy things to remember in examining is that the base of the correcting prism is on the side of the weak muscle and the apex on the side of the stronger one. Prisms for exercise are placed the opposite to a correcting prism, that in operations we tenotomize the muscle to which the correcting apex points and advance the muscle toward which the base is placed.

Savage's method of exercising the obleque muscles with cylinders, I have not had enough practice with to decide me as to their usefulness. As last resort operation. I am guided somewhat as to whether the eye to be operated upon is set deeper or more prominent than the other eye. If more prominent, I think, an advancement is generally best, if more sunken, a tenotomy. Unless the extent in degrees calls for both advancement of one muscle and tenotomy of the other.

DR. LUCIEN HOWE, Buffalo: Dr. O'Brien called attention to the desirability of defining what we mean by the words "Squint" or "Strabismus." We should ascertain by means of the tropometer and otherwise whether a turning in for example, is due to excessive action of the adductors or insufficient action of the abductors. Moreover, this condition whatever it is, should be always stated. On that depends not only the diagnosis but also the answer to the question, whether to make tenotomy or advancement. Until we do agree on this uniformity of definition we will continue to flounder in confusion concerning this aspect of heterotropia.

DR. WILLIAM H. BATES, New York City: One cause of squint just as there is one cause of malaria. The cause is psychic or improper use of the eyes.

1. Squint of all kinds can be produced voluntarily by an effort.

2. All squints have been corrected by education or by teaching the patient the proper method of using the eyes.

3. The method is so simple that parents have been taught how to cure their children.

4. Other physicians have cured squint by eye education without operation.

The speaker learned how to voluntarily produce convergent, divergent and vertical squint in his own eyes which has been a help in treatment. Photographs were submitted of a case of convergent squint with paresis of externi cured by the mother by eye education.

Dr. William R. Broughton, New York City: Squint is nature's way of avoiding strain. When there is an error of refraction or an error of muscular adjustment, or when from pathological conditions it becomes too great a strain to maintain single vision, nature elects to use the stronger eye or use the eyes alternately and squint results.

For the reason I am not favorable to the forcing of binocular vision by means of stereoscopic charts, exercises, etc., until an approximate correction of the squint has been made by a careful correction of refraction by operation on the eye muscles.

If a patient can be trained to attain binocular single vision when squint is the natural position of the eye, the squint or trophia have been transformed into a phoria and the patient is put under a very severe, constant strain on the nervous system.

Accordingly, I first corrected the refraction, then make an approximate correction of the remaining heterotropia by operation and then treat fusion by amblyscope, steroscope, etc.

Dr. Walter Eyre Lambert, New York City: I simply wish to endorse the statements made by the writer of the paper and Dr. Duane, in regard to the early treatment of squint. In order first of all to anticipate if possible the development of amblyopia or anopsia a careful estimate and accurate correction of the error should be prescribed as early as possible. Also the institution of orthoptic exercises, stereoscope, etc., as well as the occlusion of the better eye, exercising the poor eye. Many cases of convergent strabismus are thus cured. If a cure does not result, under such treatment in a reasonable time, operation of some kind is indicated. The character of the operation must be determined by the muscular condition.

Dr. A. G. Bennett, Buffalo: A paper of this sort would better be read before general practitioners, because we, as oculists, fully realize its importance. My teaching has been, that no child that needs glasses is too young to wear them, whereas the family physician is only too apt to advise that intervention be postponed until the child is older—a pernicious teaching and apt to be disastrous. I have fitted a child as young as 9 months, and a colleague one of 7 months, both with perfect result.

Dr. Alexander Duane, New York City: In considering treatment of squint in children, one must distinguish two classes of cases, (a) Those in which the squint is either a congenital deviation or occurs indirectly as the result of a congenital deviation. (b) Those in which squint is acquired from causes acting after birth.

In class A operation is usually the only remedy. In class B the correction of the refraction will relieve the conditions, in a great majority of cases, if applied early enough. The refraction should be corrected as soon as possible after the detection of the squint, no matter how young the child. It may be said, too, that there is no age limit in the other direction; for even in adults the correction of refraction may relieve a marked squint. In one such case that I have observed in an adult, the squinting eye was totally blind and yet the correction of the refraction relieved the squint. The correction of the refraction may be supplemented by atropinization of the squinting eye and by the amblyoscope. The latter rather to exercise the convergence than, as Worth thinks, to develop the fusion power.

INDICATIONS FOR OPERATION ON THE NASAL SEPTUM.*

By JAMES F. McCAW, M.D.,
WATERTOWN, N. Y.

THE consideration of the indications for operation on the nasal septum is of the greatest importance not only to the rinologist, but to the general practitioner as well, and secondary only to that of the patient himself.

Ever since the attention of men working in this special field was attracted to irregularities of the septum as influencing proper nasal breathing and its far reaching secondary complications affecting the entire upper respiratory tract, the best operative methods and the indications for such have been a live question and still offers some points for discussion.

In this short paper I will attempt to give as clearly and concisely as possible the conditions which seem to indicate attacking the nasal septum surgically, and the conclusions will be based entirely upon the writer's clinical experience and observation.

We have long since given up the old cutting and crushing operations on the septum with the prolonged and barbarous after treatment and questionable results for the submucous resection which to our mind is a much more surgical procedure, giving definite and better results and requiring very little after care. It can be done under local anæsthesia and the patient is able to return to his daily vocation in three to five days. There is no doubt in the writer's mind

* Read at the annual meeting of the Medical Society of the State of New York, at Rochester, May 1, 1913.

that all nasal septum work should be done submucously, thus saving, instead of destroying the mucous membrane, which later is a decided advantage in carrying on normal nasal breathing. For these reasons, what follows will deal entirely with this particular operation.

INDICATIONS.

The first and greatest indication for attacking the septum surgically is to establish free nasal respiration and to improve drainage from the accessory sinuses. There is little question that this is the underlying cause of most of the conditions affecting the nasal chambers, and responsible for a large majority of other complications of the upper respiratory tract; also the ears, and in some cases the eyes. In adult life some form of septal deflection is responsible for at least 75 per cent. of nasal obstruction and this may vary from one of only very slight impairment to almost complete closure.

The most frequent form of deflection met with in our clinical experience; and the one upon which there can be no doubt as to the indication for operation is the crest or ridge deflection. The deviation begins well anteriorly extending upward and backward, following the line of articulation between the quadrangular cartilage and perpendicular plate of the ethmoid above and the vomer below.

In many cases this is in contact in front with the inferior and above and posteriorly with the middle turbinate of the corresponding side. In some cases deep pressure is exerted on these bodies by this form of deflection, the nostril being narrowed to the exact degree of the deviation, thus drainage and normal breathing is interfered with to the same degree. In the opposite nostril nature makes an effort to compensate for this irregularity, by producing hypertrophy of the turbinate bodies to fill in the increased space produced by the concavity. These are the cases who consult us not only for the impaired breathing function but they complain in addition, it may be, of restlessness, dry mouth and throat, especially mornings, lassitude, the lack of recuperation from a night's sleep, great quantities of thick tenacious mucous in the post-nasal space, frequent colds with pharyngeal and laryngeal irritations; all of which gives a very decided indication to attack the septum surgically, that nasal drainage and respiration may be properly carried on.

There are many cases of decided irregularity of the nasal septum who complain very little of the impediment to nasal breathing this being overshadowed by some of the eye, ear, or throat complications dependent upon such impairment. Clinical experience teaches us that such complications are largely the result of nasal obstruction, and even though our patient does not complain of this as a prominent symptom, nevertheless the indication for submucous resection is apparent and should be done to establish free nasal breathing and drainage, which is at the basis of his condition.

The indication for operation on the septum should not be based entirely upon the degree of the deflection but upon the symptoms, which, according to our clinical experience, have been shown to be dependent upon such deviations. In the writer's experience there are very few cases of deflection of the nasal septum which do not give clear indications for operation, either from the mechanical obstruction or symptoms secondary to such obstruction.

A very noticeable observation made frequently, is that the apparent degree of nasal obstruction is not always commensurate with the symptoms; for that reason I do not believe, as Loeb does, that slight deflections of the septum should not be operated. On the contrary, some of my most brilliant and satisfactory results have been in patients with only slight deviations.

We, therefore, consider the highly neurotic type of individual, who complains of almost constant nasal obstruction with watery discharge, susceptibility to certain odors which brings on attacks of sneezing with exacerbations of discharge, feeling of fullness in the frontal regions or asthmatic attacks, and where, upon examination, only very slight gradual deflection of the perpendicular plate is found, with thickening high up in the middle turbinate region in contact with it, forms a very strong and decided indication for the submucous resection.

Where a relationship can be established between sinus disease, giving eye symptoms, and nasal obstruction interfering with middle ear ventilation, due to deflections of the septum, such deviations should be corrected before attempting other treatment, for many times this alone will bring about very decided improvement from the relief of the pressure on the turbinates, the passive congestion and turgescence of their mucous membrane and the improved drainage and ventilation of the accessory sinuses, as a result of such procedure.

There is another class of cases which I think we should study very carefully; those patients who come to us complaining of frontal headaches, coming on, perhaps, in the morning, lasting from one to two hours to all day, associated with or without subjective symptoms of impaired nasal breathing. These people are addicted to all kinds of "headache remedies," have consulted oculists with the hope that some refractive error is at the basis of their suffering, all with but little benefit. In examining the nose of such a patient no positive evidence of sinus involvement may be present, the breathing space may seem to be ample, no accumulation of discharge visible; but nearly all cases have shown a gradual deviation of the septum, which is usually in contact with the middle turbinate; in others there is a space between them, but by a close examination of the septum at a point corresponding to the lower margin of the middle turbinate a line

of thickening will be seen with a depression above it indicating that prolonged intermittent pressure must have been exerted over this area.

It is not difficult to understand that, although the apparent degree of obstruction is slight nevertheless the particular area over which it is exerted must produce sinus congestion and interference with drainage. I have operated a number of these cases for the relief of this slight pressure with very gratifying results in most of them. As my field of experience broadens in this particular class of cases, I am coming to place more reliance upon the above findings as an indication for the submucous resection. In a few cases the results have been little short of marvelous, the symptoms having been completely relieved from the time the nasal packing was removed.

There is another class of cases which deserves mention: Those who come to us complaining of the external deformity. This may take on any degree or shape from the "hump" of the dorsum to the extreme lateral deviation of the entire cartilaginous framework. The most of them complain very little of nasal obstruction but come for the relief of the very annoying deformity. This is especially so when it occurs in females. The writer has had no experience with "hump" deformity but it would seem to be an indication for operation upon the septum.

In the lateral deviation we usually find, upon examination, a very exaggerated deflection of the cartilaginous portion of the septum, which in its development has carried with it the anterior nasal spine of the superior maxilla, and the anterior inferior border of the quadrangular cartilage has been carried across and downward into the opposite nostril. thus producing varying degrees of lateral deviation of the entire cartilaginous framework.

Usually these cases can be completely corrected by operation upon the septum and breaking away the anterior nasal spine.

In conclusion, the indication for operation upon the nasal septum is any degree of deflection which is giving evidence of either obstruction to nasal breathing or interference with drainage or ventilation of the accessory sinuses, or producing external deformity. The symptoms of such are manifold and the complications widespread, involving the entire upper respiratory tract.

In the writer's experience, no hard and fast rule can be laid down as to when we should attack the septum surgically, but each case must be judged according to the symptoms presented and our decision based upon such and the clinical experience of the operator.

Discussion.

Dr. John O. Roe, Rochester, in opening the discussion said, that he agreed perfectly with the author's statement that all deflections of the septum, causing pressure against the turbinals, should be corrected. Intranasal pressure, due to a deflection of the septum, located high up in the nasal passage, or to an enlargement of the middle turbinated body, is the most frequent cause of local and reflex disturbances of any conditions that we have to deal with and the one most frequently overlooked.

Last week I saw in consultation in another city a most interesting case of this kind. The patient, a lady 35 years old, had been a great sufferer from hay fever for many years. Throughout the year, she had more or less hay fever symptoms, although much aggravated during the summer; and during the past three or four years she had asthma severely. On examining her nose, I found firm pressure in the attic on both sides, due in one side to a deflection and thickening of the septum, and in the other to an enlarged middle turbinate. The inferior turbinates were so small that nasal respiration was quite free.

The patient had been seen by several rinologists, who had evidently overlooked this condition in the attic of the nose, because of the free passage below.

By submucous resection of this enlarged turbinate on the one side, and of the septum so as to relieve the pressure on the other the patient will be completely relieved from her distressing condition.

Deviations of the septum are to be divided into two main classes: Deviation with thickening of the septum, and deviation without thickening. In either case, it is exceptional not to find a thickening at the angle on the convex side, amounting in most cases to a ridge, a crest or a spur, varying in degree according to the extent of the deviation and its location.

Dr. McCaw has considered the subject only with relation to the operation of submucous resection. In the case of thick septums and also in the removal of the spurs and ridges, that is the ideal operation; but in the case of thin septums, I do not quite agree with him on this point. Thin septums are far more easily corrected by fracturing the septum, which is so easily done with my comminuting forceps, with which you are doubtless all familiar; and by holding it in place for a few days until it becomes fixed, we have a perfect result without the septum having lost its rigidity. In the case of thin septums, the periostum, as well as the mucous membrane and other softs parts, are correspondingly thin; consequently if we take out the cartilagenous or bony part, we have a thin flaccid, membranous septum, that may give much annoyance to the patient. In the case of unilateral spurs or thickenings of the septum, giving to one side of the septum the appearance of being deviated, while the other side of the septum is comparatively smooth and straight, the operation indicated is the submucous resection of the thickened half of the septum, leaving the other half of the septum *in citu*. The septum, as we

know, is composed of two plates, each with a distinct center of ossification, united as if they had, been glued together. In some instances where this union has not been complete, we find a cavity between the two plates. In making this hemi-resection, it is important to carefully separate these plates along the line of union, when the thickened side, together with the spur or ridge, is easily removed.

As Dr. McCaw has so well said, when we have any abnormal condition of the septum, whether a deviation, a spur, or a thickening of the septum, causing a disturbance from pressure against other sensitive portions of the nasal cavity, exciting reflex disturbances, in neighboring or distant organs, or if the abnormality of the septum is obstructing the nasal passage or interfering with drainage from the accessory sinuses, this abnormality should be corrected. The question of the amount of disturbance caused by the septum, or whether much of this disturbance is caused by abnormal conditions in the turbinated bodies, accessory sinuses or other portions of the nasal chamber, is mainly a question of diagnosis, which is for the skill of the diagnostican to determine, since it is by no means uncommon that innocent parts are sacrificed when the real cause of the trouble is undetected.

SELECTIVE DRUG ACTION ON THE NERVOUS SYSTEM AS AN AID TO DIAGNOSIS.*

By CARROLL J. ROBERTS, M.D.,
BUFFALO, N. Y.

THE so-called animal nervous system, which supplies the organs of sense and all voluntary muscles, is to be distinguished from the vegetative system, which supplies the smooth muscle of viscera, certain cross-striped muscle (heart, beginning and end sections of the intestines and genital apparatus) and the secreting portion of glands.

The vegetative system is further divided into two parts—the sympathetic and the autonomic systems. The autonomic system is made up of a cranial portion containing the motor-oculi nerve, which supplies the eye; the chorda tympani, which supplies the sub-maxillary and sublingual glands; a bulbar portion, which contains the vagus supplying the heart, bronchial tubes, esophagus, stomach, intestinal canal and pancreas; and a sacral portion, supplying the organs contained in the pelvis. Owing to the importance of the vagus, the chief nerve of the system, the autonomic system is also called the extended vagus, and the study of the drug reactions of this system is called "Vagatonie."

Thus we have running to the organs mentioned, two sets of nerve fibres which are physiological antagonists and a balance is theoretically necessary for the normal functions of the organs to be carried on.

Each system—autonomic and sympathetic— is acted upon selectively by certain drugs. Thus pilocarpine acts as an irritant to the autonomic system and produces the same effects as electrical stimulation. Atropine acts as a depressor of the autonomic system and counteracts the effects of pilocarpine. Adrenalin stimulates the sympathetic system but, as yet, we do not know of a drug that has a depressing action on the sympathetic system.

Pilocarpine may in certain susceptible individuals produce, through stimulation of the autonomic system, the following symptoms or any part of them, with the ordinary dose, depending as to whether the entire system is abnormally irritable or merely one or more of its component parts. Through the chorda tympani, excessive flow of saliva and by means of a functional connection, also a secretion of the tears. Through the motor-oculi narrowing of the pupils, accomodation spasm and widening of the lid aperture. Through the vagus, slowing of the heart and cardio-respiratory arrhythmia, spasm of the muscles of the bronchial tree, increased motility and secretion of the stomach, with or without hyperacidity, spasm of the smooth muscle of the gallbladder and ducts of the pancreas. Through the sacral branches, spasm of the sphincter of the rectum. Through the sweat glands, profuse perspiratiion. Atropine through its depressing action on the autonomic system, allays all these symptoms. An individual so susceptible to an ordinary dose of pilocarpine is called a "Vagatoniker."

According to Eppinger and Hess of Vienna, who have studied this subject thoroughly and whose writings have been freely consulted in the preparation of this paper, many of the so-called cases of hysteria and neurasthenia and the neuroses are, as a matter of fact, due to irritability of the autonomic system and they support their claims with abundant clinical proof, some of which I have had the opportunity to confirm.

The method of procedure that is carried out in the investigation of cases is as follows: Supposedly favorable cases are those that give the history of easy sweating with increased motility of the stomach associated with hyperacidity, cases showing cardio-respiratory arrhythmia, all cases of true bronchial asthma, and those that show nervous symptoms in the absence of marked organic changes. A differential blood count is made, especial note being taken of the percentage of eosinophiles, as eosinophilia is a sign of autonomic irritation. Pulse and respirations are counted and a hypodermic injection of .01 gm. of pilocarpine hydrochlorate given. The case is then carefully observed, the points to be noted especially are: the amount of sweating, the amount of saliva, which is measured, the secretion of tears, the pulse rate and presence or

* Read at the annual meeting of the Medical Society of the State of New York, at Rochester, April 29, 1913.

absence of cardio-respiratory arrhythmia, the respiratory rate and character of the breathing and the exacerbation of any latent symptoms. The case is usually under observation for an hour, the reaction probably never being prolonged much over that time. At the end of an hour, another differential count is made, the percentage of eosinophiles being compared with that shown by the first count. A positive reaction is shown by profuse sweating, the perspiration literally pouring off the patient. Excessive secretion of tears, which course down the cheeks. Large quantities of saliva, 100cc or more. A distinct increase of eosinophiles. Exacerbation of latent symptoms, for example, a case giving the history of true asthma, will frequently give a marked general reaction and in addition, develop an asthmatic attack. A case giving symptoms referable to the stomach, will show increased acidity and motility, as shown by vomiting. A normal individual will exhibit slight sweating and increase of saliva.

The practical application of the facts learned from a positive reaction is that any symptom produced by an injection of .01 gm of pilocarpine, referable to an irritable autonomic system, will be relieved by atropine, the depressor of the autonomic system. The following case will illustrate this point:

H. B.—Diagnosis bronchial asthma. Respiratory rate 16.

11.45. .01 gm pilocarpine injected.
11.55. Face red and warm notices piping in chest, sweating starts on face.
12.00. Typical asthmatic attack, coughing and difficult breathing. Sweating profusely.
12.10. Respirations 34 dyspnœa marked.
12.12. Tears and saliva profuse.
12.15. .001 gm atropine hydrocholor hypo.
12.22. Breathing easier—32.
12.26. Breathing 28, cough better.
12.30. Breathing 24, much better.

The possible connection of autonomic irritability with tabes as shown by the gastric crises, hyper-secretion, sweating, and the favorable action of atropine during the crises, must be thought of.

In a certain number of Basedow cases, with marked sweating, diarrhœas, hyperacidities, moderate degree of tachycardia, suggest autonomic irritability. Particularly if there is an absence of the so-called intestinal glycosuria and an increase of eosinophiles.

The dyspepsias and diarrhœas of apparent nervous origin are worthy of investigation. One case has been reported in which Charcot-Leyden crystals and eosinophiles were found in the stools, suggesting the sputum findings in bronchial asthma. I had under my care a Catholic priest, who for several hours before his turn to preach, was invariably taken with vomiting and diarrhœa and who made a prompt recovery under atropine.

It is worthy of mention that a considerable number of cases of pulmonary tuberculosis showed marked reaction with pilocarpine and all gave the history of profuse sweating following aspirin, suggesting that the night sweats of tuberculosis may be of autonomic origin and that the sweating action of aspirin may be due to the same cause.

The sympathetic system is tested out with adrenalin. The first step in the procedure, is the administration per os, of 100 gm of grape sugar and the first 4 or 5 samples of urine passed after drinking the sugar solution saved and those samples that show tests for sugar are mixed and the total quantity of recovered sugar estimated by means of the polariscope. A normal individual should retain at least 90 per cent. of the grape sugar. The following day, the adrenalin is administered. First, a differential blood count is made, note being made of the percentage of lymphocytes. Then 100 gms of grape sugar are given, pulse rate and systolic and diastolic blood pressure recorded and .001 gm adrealin sol. given hypodermically. Immediate records of the blood pressure should be made, and every five minutes thereafter till the reaction is over. Then the urine is collected as before and polarized to determine the amount of grape sugar recovered. At the end of an hour, a second differential count is made, and the number of lymphocytes noted. A positive reaction consists in a rise of blood pressure of about 15 or 20 mmm a distinct increase in the lymphocytes, increase in the pulse rate, and the recovery of 20 per cent. or more of grape sugar after the adrenalin.

The cases suggestive of sympathetic disturbance, are those that show tachycardias, and those in which the possibility of Basedow involvment is looked for. I have found this procedure particularly valuable in the classification of cases of suspected hyperthyroidism without marked goitre or exopthalmos. A lymphocytosis of 50 per cent., a 25 gm or more grape sugar recovery after ingestion and injection with adrenalin, is highly suggestive of Basedow's disease.

The clinical material used in the preparation of this paper was furnished by Prof. Paul Fleischmann, of the 1st Medical Clinic, Charite Hospital, Berlin.

CORRESPONDENCE.

New York, December 13, 1913.

Dr. John Cowell MacEvitt,
Editor, NEW YORK STATE JOURNAL OF MEDICINE.

DEAR DOCTOR: The physicians who made a Study Tour of Europe last year under the presidency of Dr. William B. De Garmo, of New York, have organized into a permanent body to be known as the "Travel Study Club of American Physicians." A constitution and by-laws have been adopted and the following officers elected: President, Louis Livingston Seaman, New York; Vice-Presidents, William B. De Garmo, New York; Edward B. Meckel, Pittsburgh; Howard Van Rensselaer, Albany; Secretary-Treasurer, Richard Kovacs, New York; Executive Committee, F. H. Albee,

S. Breitenfeld, New York; A. J. Crowell, Charlotte; H. F. Foss, Philadelphia; J. P. Lord, Omaha; J. F. Percy, Galesburg; John Punton, Kansas City.

The Travel Study Club plans for a 1915 tour to the A. M. A. meeting, the San Francisco Exposition, Honolulu, the Philippines, China and Japan.

Yours very truly,

RICHARD KOVACS, Secretary.

THE FEDERATION OF AMERICAN SOCIETIES FOR EXPERIMENTAL BIOLOGY, PHILADELPHIA.

RESOLUTIONS ADOPTED DECEMBER 31, 1913.

1. We, the members of The Federation of American Societies for Experimental Biology—comprising The American Physiological Society, The American Society of Biological Chemists, The American Society for Pharmacology and Experimental Therapeutics, and The American Society for Experimental Pathology—in convention assembled, hereby express our accord with the declaration of the recent International Medical Congress and other authoritative medical organizations, in favor of the scientific method designated properly animal experimentation but sometimes vivisection.

2. We point to the remarkable and innumerable achievements by means of animal experimentation in the past in advancing the knowledge of biological laws and devising methods of procedure for the cure of disease and for the prevention of suffering in human beings and lower animals. We emphasize the necessity of animal experimentation in continuing similar beneficent work in the future.

3. We are firmly opposed to cruelty to animals. We heartily support all humane efforts to prevent the wanton infliction of pain. The vast majority of experiments on animals need not be and, in fact, are not accompanied by any pain whatsoever. Under the regulations already in force, which reduce discomfort to the least possible amount and which require the decision of doubtful cases by the responsible laboratory director, the performance of those rare experiments which involve pain is, we believe, justifiable.

4. We regret the widespread lack of information regarding the aims, the achievements and the procedures of animal experimentation. We deplore the persistent misrepresentation of these aims, achievements and procedures by those who are opposed to this scientific method. We protest against the frequent denunciations of self-sacrificing, high-minded men of science who are devoting their lives to the welfare of mankind in efforts to solve the complicated problems of living beings and their diseases.

Medical Society of the State of New York

MEETING OF THE COUNCIL.

A regular meeting of the Council of the Medical Society of the State of New York was held at the rooms of the Society, 17 West 43d Street, New York, on December 5, 1913, at 1.45 P. M., Dr. William Francis Campbell, President, in the chair, Dr. Wisner R. Townsend, Secretary.

The meeting was called to order by the President, and on roll call the following answered to their names:

William Francis Campbell, Silas J. Banker, Arthur G. Bennett, Gerrit J. Blauvelt, Luzerne Coville, W. Stanton Gleason, Thomas J. Harris, Alexander Lambert, Lewis K. Neff, Myron B. Palmer, Otto Pfaff, Charles H. Richardson, Victor A. Robertson, Robert Selden, Wiliam T. Shanahan, Wisner R. Townsend, Joshua M. Van Cott.

Dr. John C. Otis was excused.

The minutes of the last meeting were read and approved as read. (For minutes see NEW YORK STATE JOURNAL OF MEDICINE, June, 1913.)

The following communication was received from the Committee on Publication, read, and upon motion, duly seconded, was ordered spread upon the minutes:

The Committee on Publication having been asked by several members of the Society what the cost would be of a biennial directory with an addendum issued on the alternate years, begs leave to present the following facts in regard to additions, omissions, deaths, retirements, removals, etc., and the estimated number of pages of such an addendum:

1913 MEDICAL DIRECTORY.

	Additions and Corrections
New York City	3,019
Brooklyn	977
Queens and Richmond	161
New York State, including Buffalo	2,548
Alphabetical List	2,444
New Jersey	465
Connecticut	191
Hospitals	194
Dispensaries	93
Benevolent Institutions	80
Medical Societies	145
Street Lists	2,284
Total	12,601
Omissions	1,119

Medical Directory Addendum based on corrections, etc., for 1913:

	Pages
Data Lists, 30 names to a page	220
Alphabetical List, 20 names to a page	20
New Jersey and Connecticut, 68 names to a page.	8
Hospitals	30
Dispensaries	14
Benevolent Institutions	8
Societies, New York State only	14
Medical Society of the State of New York, list of members complete	77
	391

The estimate of making up an addendum of 416 pages and sending it to the members and to purchasers would be as follows:

Printing	$2,500.00	
Proof Corrections	200.00	
Extra 1,000 Copies	1,000.00	
Postage	400.00	
Stationery, etc.	250.00	
Delivery	600.00	
County Clerks	16.00	
Salaries	2,000.00	
	$6,966.00	
Added expense in compiling a Directory from two books instead one.	134.00	
		$7,100.00
Cost of 1912 Directory without deduction for advertising and sales		8,530.34
Difference between Addendum and original Directory, about		1,450.00
Estimated sales, Addendum and original volume, the year Addendum is issued		650.00
Estimated saving, each alternate year, about. or about $1.100 a year.		2,100.00

As the number of copies of the Directory ordered each year is only sufficient to supply the demand and no copies are left on hand, it is estimated that 1,000 more books will be necessary the year before the addendum is issued and that the cost of such 1,000 extra

copies would be $1,000. As there will be no copies of the 1913 edition left by the time the 1914 edition goes to press, it will be seen that these 1,000 copies are a very moderate estimate for the directories needed in 1915 for the addendum, because each new member of the Society in 1915 will be entitled to a 1914 Directory and an addendum, and this Directory must be printed in 1914, in addition to the copies needed in 1914. Purchasers of addenda in 1915, who did not have an original Directory would be compelled to purchase one and an addendum. As there are no deductions to be made from the cost of the book for advertisements and the number that could be sold would be problematical, it would be necessary to charge for the addendum a sum not less than $2.00. How many sales could be made it is impossible to estimate. Those who buy the 1914 Directory would, however, in many instances probably purchase an addendum.

The Committee and the printer both feel that it would be impossible to put advertisements in the addendum, as it would make it too bulky and would not pay, because there would be so few advertisements for the addendum that are not in the original.

It must also be realized that to issue the new Directory in 1916 will cost more than an ordinary Directory, because the data has to be taken from two books, which will require more clerical work and thus increase the expense by an amount probably not less than $134.00

It must be clearly understood that all these facts are based, as far as possible, on data at hand at the present time and that the cost might exceed the amount estimated. It is not the belief of the Committee that it could be diminished to any appreciable extent. In presenting this estimate it has been the aim of the Committee to make the addendum as valuable as possible, which would mean a complete resetting of all the hospitals and of all the county societies, because the only published lists of the roster of the Society are to be found in the Directory.

The Committee does not feel that it is incumbent upon it to express any opinion upon the advantages or disadvantages of the annual as compared with the biennial publication. This being a question of policy, it is left entirely for the House of Delegates of the Society.

The data in regard to cost has been taken from the 1912 Directory, because the account of the 1913 issue will not be closed until December 31st, but the corrections and data as to size of the new book have been based on the 1913 edition. The cost of the 1913 book, however, will be about the same as for the edition of 1912.

(Signed) Wisner R. Townsend, Chairman,
Floyd M. Crandell,
Alexander Lambert,
Victor A. Robertson,
John Cowell MacEvitt.

Upon motion, duly seconded and carried, permission was granted to the Medical Society of the County of Allegany, the Medical Society of the County of New York, and the Tompkins County Medical Society, to amend their By-Laws as follows:

Allegany—Amend the By-Laws by dropping Section 3, Chapter V, which is as follows:

Sec. 3. Nominations for officers and delegates shall be made at the last meeting before the Annual Meeting.

New York—Amend the By-Laws, Chapter VI, Article 8, by inserting after the word "present," "and voting."

Omit Article 11, Chapter VI, as it is identical with Article 2 of the same chapter.

Tompkins—Amend the By-Laws by adding to Chap- II, to be known as Section 1a, the following:

"Graduates in Medicine, Veterinary Medicine and allied sciences, engaged in teaching or in scientific research in subjects allied to medicine in Cornell University at Ithaca, N. Y., situated in the County of Tompkins in the State of New York, are eligible for active membership in the Medical Society of the County of Tompkins, the Sixth District Branch, and the Medical Society of the State of New York."

Amend Chapter III, Section 3, as follows:

Strike out the words "on January 1st," and substitute therefor the words "at the close of the annual meeting of the Society." The amended section would then read as follows:

"All officers shall assume office at the close of the annual meeting of the Society and serve for the ensuing calendar year, or until their successors have been elected and qualified."

Amend Chapter IV, Section 14, as follows:

Prefix the word "three" before the word "Censors."

The amended section would read as follows:

"Three Censors shall constitute a quorum."

Amend Chapter IV, Section 17, as follows:

Strike out the words "on January 1st," and substitute therefor the following words, "at the close of the annual meeting of the Society."

The amended section would read as follows:

"All delegates shall assume office at the close of the annual meeting of the Society, etc."

Amend Chapter V, Section 1, as follows:

Strike out the words "January 1st," and substitute therefor the words, "the close of the annual meeting of the Society."

The amended section would read as follows:

"All officers shall be elected by ballot at the annual meeting and hold office for one year from the close of the annual meeting of the Society, etc."

Amend Chapter VII, as follows:

In the unnumbered section describing the duties of the Comita Minora insert the word "four" in the blank space before the word "members."

The sentence would then read as follows:

"Four members shall constitute a quorum."

The following addition to the By-Laws, to be known as Chapter XIV:

Section 1. The President shall, within one month after the adoption of this chapter, appoint a Milk Commission, in accordance with Section 32 of the Agricultural Law of the state. Said Milk Commission shall consist of three members of this Society and shall be appointed in the first instance as follows: One member shall be appointed for one year, one for two years and one for three years. Thereafter one member shall be appointed annually for three years.

Sec. 2. The duties of this Commission shall be such as are required by the laws of the state, the Charter of the City of Ithaca, and such other duties as may be required of them by this Society. They shall make a report to this Society at its annual meeting

A communication from Dr. N. P. Colwell, as Secretary of the Council on Medical Education of the American Medical Association was read, requesting that the Medical Society endeavor to induce the Regents to raise the preliminary requirements for the study of medicine by having one year in college or its equivalent, and by raising the number of preliminary counts. On motion, duly seconded, it was referred to a committee of three with power. The chair appointed Dr. Joshua M. Van Cott, Brooklyn; Dr. Luzerne Coville, Ithaca, and Dr. Arthur G. Bennett, Buffalo.

A communication was read from Dr. A. R. Craig, Secretary of the American Medical Association, offering to supply a paid solicitor, to solicit members for the Medical Society of the State of New York on condition that the solicitor be paid $1 for each name secured, with the proviso that no names should be solicited except those given to the solicitor by the county medical societies in the counties in which he was working.

Upon motion, duly seconded, it was ordered that a paid solicitor be employed for one year to secure new members on the terms proposed by the American Medical Association, provided that no fees shall be paid to the American Medical Association unless the member is elected.

The following communication was received from

Dr. Page, Secretary of the Medical Society of the County of Genesee:

At the last regular meeting of the Medical Society of the County of Genesee, July 9, 1913, the following resolution was passed:

Resolved, That this Society request the Committee on Legislation of the Medical Society of the State of New York to secure the passage of a bill which will allow the registrar of each town to send fees due physicians for vital statistics to them without it being necessary for them to present sworn statements.

(Signed) S. E. PAGE, *Secretary,*
East Bethany, N. Y.

Moved, seconded and carried, that it be laid upon the table.

Dr. F. W. Loughran, of the Medical Society of the County of New York, presented the following report for the committee appointed at the last meeting to provide a plan of procedure for the formation of a new medical society in the county of the Bronx:

To the Council of the Medical Society of the State of New York.

The undersigned, having been appointed a committee to investigate the subject of the formation of a medical society in the newly organized county of the Bronx, begs leave to make the following report:

The Committee was organized in compliance with the following resolutions of the House of Delegates and the Council:

"That it be the sense of the House that the members of the Medical Society of the State of New York resident in the new county of the Bronx be organized into a county medical society which will be recognized as in affiliation with the State Society, this organization to be irrespective of whether the members belong to one or the other or all local societies now in the Bronx."

"The question of the establishment of a county society in the county of the Bronx and to be in affiliation with the State Society, was, on motion, referred to a special committee of three to be appointed by the chair, this Committee to report at the December meeting of the Council."

After full investigation of the subject, and conference with the attorney of the Medical Society of the State of New York, James Taylor Lewis, it is suggested that the Council proceed in the following manner in the formation of the new county society:

1. That the President of the State Society be requested to call a meeting of all physicians now residing within the Borough of Bronx, who are at present members of the State Medical Society, for the purpose of forming a county medical organization, which thereafter and on the first day of January, 1914, shall be the representative medical organization of the county of the Bronx.

2. That the President and Secretary of the Medical Society of the State of New York shall be the temporary President and Secretary of such meeting.

3. That after the formation of such organization, opportunity be given to all reputable licensed physicians of the Borough of the Bronx to apply for membership in such representative medical organization, in conformity with the provisions of the Constitution and By-Laws of the Medical Society of the State of New York.

Dated, New York, December 5, 1913.

(Signed) FREDERIC W. LOUGHRAN, *Chairman,*
WISNER R. TOWNSEND,
WILLIAM A. BOYD.

Upon motion, duly seconded, it was ordered that the President proceed in the formation of such a county society upon the plans proposed, and that a mass meeting be called for December 16th, in the Bronx.

A communication was received from the Council on Health and Public Instruction of the American Medical Association, suggesting that Dr. Witherspoon hold a series of meetings in the larger cities of the state, suggesting a maximum number of three.

Moved, seconded and carried that the offer of Dr. Witherspoon to address the profession of the state be accepted with pleasure, with the suggestion that meetings be held in Buffalo, Albany, New York and Brooklyn. The Secretary of the Society was directed to make the necessary arrangements.

A communication was received from Dr. Bingham, asking what action the State Society would take in regard to members who might testify in law suits to views contrary to those held by himself and others as to the possibility of cancer occuring from traumatism.

Upon motion duly seconded and carried, the matter was laid on the table.

A communication to the President from the Comitia Minora of the Medical Society of the County of New York was read, stating that it desired to place in the hands of the Council full information relating to the various steps taken by one Joseph Somme to be allowed to practice medicine after conviction for illegal use of the terms M.D. In these actions the attorney for the State Society had acted as attorney for the defendant and the County Medical Society's attorney acted for the prosecution.

The following motion was duly seconded and carried:

"That it is the sense of the Council of the State Society that it is inexpedient for the attorney of the State Society to appear in cases where a county society acts as prosecutor."

Dr. Harris reported for the Committee appointed to consider the question of a special, voluntary degree in surgery (possibly later in other subjects), analogous to the F. R. C. S., which the public will learn to recognize as an assurance of the holder's skill, as follows:

That the representatives of Erie County, in view of the establishment of a national society—The American College of Surgeons—have requested that no further action be taken in the matter, and that the Committee recommends that the request be laid indefinitely upon the table.

On motion, duly seconded and carried the report was received and the request laid indefinitely upon the table.

The Committee on Scientific Work presented a lengthy report on the subject of providing stenographers for each section at the meeting of the State Society, to be held in April. The report concluded with the statement that the initial expense for reporting would be $150 and $125 for the supervising and editing, and a problematical sum for the folio, etc., and railroad fares. The Treasurer stated that the Society could not afford to spend an indefinite sum, which might exceed $1,000. It was therefore moved, seconded and carried, that the reporting in the sections at the next meeting be left to the individual members, and that the Committee on Scientific Work do all in their power to make this plan a success. The Secretary of the Society was authorized to provide, as has been done in the past, for a stenographer for the Business Meetings and the opening General Meeting.

The Secretary presented the following suggestions for conducting malpractice defense. They were read, then each paragraph taken up and discussed and adopted seriatim; and the entire resolutions adopted as a whole and referred to the House of Delegates.

"Active members of the Medical Society of the State of New York shall be entitled, on conditions hereinafter specified, to receive, without personal expense therefor, legal advice and court service of an attorney or attorneys-at-law in the employ of the Society, for the purpose of conducting their defense in any court in this State, when they are sued for malpractice."

The legal services shall be granted on the following conditions:

First.—Members shall not be entitled to malpractice defense if the acts in the suit for which they make application for defense were committed prior to their admission to membership in the State Society.

Second.—Members who have been dropped for non-payment of dues, if reinstated shall not be entitled to malpractice defense for acts committed during the time that they were not members of the Society.

Third.—Active members of the Society desiring to avail themselves of the privileges of this act, shall make application therefor in writing to the Secretary of the Society, and it shall be shown to his satisfaction that they are members in good standing in the State Society. They shall also furnish the Secretary a complete and accurate statement of their connection with, and treatment of, persons upon which complaints against them are based, giving dates of attendance, names and residences of nurses and of other persons cognizant of facts and circumstances necessary to a clear and definite understanding of all matters in question, and shall furnish such other relevant information and execute such papers as may be required of them by the Secretary or the attorney of the State Society.

Fourth.—A member shall agree not to compromise any claim against him nor to make settlement in any manner without the advice or consent of the Society given through its attorney.

Fifth.—In the event that a member sued or threatened with suit shall, without the advice or consent of the attorney of the Society, determine to settle or compromise any claim against him, he shall reimburse the Society for the expenses incurred in undertaking his defense, and in default thereof, he shall be deprived of further privileges under this resolution.

Sixth.—The Society shall not assume any responsibility for the payment of any sum agreed upon by arbitration in the settlement of claims, or awarded by court verdicts, or for making payments for any purpose whatsoever.

Seventh.—This resolution shall take effect upon its approval by the Council and adoption by the House of Delegates of the Society.

Upon motion, duly seconded, it was resolved that Mr. Lewis be re-employed as Counsel for the ensuing year and that the matter of compensation be left to the Finance Committee.

The resignation of Dr. Sampson as Secretary of the Section on Obstetrics and Gynecology was accepted, and Dr. H. Judson Lipes was nominated and elected to take his place.

The Treasurer presented the following report:

Balance on hand Dec. 5, 1913	$13,496.63
Less outstanding bill, printing of Directory	5,562.78
Balance	$7,933.85

This shows that there is $500 more in bank than at this time last year, but as the Society had $1,300 deficit last year there is shown the necessity of an increase of revenue by an increase of new members.

Dr. Neff placed in nomination as the third member of the Committee on Legislation, Dr. Edwin L. Draper of Albany. The motion was duly seconded and carried.

Dr. Neff requested the views of the Council as to what should be done in the matter of a bill which was to be presented in the coming session of the Legislature asking that Dr. W. J. Morton, convicted in the United States Courts of felony, have his rigths to practice medicine restored, and stated that he had received several letters requesting the co-operation of the State Society in the matter. The following resolution was seconded and carried:

Resolved, That it is the opinion of the Council of the Medical Society of the State of New York that it does not endorse the proposed bill to restore the right of practice to Dr. Morton.

The Secretary, in the absence of Dr. W. H. Park, presented the following names to constitute the Committee on Medical Research for the ensuing year:

First District—Sixteen members: H. M. Biggs, J. D. Bryant, B. F. Curtis, J. Ewing, S. Flexner, A. F. Hess, S. W. Lambert, E. Le Fevre, W. H. Park, W. M. Polk, J. E. Sadlier, H. E. Schmid, L. A. Stimson, J. S. Thacher, W. R. Townsend, F. Van Fleet.

Second District—Six members: E. H. Bartley, W. F. Campbell, J. R. Kevin, J. C. MacEvitt, F. Overton, J. M. Van Cott.

Third District—Three members: J. D. Craig, A. Vander Veer, S. B. Ward.

Fourth District—Three members: G. F. Comstock, G. C. Madill, C. Stover.

Fifth District—Three members: T. Wood Clarke, C. B. Forsyth, H. G. Locke.

Sixth District—Three members: L. Coville, R. P. Higgins, B. W. Stearns.

Seventh District—Three members: W. T. Mulligan, W. W. Skinner, J. F. W. Whitbeck.

Eighth District—Five members: H. W. Johnson, E. C. Koenig, N. G. Richmond, G. W. Wende, H. U. Williams.

Dr. T. J. Harris, Chairman of the Committee on Scientific Work, presented the following report:

To the Council of the Medical Society of the State of New York:

GENTLEMEN: As Chairman of the Committee on Scientific Work, I would report that the program for the Annual Meeting is well advanced. There will be a meeting of the full Committee next week, at which time it is hoped that the various Chairmen will be able to present the programs of their respective Sections.

There has been a generous response to the invitations to give clinics in the various hopitals in New York, and it is our feeling that this feature of the meeting will be an unqualified success.

In a recent number of the STATE JOURNAL there was a letter from Dr. Irving S. Haynes, criticising the management because of the excessive number of papers on the program. We desire to state that this matter has received the careful attention of the present Committee and of the Committee of last year, and it is our constant endeavor to so limit the number of papers that there shall be an opportunity for full and free discussion.

Respectfully submitted,
(Signed) THOMAS J. HARRIS, Chairman.

Upon motion duly seconded and carried it was ordered received.

Dr. Charles H. Richardson for the Committee on Arrangements, reported progress, and stated that the Committee believe the Hotel Astor as a meeting place will prove satisfactory in every respect.

Upon motion duly seconded and carried, Dr. Richardson was authorized to purchase buttons for use at the meeting.

Dr. Van Cott for the Committee on Public Health, reported progress.

Dr. Banker, President of the Fourth District Branch, sent his resignation, to take effect at the close of the Annual Meeting. Moved, seconded and carried, that it be accepted to take effect at the date mentioned.

Dr. Richardson moved, at the request of the President, seconded and carried, that a Committee be appointed to consider the question as to whether the American Medical Directory republished for New York, New Jersey and Connecticut might be used to take the place of the present Directory published by the Medical Society of the State of New York.

The Chair appointed Drs. Richardson and Van Cott as the Committee.

There being no further business to come before the Council the meeting adjourned at 5 P. M.

WISNER R. TOWNSEND, Secretary.

DISTRICT BRANCHES

SECOND DISTRICT BRANCH.

ANNUAL MEETING, AT BROOKLYN, MONDAY, NOVEMBER 24, 1913.

The seventh annual meeting of the Second District Branch was held on Monday evening, November 24th, at the Kings County Medical Society Building. There were about 200 present. The minutes of the previous meeting were read and approved. A Nominating Com-

mittee, consisting of Drs. Chase, Gibson and Overton, reported as follows: President, James S. Cooley, Mineola; Vice-President, A. H. Terry, Patchogue; Secretary-Treasurer, Charles Eastmond, Brooklyn. The report was accepted and the above named declared duly elected.

The scientific program consisted of an address by Dr. Robert Abbé, of New York City, on "The Present Aspect of Radium Work," supplemented by plaster of Paris casts of cases treated by this method. Dr. Abbé spoke of, The source of radium; Its physical properties: Its effect upon animal structures; Its practical application in the benign and malignant conditions.

The discussion was opened by Dr. John O. Polak, followed by Drs. Paul M. Pilcher, Jacob Fuhs, Walter B. Chase and Henry H. Morton.

The discussion was closed by Dr. Abbé.

On motion of Dr. Cruikshank a unanimous vote of thanks was extended to Dr. Abbé.

COUNTY SOCIETIES.

BRONX COUNTY.

A meeting of the physicians resident in the Bronx belonging to the Medical Society of the State of New York, was held at Hunts Point Palace, on December 16, 1913.

The meeting was called to order at 9 P. M. by Dr. Loughran, who introduced President Campbell to the members present.

After a few congratulatory remarks on the formation of the new county and hopes for the future, the President ordered the Secretary to read the proclamation which had been issued calling the members together. The Secretary then read the following:

PROCLAMATION

Issued by

WILLIAM FRANCIS CAMPBELL, M.D.,

as President of the Medical Society of the State of New York.

The Legislature of the State of New York having established a county within the State of New York, designated as the county of the Bronx, and it appearing expedient that within the confines of such county there be established a County Society which shall be in affiliation with the Medical Society of the State of New York, and a committee having been appointed for the purpose of formulating a plan for the formation of such a County Society, and the report of such committee having been adopted by the Council of the Medical Society of the State of New York, on the 5th day of December, 1913.

I, as President of the Medical Society of the State of New York, hereby call a meeting of all members of the State Society, residing within the territory designated by the Act of the Legislature as circumscribing the territory of such county, to meet at Hunts Point Palace, 163d Street and Southern Boulevard, Borough of the Bronx, on Tuesday, the 16th day of December, 1913, at 8.30 o'clock in the evening of that day, for the purpose of forming a County Medical Society within such county, which organization shall be the representative organization of the State of New York within the county of the Bronx as designated by the Act of the Legislature of the State of New York.

I hereby direct the Secretary of the Medical Society of the State of New York to cause notice of this meeting, in conformity with this proclamation, to be sent forthwith to each and every member of the Medical Society of the State of New York, now residing within the area comprising said county of the Bronx.

Dated, New York, December 8, 1913.

WILLIAM FRANCIS CAMPBELL,
As President of the Medical Society of the State of New York.

The President introduced Mr. James Taylor Lewis, Counsel for the Medical Society of the State of New York, who briefly described the methods of procedure in the formation of a new County Medical Society. Several questions were asked the President and Counsel and duly answered.

Dr. Hurd moved, and it was duly seconded and carried, that a Committee of Three on Organization and Incorporation be appointed. The following members were appointed by the chair:

Drs. W. E. Howley, I. M. Heller and N. B. Van Etten.

Dr. Loughran moved, and it was duly seconded and carried, that a Committee of Three on Constitution and By-Laws be appointed. The following members were appointed by the chair:

Drs. F. W. Loughran, C. Wurm and M. Darvas.

Dr. Boyd moved, and it was duly seconded and carried, that a Committee of Fifteen on Nominations be appointed. The following members were appointed by the chair:

Drs. W. A. Boyd, E. F. Hurd, H. T. Radin, H. A. Dodin, F. Donlon, W. E. Howley, M. R. Bookman, E. P. Lasher, G. H. E. Starke, W. B. Allen, A. C. Palmateer, J. E. Virden, E. C. Podvin, E. Broquet, J. J. Smith.

Dr. Loughran moved, and it was duly seconded and carried, that a Committee of Five be appointed on Time and Place of Meeting. The following members were appointed by the chair:

Drs. Henry Roth, N. A. Craw, P. Dolan, F. C. Hargrave and J. H. Telfair.

The following registered as present and participated in the proceedings:

Drs. J. E. Virden, C. H. Smith, S. Schulhofer, A. T. Baker, I. M. Heller, W. L. Rost, F. Packer, J. J. Smith, E. C. Podvin, B. L. Schaeffer, W. S. Gardner, W. B. Allen, W. D. Steen, W. G. Eynon, W. E. Howley, E. W. Abramowitz, A. C. Palmateer, J. B. Talmage, S. C. Minor, W. H. Kahrs, M. Darvas, W. A. Randel, P. Eichler, I. Miller, M. Nisselson, J. Weiss, C. L. Ambos, N. A. Craw, W. D. Weil, J. Dillenberg, S. M. Jacobs, W. M. Dunning, E. F. Hurd, N. B. Van Etten, M. Kutscher, F. W. Laughran, H. T. Radin, M. R. Bookman, J. B. Cohen, P. M. Butterfield, C. Graef, J. Popper, E. Wilkins, F. L. Donlon, G. Starke, W. A. Boyd, M. Rosenbluth, M. B. Freid, A. Lightstone, M. M. Eckers, W. Cohn, T. H. Curtin, I. L. Nascher, B. S. Bickelhaupt, V. E. Quin, A. L. Barrett, M. N. Karash, J. A. Newson, W. A. Goodall, V. W. Anderson, J. Bondy.

Meeting adjourned at 10 P. M.

WISNER R. TOWNSEND,
Secretary.

MEDICAL SOCIETY OF THE COUNTY OF ERIE.

ANNUAL MEETING, MONDAY, DECEMBER 15TH, BUFFALO, N. Y.

The 92d annual meeting of the Medical Society of the County of Erie was held in the Library Building, Monday evening, December 15, 1913. President Whitwell presiding.

The minutes of the previous meeting and of the Council meetings were read and approved.

Five new members were elected and one accepted by transfer from the Monroe County Society.

President Whitwell appointed Drs. Kauffman and Phillips as tellers and Treasurer Lytle as clerk for the annual election.

President Whitwell called Vice-President Woodruff to the chair and then delivered his annual address.

Annual reports were submitted by the Board of Censors, through Dr. J. D. Bonnar; Committee on Public Health, through Dr. H. R. Hopkins; Committee on Psychopathic Hospital and Examination in Lunacy, through Dr. F. S. Crego; Committee on Collection of Accounts, through Dr. W. H. Thornton; by the Milk Commission, through Dr. Clayton W. Greene; Committee on Contract Practice, through Dr. Edward E. Haley, and the Annual report of the Treasurer, by Dr. A. T. Lytle.

The tellers then presented their report of the elec-

tion and the following officers were declared duly elected: President, John V. Woodruff; First Vice-President, Arthur W. Hurd; Second Vice-President, Franklin W. Barrows; Secretary, Franklin C. Gram; Treasurer, Albert T. Lytle. Censors: John D. Bonnar, Francis E. Fronczak, Arthur D. Bennett, Irving W. Potter and Archibald D. Carpenter. Chairman Committee on Legislation, F. Park Lewis. Chairman Committee on Public Health, Henry R. Hopkins. Chairman Committee on Membership, Grover W. Wende. Delegates to the State Society: Albert T. Lytle, Julius Ullman, Julius Richter and Franklin W. Barrows.

Dr. Whitwell then turned over the chair to the President-elect, Dr. Woodruff, who briefly thanked the Society for the honor conferred upon him, after which a rising vote of thanks was extended to retiring President Whitwell for the able manner in which he had presided during the past year.

The Council was requested to make arrangements for the visit in January of Dr. Witherspoon, President of the American Medical Association.

MEDICAL SOCIETY OF THE COUNTY OF CHEMUNG.

Annual Meeting, at Elmira, December 16, 1913.

BUSINESS SESSION.

Dr. C. F. Abbott, the Secretary, read a report which covered both the scientific and business work of the Society for the last year, as owing to the length of the program of the last annual meeting the Secretary's report had been omitted. Full statistics were given in regard to the new members, resignations and transfers, as well as a list of all the scientific papers presented at the meetings of the Society.

He also urged upon every member his duty to the County Society in assisting the Secretary to make the meetings successful by being willing to write papers and report cases. He asked every man to resolve that he would take his place in the work of the Society and make the coming year a banner year, thus benefitting himself as well as the Society.

The following officers were elected for the ensuing year: President, R. B. Lynn, Elmira; Vice-President, C. F. Abbott, Elmira; Secretary, C. L. Carey, Elmira; Treasurer, H. W. Fudge, Elmira. Censors: R. G. Loop, S. Voorhees, E. LeFevre.

SCIENTIFIC PROGRAM.

"Prolapse of the Uterus," N. H. Soble, M.D.
"Medical Economics," R. G. Loop, M.D.
"Glaucoma," C. L. Carey, M.D.
"Some Personal Observations on Small-pox," F. B. Parke, M.D.

CHENANGO COUNTY MEDICAL SOCIETY.

Annual Meeting, at Norwich, December 9, 1913.

The one hundred and ninth annual meeting was held at the Court House, on Tuesday, December 9th. The following officers were elected for the ensuing year: President, John T. Hand, New Berlin; Vice-President, Edward Danforth, Bainbridge; Secretary, Paul B. Brooks, Norwich; Treasurer, J. B. Drake, Norwich, Censor: D. A. Gleason, Oxford. The following committees were appointed: On Public Health, Paul B. Brooks, Chairman; A. R. Morse, Edwin F. Gibson; on Legislation, D. A. Gleason, Chairman; J. V. Jacobs, Albert H. Evans.

The following resolutions were adopted, urging that the publication of the Directory annually be suspended in favor of a biennial publication, and that the funds thus made available be used for other needs of the State Society; urging that the State Society find ways and means for taking up the prosecution of illegal practitioners, that the House of Delegates be urged to take some formal steps in this direction, and that the Chenango County Society pledge itself to aid in every way possible in procuring evidence and prosecuting such cases; commending the Board of Supervisors of Chenango County on their favorable action on the question of establishing a county tuberculosis hospital.

Dr. Edwin Gibson was appointed chairman of the County Medical Library Committee, and the Committee asked to formulate plans for making the medical library available to the physicians of the county.

The State Hospital Commission and physicians of the Binghamton State Hospital for the Insane were voted a note of appreciation for their plans for extending the usefulness of the state hospitals and assurance of a desire on the part of Chenango County physicians to co-operate with them.

It was voted to hold the next semi-annual meeting in June at Brackett Lake, upon invitation of the physicians of Afton and Bainbridge.

SCIENTIFIC SESSION.

"The Use of Forceps in Transverse Presentation," T. B. Fernalld.
"Vaccines," Fred R. Ford, Utica.
"Colles' Fracture," Charles H. Baldwin, Utica.

MEDICAL SOCIETY OF THE COUNTY OF WYOMING.

Annual Meeting, Warsaw, October 14, 1913.

The following officers were elected for the year 1914: President, Wallace J. French, Pike; Vice-President, W. Ross Thomson, Warsaw; Secretary-Treasurer, L. Hayden Humphrey, Silver Springs. Censors: M. J. Wilson, George S. Skiff, Mary T. Greene. Delegate to State Society Meeting, Lyman C. Broughton, Castile.

Dr. Roswell Park, of Buffalo, gave an exceedingly interesting talk on "Radium and Radio-Activity."

Dr. DeWitt H. Sherman read a paper entitled, "A Discussion of a Few Drugs Used in Obstetrics, Especially with Reference to the Infant."

On invitation from Dr. Greene, it was voted to hold the January meeting at the Castile Sanitarium, Castile, N. Y.

MEDICAL SOCIETY OF THE COUNTY OF ST. LAWRENCE.

Annual Meeting at Ogdensburg, October 7, 1913.

BUSINESS SESSION.

The following officers were elected for the ensuing year: President, Charles D. Laidlaw, Canton; Vice-President, Richard H. Hutchings, Ogdensburg; Secretary, Samuel W. Close, Gouverneur; Treasurer, Andrew H. Allen, Gouverneur.

The President appointed a committee to make a canvass for new members and send to every physician in the county a circular setting forth the advantages of membership. The following were appointed: Drs. W. B. Hanbidge, S. W. Sayer, F. J. Fuller, F. D. Allen, E. C. Elkins and W. C. Smith.

MEDICAL SOCIETY OF THE COUNTY OF ALBANY.

Regular Meeting at Albany, December 17, 1913.

SCIENTIFIC PROGRAM.

"The Parotid Gland, Its Surgery and Pathology," Dr. G. G. Lempe.
"Atypical Diphtheria," Dr. E. E. Hinman.

MEDICAL SOCIETY OF THE COUNTY OF SCHENECTADY.

Annual Meeting. December 9, 1913.

The following officers were elected for the ensuing year: President, Lester Betts, Schenectady; Vice-President, Edward S. Vass, Schenectady; Secretary, Harvey P. Groesbeck, Schenectady; Treasurer, Garrett V. Johnson, Schenectady. Delegate State Society: F. C. Reed, Schenectady; Alternate, L. Betts, Schenectady. Delegate Fourth District Branch: N. A. Pashayan, Schenectady; Alternate, W. B. Stone, Schenectady.

MEDICAL SOCIETY OF THE COUNTY OF CHAUTAUQUA.

ANNUAL MEETING, TUESDAY, DECEMBER 9, 1913, AT DUNKIRK.

The annual meeting was held at the Hotel Gratiot, Tuesday, December 9, 1913.

The meeting was called to order at 11 o'clock and the following officers were elected for the ensuing year: President, G. F. Smith, Falconer; First Vice-President, F. C. Rice, Ripley; Second Vice-President, A. W. Dods, Fredonia; Secretary and Treasurer, J. W. Morris, Jamestown.

SCIENTIFIC SESSION.

President's Address, "The Functions of a County Medical Society," N. G. Richmond, M.D., Fredonia.

"Hyperchlorhydria, a Paradoxical Disease," A. L. Benedict, M.D., Buffalo.

"Mouth Breathing and its Correction," H. S. Reged, M.D., Jamestown.

"The Pituitary Bodies," W. J. Sullivan, M.D., Dunkirk.

LEGISLATIVE NOTES.

SENATE.

The Committee on Legislation herewith presents the lists of members of the Senate and Assembly for the year 1914. Members of the Society can refer to this list at any time that it may seem advisable to write to their Assemblymen or Senators in regard to legislative matters and all are requested to look it over so that if among those represented there are any men known to them personally they can write them, if requested by the Committee on Legislation to assist or oppose any bills before the Legislature.

In the next issue of the JOURNAL it is hoped to be able to print the Committees, which had not been appointed when this issue went to press.

R. F. Wagner, Act. Lieut.-Gov. and Pres of Senate Albany. Home P. O., 51 Chambers, Manhattan.

1. Thomas H. O'Keefe, D., Oyster Bay.
2. Bernard M. Patten, D., 151 Elm, L. I. City.

BROOKLYN.

3. *Thomas H. Cullen, D., 256 President.
4. Henry P. Velte, D., 256 Hewes.
5. William J. Heffernan, D., 594 4th Avenue.
6. William B. Carswell, D., 121 St. Mark's Avenue.
7. Daniel J. Carroll, D., 135 N. 3d.
8. *James F. Duhamel, I. D., 202 Bay 28th.
9. *Felix J. Sanner, D., 58 Bremen.
10. Herman H. Torborg, D., 1043 Liberty Avenue.

MANHATTAN.

11. *Christopher D. Sullivan, D., 61 Chambers.
12. John C. Fitzgerald, D., 175 2d Avenue.
13. *James D. McClelland, D., 43 Barrow.
14. James A. Foley, D., 261 Broadway.
15. John J. Boylan, D., 402 W. 51st.
16. *Robert F. Wagner, D., 51 Chambers.
17. Walter R. Herrick, D., 115 Broadway.
18. *Henry W. Pollock, D., 541 W. 113th.
19. Geo. W. Simpson, D., 51 Chambers.
20. *James J. Frawley, D., 51 E. 96th.
21. John Davidson, D., 638 E. 227th.
22. Anthony J. Griffin, D., 891 Gauldwell Avenue.

STATE.

23. George A. Blauvelt, D., Monsey.
24. John F. Healy, D., New Rochelle.
25. John D. Stivers, R., Middletown.
26. Jas. E. Towner, R., Towners.
27. Abraham J. Palmer, Pro. and R., Milton.
28. *Henry M. Sage, R., Menands.
29. John W. McKnight, D., Castleton.
30. George H. Whitney, R., Mechanicville.
31. *Loren H. White, D., Delanson.
32. *Seth G. Heacock, R., Ilion.
33. *James A. Emerson, R., Warrensburgh.
34. *Herbert P. Coats, R., Saranac Lake.
35. Elon R. Brown, R., Watertown.
36. William D. Peckham, D., Utica.
37. *Ralph W. Thomas, R., Hamilton.
38. *J. Henry Walters, R., Syracuse.
39. Clayton L. Wheeler, D., Hancock.
40. *Charles J. Hewitt, R., Locke.
41. *John F. Murtaugh, D., Elmira.
42. Thomas B. Wilson, R., Hall.
43 John Seeley, D., Woodhull.
44. *Thomas H. Bussey, R., Perry.
45. *George F. Argetsinger, R., Rochester.
46. *William L. Ormrod, R., Churchville.
47. George F. Thompson, R., Middleport.
48. John F. Malone, D., Buffalo.
49. *Samuel J. Ramsperger, D., Buffalo.
50. Gottfried H. Wende, D., Buffalo.
51. Frank N. Godfrey, R., Olean.

* Re-elected.

RECAPITULATION.

Democrats	32
Republicans	17
Independent Democrat	1
Progressive Republican	1
Total	51

ASSEMBLY.

ALBANY.

1. *H. J. Hinman, R., Albany.
2. *J. G. Malone, R., Albany.
3. *W. C. Baxter, R., Watervliet.

ALLEGANY.

E. E. Ferry, R., Almond.

BROOME.

S. P. Quick, R., Windsor.

CATTARAUGUS.

*C. Willard, D., Allegany.

CAYUGA.

C. H. Springer, R., Moravia.

CHAUTAQUA.

1. A. M. Cheney, R., Ellery.
2. *J. L. Sullivan, R., Dunkirk.

CHEMUNG.

W. E. Knapp, R., Elmira.

CHENANGO.

S. A. Jones, R., Norwich.

CLINTON.

A. W. Fairbank, R., Chazy.

COLUMBIA.

*A. W. Hoover, D., Germantown.

CORTLAND.

N. F. Webb, R., Cortland.

DELAWARE.

E. A. Mackey, R., Franklin.

DUTCHESS.

1. C. W. Garrison, Pro., New Hackensack.
2. M. G. Dubois, R., Poughkeepsie.

ERIE.

1. W. H. Warhus, D., Buffalo.
2. *C. T. Horton, R., Buffalo.
3. *A. F. Geyer, D., Buffalo.
4. P. W. Quigley, R., Buffalo.
5. *R. F. Hearn, D., Buffalo.
6. L. F. Tucholka, D., Buffalo.
7. W. P. Gremier, D., Cheektowaga.
8. W. Thayer, Pro., Buffalo.
9. F. Bret Thorn, R., Orchard Park.

ESSEX.

R. T. Kenyon, R., Ausable Forks.

FRANKLIN.

*A. MacDonald, R., St. Regis Falls.

FULTON AND HAMILTON.
*J. H. Wood, R., Gloversville.

GENESEE.
Louis H. Wells, R., Pavilion.

GREENE.
G. H. Chase, R., Jewett.

HERKIMER.
F. W. Cristman, R., Herkimer.

JEFFERSON.
1. *H. E. Machold, R., Ellisburg.
2. *J. G. Jones, R., Carthage.

KINGS (BROOKLYN BOROUGH).
1. R. H. McQuistion, R., 162 Montague.
2. *W. D. Gillen, D., 12 Vanderbilt Avenue.
3. *F. J. Taylor, D., 50 Van Dyke.
4. G. Langhorst, R., 133 Rutledge.
5. C. C. Lockwood, R., 954 Greene Avenue.
6. G. H. Ittleman, Pro., 611 Willoughby Avenue.
7. *D. F. Farrell, D., 378 17th.
8. *J. J. McKeon, D., 413 Smith.
9. W. J. McRoberts, Pro., 67th and Sedgwick pl.
10. F. M. Ahern, R., 425 Sterling Place.
11. G. R. Brennan, R., 473 Park Place.
12. W. T. Simpson, R., 523 5th Avenue.
13. H. Kramer, D., 16 Bushwick Avenue.
14. J. P. LaFrenz, R., 65 Java.
15. J. T. Phelan, D., 98 N. Henry.
16. S. R. Green, R., 1437 45th.
17. A. W. Burlingame, Jr., R., 96 Hancock.
18. A. W. Hoff, R., 460 Stratford Road.
19. H. Scheidemann, Pro., 24 St. Nicholas Avenue.
20. A. C. Flamman, R., 1135 Lafayette Avenue.
21. H. C. Karpen, Pro., 584 Broadway.
22. E. R. W. Karutz, R., 308 Cornelia.
23. W. F. Mathewson, R., 41 Granite.

LEWIS.
H. L. Grant, R., Copenhagen.

LIVINGSTON.
*E. M. Magee, R., Groveland.

MADISON.
*M. E. Tallett, R., DeRuyter.

MONROE.
1. H. B. Warner, Pro., Rochester.
2. *S. L. Adler, R., Rochester.
3. G. Ritz, D., Rochester.
4. *C. W. Phillips, R., Rochester.
5. *C. Gallup, D., Adams Basin.

MONTGOMERY.
*W. A. Gage, R., Canajoharie.

NASSAU.
L. J. Weed, Pro., Garden City.

NEW YORK (MANHATTAN BOROUGH).
1. *T. B. Caughlan, D., 81 Varick.
2. *A. E. Smith, D., 25 Oliver.
3. J. B. Golden, D., 112 E. 12th.
4. H. S. Schimmel, D., 432 Grand.
5. *J. J. Walker, D., 6 St. Luke's Place.
6. W. Sulzer, Pro., 673 Broadway.
7. *P. P. McElligott, D., 428 W. 24th.
8. *S. Sufrin, (R.), Pro., 107 Rivington.
9. *C. D. Donoghue, D., 408 W. 43d.
10. L. Bleecker (R.), Pro., 31 First.
11. *J. Kerrigan, D., 342 W. 47th.
12. *J. D. Kelly, D., 223 E. 17th.
13. *J. C. Campbell, D., 857 10th Avenue.
14. *R. L. Tudor, D., 157 Lexington Avenue.
15. A. Ellenbogen, R., 137 W. 86th.
16. *M. G. McCue, D., 734 3d Avenue.
17. *M. Eisner (P.), D., 149 Manhattan Avenue.
18. *M. Goldberg, D., 222 E. 72d.
19. A. F. Murray, Pro., 304 W. 109th.
20. *P. J. McGrath, D., 300 E. 81st.
21. D. Nelson, R., 245 W. 137th.
22. B. E. Moore (R.), Pro., 1662 First Avenue.
23. S. Clinton Crane, R., 825 W. 180th.
24. *O. M. Kiernen, D., 163 E. 89th.
25. F. R. Stoddard, Jr., R., 102 Waverley Place.
26. *A. Greenberg, D., 1210 5th Avenue.
27. S. M. Meyer (R.), Pro., 148 E. 36th.
28. G. E. Findlater (R.), Pro., 131 E. 116th.
29. H. Conkling, R., 157 E. 70th.
30. E. S. Boylston, (P.), Ind., 407 E. 122d.
31. *M. Schaap, Pro., 2041 5th Avenue (Bronx).
32. L. P. Grimier, R., 813 Faile.
33. *T. J. Lane, D., 535 St. Ann's Avenue.
34. O. Henschel, Pro., 810 Ritter Place.
35. H. D. Patton (R.), Pro., 2470 Webb Avenue.

NIAGARA.
1. W. Bewley, R., Lockport.
2. J. W. Williams, D., La Salle.

ONEIDA.
1. *F. F. Emden, D., Utica.
2. C. J. Fuess, R., Utica.
3. *J. B. Fuller, R., Stittville.

ONONDAGA.
1. E. Arnts, R., Syracuse.
2. G. M. Haight, D., Onondaga.
3. J. Buechler, R., Syracuse.

ONTARIO.
H. E. Wheeler, R., E. Bloomfield.

ORANGE.
1. J. B. Montgomery, R., Newburgh.
2. C. J. Boyd, R., Middletown.

ORLEANS.
C. P. Wright (P.), D., Albion.

OSWEGO.
*T. C. Sweet, R., Phoenix.

OTSEGO.
G. L. Bockes, R., Oneonta.

PUTNAM.
H. Fish, Jr., (D.), Pro., Garrison.

QUEENS.
1. N. Nehrbauer, Jr., D., 581 9th Aveune., L. I. City.
2. P. J. McGarry, D., 71 Greenpoint Avenue, L. I. City.
3. C. Garbe, R., 33 Snedeker Avenue, Woodhaven.
4. J. Suydam Eadie (P.), R., 24 N. Parsons Ave.,

RENSSELAER.
1. *C. F. Schwarz, D., Troy.
2. *T. D. Taylor, D., Berlin.

RICHMOND.
C. D. VanName, D., Mariners Harbor.

ROCKLAND.
B. C. Dunlop (R.), Pro., Spring Valley.

ST. LAWRENCE.
1. *F. A. Seaker, R., Gouverneur.
2. *J. A. Smith, R., N. Lawrence.

SARATOGA.
*G. T. Seelye, R., Burnt Hills.

SCHENECTADY.
*A. P. Squire (P.), Rotterdam Jct.

SCHOHARIE.
*E. A. Dox (P.), D., Richmondville.

SCHUYLER.
H. S. Howard (P.), R., Watkins.

SENECA.
W. J. Maier, R., Seneca Falls.

STEUBEN.
1. *C. A. Brewster, D., Addison.
2. *J. L. Seeley, Jr., D., Canisteo.

SUFFOLK.
1. D. C. Talmage, R., East Hampton.
2. H. A. Murphy, R., Huntington, L. I.

SULLIVAN.
G. H. Smith, D., Montecillo.

TIOGA.
W. S. Moore, R., Candor.

TOMPKINS.
J. W. Preswick (P.), R., Ithaca.

ULSTER.
1. H. R. DeWitt, R., Kingston.
2. A. LeFevre, R., New Paltz.

WARREN.
*H. E. H. Brereton, R., Diamond Point.

WASHINGTON.
C. O. Pratt, R., Cambridge.

WAYNE.
R. A. Wilson, R., Savannah.

WESTCHESTER.
1. G. Blakely, R., Yonkers.
2. A. L. Martin (P.), D., Mt. Vernon.
3. W. W. Law, Jr., R., Ossining.
4. F. D. Hopkins, R., White Plains.

WYOMING.
*J. Knight, R., Arcade.

YATES.
*E. C. Gillett, R., Penn Yan.

RECAPITULATION.

Republicans	81
Democrats	48
Progressives	20
Independent	1
Total	150

* Re-elected.

BOOKS RECEIVED.

MENINGOCOCCUS MENINGITIS. By HENRY HEIMAN, M.D., Professor Pediatrics, N. Y. Polyclinic School and Hospital: Associate Attending Pediatrist, Mount Sinai Hospital, New York, and SAMUEL FELDSTEIN, M.D., Lecturer Pediatrics, N. Y. Polyclinic School and Hospital, Chief Children's Department, Mount Sinai Dispensary, New York, with introduction by HENRY KOPLIK, M.D., Chief of Service, Mount Sinai Hospital, New York. With 4 plates, 31 figures, 2 in color, and 4 charts. Philadelphia and London. J. B. Lippincott Company. Price $2.50.

INTERNATIONAL CLINICS. By leading members of the medical profession throughout the world. Volume IV, twenty-third series. Philadelphia and London. J. B. Lippincott Company. Price $2.00.

THE MEDICAL AND SANITARY INSPECTION OF SCHOOLS. By S. W. NEWMAYER, A.B., M.D., in charge of the Division of Child Hygiene, Bureau of Health, Philadelphia. 12mo, 318 pages, with 71 engravings and 14 full-page plates. Lea & Febiger, Publishers. Philadelphia and New York, 1913. Cloth, $2.50 net.

DORLAND'S AMERICAN POCKET MEDICAL DICTIONARY. Edited by W. A. NEWMAN DORLAND, M.D., editor "American Illustrated Medical Dictionary." Eighth edition, revised and enlarged. 32mo of 677 pages. Philadelphia and London. W. B. Saunders Company, 1913. Flexible leather, gold edges, $1.00 net; thumb index, $1.25 net.

PRINCIPLES OF SURGERY. By W. A. BRYAN, A.M., M.D., Professor of Surgery and Clinical Surgery at Vanderbilt University, Nashville, Tennessee. Octavo of 677 pages with 224 original illustrations. Philadelphia and London: W. B. Saunders Company, 1913. Cloth, $4.00 net.

THE HISTORY OF MEDICINE. With Medical Chronology, Bibliographic Data, and Test Questions. By FIELDING H. GARRISON, A.B., Principal Assistant, Librarian Surgeon-General's Office, Washington, D. C., Editor of the *Index Medicus*. Octavo of 677 pages, many portraits. Philadelphia and London: W. B. Saunders Company, 1913. Cloth, $6.00, net. Half-Morocco, $7.50 net.

A TEXT-BOOK OF PHYSIOLOGY: FOR MEDICAL STUDENTS AND PHYSICIANS. By WILLIAM H. HOWELL, Ph.D., M.D., Professor of Physiology, Johns Hopkins University, Baltimore. Fifth edition, thoroughly revised. Octavo of 1,020 pages, fully illustrated. Philadelphia and London: W. B. Saunders Company, 1913. Cloth, $4.00 net. Half-Morocco, $5.50 net.

A TEXT-BOOK OF THE PRACTICE OF MEDICINE. By JAMES M. ANDERS, M.D., Ph.D., LL.D., Professor of Medicine and Clinical Medicine, Medico-Chirurgical College, Philadelphia. Eleventh edition, thoroughly revised. Octavo of 1,335 pages, fully illustrated. Philadelphia and London: W. B. Saunders Company, 1913. Cloth, $5.50, net. Half-Morocco, $7.00 net.

THE TONSILS AND THE VOICE, IN SCIENCE, SURGERY, SPEECH AND SONG. By RICHARD B. FAULKNER. The Presbyterian Book Store, Pittsburgh, Pa. Price, $2.00 net. Four hundred pages. Illustrated. Cloth DeLuxe.

MEDICAL RESEARCH AND EDUCATION. By RICHARD M. PEARCE, the University of Pennsylvania; WILLIAM H. WELCH, W. H. HOWELL, FRANKLIN P. MALL, LEWELLYS F. BAKER, the Johns Hopkins University; CHARLES S. MINOT, W. B. CANNON, W. T. COUNCILMAN, THEOBOLD SMITH, Harvard University; G. N. STEWART, Western Reserve University; C. M. JACKSON, E. P. LYON, University of Minnesota; JAMES B. HERRICK, Rush Medical College; JOHN M. DOBSON, University of Chicago; C. R. BARDEEN, University of Wisconsin; W. OPHULS, Stanford University; S. J. MELTZER, Rockefeller Institute for Medical Research; JAMES EWING, Cornell University Medical College; W. W. KEEN, Jefferson Medical College; HENRY H. DONALDSON, Wistar Institute of Anatomy; the late C. A. HERTER, Columbia University; the late HENRY P. BOWDITCH, Harvard University. The Science Press, New York and Garrison, N. Y., 1913.

HAIR, ITS NATURE, GROWTH AND MOST COMMON AFFECTIONS, WITH HYGIENIC RULES FOR ITS PRESERVATION. By RICHARD W. MÜLLER, M.D. New York: William R. Jenkins Company, Publishers, Sixth Avenue and 48th Street.

E. MERCK'S ANNUAL REPORT OF RECENT ADVANCES IN PHARMACEUTICAL CHEMISTRY AND THERAPEUTICS. 1912, Volume XXVI. E. Merck, Chemical Works, Darmstadt, 1913.

GENITO-URINARY DISEASES AND SYPHILIS. By EDGAR G. BALLENGER, M.D., Adjunct Clinical Professor of Genito-Urinary Diseases, Atlanta Medical College; Editor, *Journal-Record of Medicine;* Urologist to Westley Memorial Hospital; Genito-Urinary Surgeon to Davis-Fisher Sanatorium; Urologist to Hospital ofr Nervous Diseases, etc., Atlanta, Ga., assisted by OMAR F. ELDER, M.D. The Wassermann Reaction, by EDGAR PAULLIN, M.D. Second edition, revised. 527 pages, with 109 illustrations and 5 colored plates. Price, $5.00 net. E. W. Allen & Co., Atlanta, Ga.

DEATHS.

WILLIAM C. BARTRAM, M.D., Newburgh, died December 16, 1913.

FREDERICK C. BUSCH, M.D., Buffalo, died January 3, 1914.

EDGAR M. HERMANCE, M.D., Yonkers, died December 22, 1913.

ALFRED E. M. PURDY, M.D., New York City, died December 25, 1913.

MORTIMER H. TAPLIN, M.D., Rochester, died 1913.

GARY H. WOOD, M.D., Antwerp, died December 18, 1913.

NEW YORK STATE JOURNAL OF MEDICINE

A Journal Devoted to the Interests of the Medical Society of the State of New York

JOHN COWELL MAC EVITT, M.D., Editor

Business and Editorial Offices: 17 West 43d Street, New York, U. S. A.
Address Journals sent in Exchange to 1313 Bedford Avenue, Brooklyn, N. Y., U. S. A.

Vol. XIV. FEBRUARY, 1914 No. 2

EDITORIAL DEPARTMENT

THE RELATION OF THE JOURNAL TO ITS ADVERTISERS.

THE cost of publishing a JOURNAL is the financial rock upon which so many are wrecked.

The two principal sources of revenue of a publication are derived from its circulation and advertisements, principally the latter, which depends to a great degree upon the former.

The art of advertising has reached such a degree of perfection, or imperfection if you will, that there exists a certain serpent-like fascination in specious claims made for proprietary compounds, that we, no stronger than poor old Adam, bite at the apple. However, the Publication Committee investigates the claims of every advertisement admitted to the columns of the JOURNAL, and as all the pharmaceutical preparations advertised in the JOURNAL are endorsed by the American Medical Association, we commend them to your consideration, not only to your consideration but suggest that in your correspondence with the advertiser you will mention the fact that it was through the medium of the JOURNAL that your attention was called to the advertisement in question. You know that in the multiple and varied duties which fall to our lot, we are inclined to escape from the annoyance of the less important ones which do not demand our immediate and personal attention.

With the very best intentions in the world we permit opportunities to pass by, which, if seized, would be of signal assistance to some worthy project in which we are not entirely disinterested.

Desirous of publishing the JOURNAL with as little expense to the Society as possible, the JOURNAL opened its columns to advertisements of special merit, therefore we have no hesitation in asking you to harken to the foregoing appeal. Advertisers look not only for good results but want to know from where they come.

The NEW YORK STATE JOURNAL OF MEDICINE has a circulation of between eight and nine thousand copies, distributed almost exclusively among physicians living within the confines of the state. One would infer that they would form a desirable personnel to be reached by advertisers, particularly so if the advertisers knew of the

discriminating character of the Journal and the reliance placed in its judgment by its readers.

This is recognized by those whose announcements appeal to the needs of the medical profession, but we should receive recognition from other sources. The larger class of advertisers, composed of merchants dealing in the ordinary requirements of life, miss an opportunity in reaching a desirable class of readers, and in demanding a large circulation in contradistinction to the character of our subscribers. It may interest you to know that if the Journal did not insist upon maintaining the highest degree of ethical righteousness in admitting advertisements to its pages it could place itself upon a profitable and independent financial basis.

In this respect we desire to express our sympathy with, and admiration for, the warfare the *Journal of the American Medical Association* has so courageously and persistently waged against quack nostrums and their exploitations fortified by the investigation of the Council on Pharmacy and Chemistry. Furthermore, we feel it should be sustained by medical journals irrespective of affiliation in its policy of rescuing the afflicted from being fooled into the purchase of so-called cures which if they do not insidiously destroy life, rob the unfortunate of their last penny. The merciless and remorseless purveyor of cancer and consumption nostrums deserve no less punishment than some retired spot in the nethermost depths of Tartarus.

THE SIMULTANEOUS PUBLICATION OF PAPERS WITH OTHER JOURNALS.

A FEW words regarding the simultaneous publication of its papers with other journals. To this arrangement the Journal wishes in every way to be accommodating and yet maintains that when the selected Journal does not appear on the same date, the earlier date of publication should be graciously accorded to the New York State Journal of Medicine. Monthly publications as a rule appear on or about the first day of the month, and weekly publications on various dates during the week, your Journal on the 15th day of the month. From this you can readily perceive the difficulty of producing a simultaneous publication. After its appearance in the Journal, the Journal will do everything in its power to facilitate the earliest possible publication in any other desired journal. This rule has been adopted, we hold on tenable grounds. It is possible, as it has been done, for representatives of other journals in attendance at the meetings of the Medical Society of the State of New York, to select the best papers and secure permission from their authors for their simultaneous publication with the State Journal. This results in considerable correspondence, sometimes ending in—oh, nothing more than a little dissatisfaction. This can be avoided by the authors of papers giving no promises, permitting the matter to rest with the Journal, with the assurance of its cheerful co-operation with any designated publication for as early a subsequent publication as possible. Authors who feel this a hardship should not ask for a place in a Section, but leave room for others interested in the success of their own Journal.

CONTRIBUTIONS TO THE JOURNAL.

HERE it is not inappropriate to refer to the character of the papers received for publication. Some few of them, speaking now in a textual and literary sense, are above criticism, the subject matter and composition excellent, and requiring but little editing. Some require considerable editing and some few would require rewriting to be worthy of acceptance. Chiefly at fault are the manuscripts of the discussions. It is difficult even for many thoroughly well posted men, to think or express their thoughts while engaged in public discussion. or, as we would say colloquially "on their feet." In speaking they become self-conscious,

the sequences of their ideas vanish, and in an effort to regain them their expressions become confused. If printed as expressed they would not be recognized by those who gave them utterance. A few moments devoted to a review of the stenographic proof before submitting it for publication would remedy the defect mentioned. It is oftentimes impossible for the editor to grasp the ideas the speakers wish to convey.

In time past, considerable dissatisfaction arose from having papers edited and published without submitting the proof to the writers for their inspection. The present custom is to edit all contributions, have the printer's proof without further change sent direct to the authors for final correction. The marginal queries you sometimes find accompanying the proof are made, and properly so, by the conscientious printer. We simply mention this fact to escape criticism of undue stupidity—we regret the possession of a sufficient amount by reason of endowment.

OUR COMING MEETING.

THIS issue of the JOURNAL contains the preliminary program of the Annual Meeting. The attention of the members of the state Society is invited to its perusal. It represents a number of radical departures.

The Annual Meeting of the Society will be held in New York City for the first time. Taking advantage of this fact, and of the generally expressed desire for a program of a practical nature, the committee has planned this year for a combined literary and clinical meeting. Without abandoning in the least the section-feature, which for the last two years has been such a success, it is proposed this year to limit the number of the literary sessions of the sections to three, the afternoon of the first day and the mornings of the second and third. The number of papers has been greatly reduced in order to afford time for full and free discussion. Upon the afternoons of the second and third days (Wednesday and Thursday) there will be clinics given in the various hospitals of the Boroughs of Manhattan and Brookyn, to demonstrate, as far as possible, the papers read in the morning.

The subjects selected for the papers have been chosen with much care. It is felt that what is desired is not a presentation of exceedingly unusual cases and operations, but rather a consideration and demonstration of those subjects that the medical practitioner is most often called upon to treat.

The formal meeting of the Society will conclude with the clinical session on Thursday afternoon. In order to round out the week, however, and to make the visit to New York of the out-of-town members of the Society additionally valuable, the committee is arranging for a series of interesting clinics to be given in the various hospitals of the city on Friday and Saturday. Due announcements of these and of the operators will be given at the time of the meeting.

The headquarters of the Society will be at the Hotel Astor. Ample accommodations have been secured there for the several sections. This, it is felt, will be of decided advantage, inasmuch as it will avoid the time and labor consumed in going from one meeting place to another.

The members of the Society are urged to set aside the last week in April. It is the confident hope of the committee that the new departures will receive the approval of the members of the State Society.

THOMAS J. HARRIS, *Chairman,*
Committee on Scientific Work.

Original Articles

CAMPHOR IN PNEUMONIA.*

By WILLIAM J. CRUIKSHANK, M.D.,
BROOKLYN, N. Y.

IT was John Bunyan who applied the phrase, "Captain of the Men of Death," to consumption of the lungs. Sir William Osler has transferred that sinister title to pneumonia and the figures he cites justify him almost beyond the realization of the average physician. These mortality records, running as they do from the middle of the 19th century down to 1913, remain practically unchanged. As late as 1912, in discussing the mortality of pneumonia, Osler says, "The statistics of my clinic at the Johns Hopkins Hospital from 1889 to 1905 have been analyzed by Chatard. There were 658 cases with 200 deaths, a mortality of 30.4 per cent. Excluding 35 cases of terminal pneumonia, the percentage is 26.4 per cent. Greenwood and Candy, in a study of the pneumonia statistics at the London Hospital from 1854 to 1903, a total of 5,097 cases, conclude that the fatality of the disease has not appreciably changed in this period. In comparing the collected figures of these authors with those from other institutions there is an extraordinary uniformity in the mortality ratio. Between the ages of 21 and 30 the mortality is everywhere about 20 per cent.; between the ages of 31 and 40, 30 per cent.; and then after each decade it rises until above the age of 60 more than one-half of the persons attacked die." In private practice, for obvious reasons, the mortality rate is not as high as it is in our institutions, nevertheless, even there the records are at times surprisingly high. For example, Osler quotes Goodhart as having 35 deaths in 120 cases.

By these figures, which Osler's investigations prove to be fairly representative, we are constrained to the conclusion that fifty years of orthodox expectancy in the treatment of pneumonia has accomplished nothing toward reducing its mortality.

While it is true that recent scientific achievement justifies the hope that pneumococcic infections will finally yield to serum or vaccine therapy, the matter is still in the experimental stage. The splendid work in that direction done by Römer is encouraging and the investigations of Rosenow, Pässler, Erlich, Wright, Lamar, the Klemperer brothers, Flexner, Cole and others most interesting, but up to the present time neither serum nor vaccine therapy has accomplished anything definite in the treatment of true pneumonia. Contrasting this with the results obtained by chemiotherapy, the experience of Seibert and his followers in the treatment of this disease by the hypodermic administration of large doses of camphor is worthy the attention of the medical world. This is especially true because Seibert's method is based upon trustworthy biologic experimentation preceded and supplemented by accurate and varied clinical observation. It is, therefore, both rational and scientific. For these reasons its continued practical application should be the means of crediting our profession with far better results in the treatment of severe pneumococcic toxemias than can possibly obtain by a further blind adherence to the orthodox and traditional expectant plan, fortified though it may be by controlling therapeutic and medical authority. Indeed, it is because I believe that the remedy suggested by Seibert for the treatment of pneumococcic pneumonia approaches very near to specificity that I have taken the liberty of recalling to your minds his observations, and of adding a few words concerning their history.

For what is known of camphor and its effects upon the pneumococcus we are indebted to Dr. August Seibert, professor of pediatrics in the New York Polyclinic. From his article entitled "Camphor and Pneumococci," which appeared in *The Medical Record* bearing the date April 20, 1912, I beg to quote the following: "The first attempt to reduce the vitality of the pneumococci in the blood of a patient by introducing large doses of camphor was made by the author in September, 1906, in the case of a young woman brought to St. Francis Hospital on the third day after the initial chill with the symptoms of severe toxemia." An examination of this patient by Dr. Seibert revealed a double pneumonia, both lower lobes being involved. Her temperature was 105.5, pulse 130, respiration 40 and she was unconscious. "An extended experience (since 1899) with the action of camphoric acid in influenzal infections," says the author, "suggested the use of large doses of camphor in this desperate case and so 12 c. c. (instead of one or two c. c. used till then for stimulating purposes) of the 20 per cent. camphorated oil was injected hypodermically every twelve hours, resulting in gradual improvement and recovery by the fourth day without crisis." Following this, in like manner, Dr. Seibert treated thirty-six additional cases of pneumococcic pneumonia, injecting 12 c. c. of the 20 per cent. camphorated oil every 12 hours in adult cases, while in children, the youngest treated being four years of age, 6 c. c. were used. This plan was pursued with every patient, regardless of the intensity of the toxemia and of the extent of pulmonary tissue involved. All of these thirty-six patients recovered except one. The fatal case was that of a man sixty-eight years of age, weighing two hundred pounds, who had a fatty heart. The pneumonic process involved both lower lobes, producing profound toxemia and copious bloody sputum.

In discussing the fatal issue in this case Dr. Seibert says, "Although early camphor injections had the usual good effects on the sensorium, the temperature and the respiration, his flabby heart

* Read before the Brooklyn Medical Society, November 21, 1913.

began to give out on the fifth day, resulting in pulmonary edema on the sixth."

Here, then, is a unique and interesting story of thirty-six cases of pneumococcic pneumonia. The record shows not only a practical one hundred per cent. recoveries but an analysis of it will demonstrate that these recoveries may, in all reasonable certainty, be attributed to the action of the camphor. In proof of this statement and for the purpose of emphasis, permit me to quote Dr. Seibert's exact words bearing upon the matter: "These camphor injections invariably reduced the toxemia gradually until practically normal conditions were reached three or four days after the first injection, while the alveolar exudate remained to be absorbed later on. This phenomenon and the *absence of a crisis* were noticed in every case." Now the most conservative will admit that in every one of these cases of pneumococcic pneumonia normal conditions in three or four days, without crisis, would not obtain unless there was some special reason for it—some agent operating to bring about this result. Such peculiar deviation, in so many consecutive cases, from the natural course of the disease, can hardly be attributed to mere coincidence. The unusual phenomena must, therefore, be explained. Now if it can be satisfactorily demonstrated that camphor, when introduced into the blood stream attacks there the pneumococcus, gradually reducing its vitality, inhibiting its growth and possibly destroying some of its toxins, the effect which it evidently produced on Seibert's cases is readily understood. It is interesting, therefore, to realize not only that this hypothesis is biologically demonstrable, but that Seibert has already demonstrated the truth of it. The thought which led up to the actual performance he has expressed in the following language: "The blood culture work of the last decade has shown (1) that the pneumococci enter the blood (in pneumonia) at the time of the initial chill, in fact cause it; (2) that they remain there till after the crisis; and (3) that they there cause the toxemia, the life danger, and, in fatal cases, the death of the patient. Therefore a successful treatment of the pneumonic must consist in either binding the toxin by a serum or in destroying the vitality of these organisms directly or indirectly by chemiotherapy." With the knowledge of the conflicting reports and the unsatisfactory results attending the use of Röemer's anti-pneumococcic serum, which was at that time being extensively tried in Germany, the question of the successful binding of the toxin was hardly to be considered and Seibert turned to biologic experimentation, seeking therein a scientific explanation of his clinical experience with the administration of camphor already referred to. Of this he says, "Three years ago Dr. Hensel, assistant pathologist at the German Hospital, in a series of experiments made at my request found that 1/10,000 part of camphor added to the usual culture media inhibited the growth of pneumococci while the controls all thrived. At the same time Dr. J. C. Welsh, pathologist of the Lying-in Hospital, found that 1 c. c. of 20 per cent. camphorated oil given hypodermically in rabbits and repeated every 12 hours after a fatal dose of pneumococcus emulsion had been injected intravenously, inhibited the fatal outcome, but one animal succumbed out of six." Up to this time Dr. Seibert, in the treatment of his cases, had been using a 20 per cent. camphorated oil but the experience with the fatal case to which I have referred caused him to consider the advisability of increasing the strength of the preparation. Accordingly the "next few patients were given 10 c. c. of a 30 per cent. camphor solution in sesamum oil to every hundred pounds of body weight every 12 hours in unilateral pneumonia with average toxemia, and every eight hours with bilateral involvement with severe toxemia. This plan proved effectual in so far as it decreased the temperature, pulse and respiration more markedly but nevertheless requiring at least three days to practically reach normal conditions." Reflecting upon the possibility of shortening this period it occurred to Seibert that it might be done by adding some other chemical to the camphor preparation. This idea was suggested by his experience in the treatment of rheumatics with injections of salicylated camphor oil and also by the fact that he had "observed the prompt destruction of meningococci in the blood of a two-year-old patient by a 3 per cent. salicylic acid solution in a 30 per cent. camphor oil, 5 c. c. being injected every forty-eight hours." Then, too, there was the fact that the capsule of the pneumococcus, through which the endotoxin enters the blood of the patient markedly increases its resisting power. "If a more aggressive chemical added to the oil could co-operate with the camphor, not alone the blood serum might be changed to an unsuitable culture medium (as is done no doubt by the camphor) but also the organisms could possibly be damaged by destroying their capsule."

The susceptibility of animals to the poisonous effects of the pneumococcus varies greatly. Some of the laboratory animals, as for example the chicken and the pigeon, are almost absolutely immune, while rabbits and mice are extremely susceptible. In susceptible animals a rapidly fatal coccemia or more or less extensive local lesions are produced, depending on the virulence of the culture, the seat of the inoculation and the susceptibility of the animal. In rabbits, lobar pneumonia has been produced by inoculation into the pleura, trachea, blood stream or subcutaneous tissue. To test the action of the 30 per cent. camphorated oil against pneumococcic toxemia in rabbits and to compare this with the action of the same oil to which salicylic acid had been added, Dr. G. A. Rueck, assistant pathologist to St. Francis Hospital, at the request of Seibert, made twenty-seven

experiments. As seven of the experiments referred to were of a preparatory nature Seibert does not specifically mention them, limiting his remarks to twenty of the twenty-seven performed. Of these he says, "Rueck first injected 2¾ c. c. of a pure culture of pneumococcic emulsion intravenously into a rabbit weighing 2,325 grams, the animal dying promptly after twenty-six hours." To insure sufficient virulence, the organism was isolated from the heart blood and used for the experiments which followed. From many of these it was shown that 1 c. c. of a 24-hour broth culture of pneumococci introduced intravenously in a rabbit weighing 1,500 grams proved fatal in 24 to 36 hours.

Further experiments conclusively demonstrated that this fatal result could be delayed or prevented, or both, by the giving of a hypodermic injection of camphorated oil with or without the addition of a small percentage of salicylic acid, six hours after the inoculation with the pneumococcus. Reactions, symptoms, and other pathologic phenomena were carefully noted and it was observed that the outcome, in every instance, depended upon the weight of the animal, the extent of the poisoning, and the amount of camphor injected. In referring to the results of these special inoculations Seibert says, "We find that in 17 of the 20 animals inoculated with the fatal dose of pneumococci, death was retarded from 2 to 5 days by camphor oil injections in 8, and entirely prevented in 9. As the first three animals were given at least twice the fatal amount of pneumococcic broth they should have received, it is but fair in estimating the action of the camphor treatment to leave their career out of account," and in speaking generally upon the subject the author says, "These attempts to interfere in human and animal pneumococcic infections with camphor have established the following facts: (1) that 10 c. c. of a 30 per cent. camphorated oil (equal to 36 grains of pure camphor) injected hypodermically to 100 pounds of human body weight every 8 to 12 hours do not produce symptoms of poisoning, in fact are harmless; (2) that much larger doses (to the body weight) in rabbits are equally well borne; and (3) that these quantities of camphor materially assist in overcoming pneumococcic toxemia; and (4) that the earlier this treatment is resorted to the better the results."

In our own country the literature on the treatment of pneumonia, by this method, is meagre, but that which has been contributed supports the views of Seibert. Thus, Dr. Leonard Webber, of Manhattan, in the *Medical Record* for January, 1911, reports an interesting case concerning which he says: "there could be no doubt that our patient would shortly die unless we could administer some pneumococcus serum or vaccine or chemical antitoxin which would help her to overcome an infection against which her constitution could not prevail." Remembering to have read Seibert's paper, Dr. Webber concluded to use the injections of camphor therein recommended, with the result that his patient recovered in a satisfactory manner.

Dr. Russell S. Fowler in his "Operating Room and The Patient," writing on the treatment of post-operative pneumonia says: "drugs, with the possible exception of massive doses of camphor in oil by hypodermic (Seibert) do not seem to exert any influence upon the disease." Forcheimer ("Therapeusis of Internal Diseases") writes interestingly of Seibert's method and adds, "his results are encouraging." The European journals, especially some of those published in Germany, have devoted space to a consideration of this subject, but I have refrained from quoting them because I have been informed by Dr. Seibert that he will do that in his discussion of my paper. My own experience with camphor, used in the manner described, is limited to the observation of six cases, three of which were post-operative pneumococcic pneumonias seen in consultation with Dr. Fowler in his service at the German Hospital. The remaining three cases occurred in private practice. The results obtained in the treatment of these cases, in so far as the pneumococcic infection was concerned, were identical with those obtained in Seibert's cases. One of this number is, I believe, worthy of special mention because I am firmly convinced that without the administration of the camphor the patient would have perished. The illness referred to occurred in April of this year. Her resisting powers greatly reduced and weakened by a previous severe influenzal infection, the lady, seventy-one years of age, had been up and about for a period of several weeks when the initial chill ushered in an attack of acute lobar pneumonia which quickly consolidated the whole of the left upper lobe. Prostration was rapid and extreme, cardiac and vasomotor shock predominating from the very first. The toxemia soon became general and markedly profound, resulting in delirium and extreme restlessness, insomnia, increased respiration, dyspnœa, high temperature, right heart failure, diminished renal secretion, intestinal paresis as evidenced by persistent ballooning of the abdomen, gastric distention, wavering and intermittent pulse and complete absence of cough and expectoration. This condition resisted all classical treatment but the first injection, given on the second day of the disease, of 10 c. c. of 20 per cent. camphor oil made a decided impression. These injections were repeated every four hours night and day with the result that the patient recovered in the usual gradual manner, without crisis, which seems uniformly to attend this plan of treatment, and she is now enjoying good health. This desperate case, in my opinion, warranted the giving of the injections at shortened intervals, and, regardless of other rules, I was governed entirely in my administration of the camphor by its effects on

the patient's condition. It is interesting, therefore, from the standpoint of the clinician, to realize that the total amount of camphor required here turns out to be about equal to that amount which Seibert thinks necessary, in serious cases, to bring about normal conditions in the shortest possible time. Although the injections in this case were given every four hours I am convinced that the method which advocates the use of the stronger solution and longer intervals between doses has its advantages and should, as a rule, be adhered to as follows: A 30 per cent. preparation of camphor in Oleum Sesami should be used. This can readily be prepared by the local druggist and Eimer & Amend keep it in stock. The physician should always see to it that the solution is of full strength and absolutely sterile. In preparing the remedy the oil to be sterilized should be put in a salt mouthed bottle having a loosely fitting stopper, the sterilization taking place in a boiling water bath. Whenever the preparation is to be used it should be drawn (not poured) into the sterilized syringe, care being taken to prevent loss of camphor by volatilization. As soon after the initial chill as possible, 10 c. c. or two and one-half drams (equal to 36 grains of pure camphor) to 100 pounds of human body weight should be injected hypodermically. This dose should be repeated every 12 hours except in bilateral pneumonia and in severe toxemia. In those cases the injections should be given every 6 to 8 hours. The syringe used should be a Luer, without rubber washers, of 10 to 20 c. c. capacity, or a phylacogens syringe may be used. I prefer the latter. The site selected for the injection should be the outer thigh or the abdomen. The point at which the injection is to be made should be carefully sterilized by thorough washing and the application to it of tincture of iodine. The injection should be made slowly and the oil gradually deposited below the subcutaneous fatty tissue and not into it. If these simple precautions are carried out there will be no trouble either in the form of abscess, sloughing of the skin or immediate discomfort following these injections. I have yet to observe the least difficulty in any of those directions.

I cannot close a paper on pneumonia without entering an earnest plea for greater prophylaxis. While it is true that up to the present, in the treatment of the individual, lack of definite therapeutic knowledge has prevented advance beyond the expectant plan, it is equally true that bacteriology has so splendidly and accurately demonstrated the etiology of the disease that prevention of its spread resolves itself largely into a proper appreciation and application of the bacteriological facts. The bacteriologist tells us that the exciting cause of typical pneumonia is the introduction into the system of a microorganism which he has identified as the pneumococcus. He has shown us that this pathogenic germ is conveyed, for the most part, by dust-laden air and that by reason of that fact it is present at all times in the nose, mouth, and throat of a large percentage of individuals; that it is encountered more frequently in crowded cities than in country districts; that it persists for weeks and months in the mouths of convalescents from pneumonia, and that it reaches the mouths of those who are in the vicinity of pneumonics. Pneumonia must, therefore, be regarded as a communicable infectious disease, somewhat contagious, and should be treated as such. Patients suffering from it should, as far as possible, be isolated. Secretions and excretions, especially the sputum, should be thoroughly disinfected or destroyed. Nurses and other attendants upon pneumonics should prevent the possibility of infection by the frequent use of mouth washes, and the proper cleansing and disinfection of the hands, and they should endeavor to render themselves less susceptible to the disease by obtaining sufficient sleep, food, and fresh air. In all public buildings: theatres, meeting halls, churches, schools, prisons, large department stores, hospitals, and the like, the best sanitation must prevail if we would prevent the spread of pneumonia.

The more I am privileged to observe the surgeon at his work the more throroughly do I become convinced that ether pneumonia is probably preventable. When ether is to be used as an anæsthetic, anti-operative gastric lavage, followed by the proper cleansing and disinfecting of the mouth, nose, and throat, should, when possible, be the rule; indeed, it should become an important part of the operative technique. This, I believe, is especially necessary when it is at all probable that the operation to be performed will be prolonged, or when the intestine is involved in the surgical procedure. When, however, in spite of all our precautionary measures, pneumonia asserts itself, certainly until a proper serum or vaccine has been developed, the lives and health of sufferers entrusted to our care will, in my opinion, be best conserved if we have recourse as soon as possible to the administration of camphor in the manner described.

Discussion.

Dr. August Seibert, New York City: Mr. President, Dr. Cruikshank's invitation enables me to present to you to-night the most important reports on clinical and laboratory work regarding the action of camphor in pneumococcic pneumonia, published since my first article on this subject appeared four years ago (*Muench. Med. Wochenschrift,* No. 36, 1909). Before doing so, a few remarks, by way of introduction, are necessary to avoid future misunderstandings.

One of the many dogmas handed down from one medical generation to the next is the supposed *toxic* action of camphor. This teaching, like many others, came to us from a time when hypodermic medication and experiments on animals in the laboratory with aseptic methods were

unknown. In a rather extensive search for actual facts regarding the poisonous effect of camphor on the nervous system in *older* medical literature, I have failed to find a single statement giving precise figures, but plenty of hearsay.

With none of the many hypodermic injections of camphor in oil that I have made in pneumonic and rheumatic patients (in the latter with salicylic acid added) up to forty-five grains of pure camphor to the single dose, have I noticed the slightest irritative influence on the central nervous system. Not alone that so-called overstimulation was never seen, but the conviction obtained that camphor is no heart stimulant at all.

A second statement often made is, that the camphor treatment in pneumonia has been tried out long ago, and without result. This also is not based on fact, for there existed *no record in medical literature,* reporting the action of camphor to *combat the toxemia in pneumococcic pneumonia,* until my first article appeared in the *Muenchener Medizinische Wochenschrift,* No. 36, 1909. All camphor treatments attempted *before* this time, were *directed only against heart-weakness,* and were *never begun* until this condition had set in. And it could not have been otherwise, because the *knowledge* of pneumococcic blood invasion, pneumococcic toxemia and its dangers, has come to us only within the last its dangers, has come to us only with the last decade. Therefore an earlier test of the value of camphor in pneumococcic toxemia *could not* have been made before this knowledge had been acquired. And, in fact, it was not. My first report on "Camphor and Pneumococci," published four years ago in Germany, has been followed by quite a literature in that and in this country.

The only opposition to the use of larger quantities of camphor, in *recent* literature, was caused by the surgical method of pouring the oil into the peritoneal cavity in septic peritonitis:

(1). Happick, Carl (*Muench. Med. Wochenschrift,* 19 Marz, 1912), reports "On the Deleterious Action of Camphor." He injected 1 c. c. of 40 per cent. alcohol containing 0.08 camphor in the jugular veins of a few dozen guinea pigs and rabbits. This was well borne. But after starving these animals for 8 days and then injecting the same quantity, they were killed outright. The same happened after slightly poisoning the animals with illuminating gas to reduce the amount of the necessary oxygen for the formation of glycuronic acid and then injecting the camphor. Again, if a starving rabbit was injected with camphor and glycuronic acid at the same time, it remained alive. Other rabbits were given 2½ grains of camphor in an emulsion of oil, in the jugular vein, resulting in severe convulsions lasting 5 minutes and complete recovery in one-half hour. Two other injections into the carotid artery after ligation caused death in one-half hour after convulsions.

In conclusion, Happick states: "The normal human organism will tolerate from 10 to 20 hypodermic injections of camphor, of 1½ grains each."

(2). Head, Jas. A., Prof. of Medicine, University of Pittsburgh, Pa., and Richard Clyde Brooks, Asst. Prof. of Physiology and Pharmacology, *Amer. Jrl. of the Med. Sciences,* February, 1913, state in their report on the action of camphor on the heart: "In the clinical experiments, camphor injected subcutaneously in oil in doses as large as 50 *grains failed to produce any definite results.* The variations in pulse and blood pressure occasionally following the use of the drug were so *inconstant* as to make it probable that they had *no relation* to the medication employed. Therefore, while camphor may be an active agent in certain disorders in which there is an abnormally small glycuronic acid content, and while experiments indicate that the drug exercises a favorable effect upon the heart muscle which is poisoned by chloral, muscarine or strychnine, nevertheless camphor should neither be *relied upon as a cardiac stimulant nor feared as a toxic agent in doses employed by us and under the conditions studied.*"

These experiments were made on healthy adults from 16 to 70 years of age, the amount of camphor given hypodermically varying from 5 to 50 grains.

(3). Iversen, Julius, (Vratsch, January, 1912), treated 80 cases of pneumonia in the Obeloff Hospital for Men in St. Petersburg, Russia, by daily injecting about 72 grains of camphor (but not in two doses of 36 grains each as suggested by me in my first publication, but by scattering this amount in smaller doses), resulting in 70 recoveries and 10 deaths, while 90 control cases given no camphor resulted in 62 recoveries and 18 deaths. In a personal letter mailed June 15, 1913, Iversen laid stress upon the fact that the camphor markedly *reduced the nervous irritability,* particularly in alcoholics, an observation corroborated by Dr. Bainton of New York, in St. John's Hospital, Long Island City.

(4). Weintraud, (*Deutsch, Med. Wochenschrift,* No. 28, July 10, 1913), Chief of the City Hospital of Wiesbaden, Germany, reports having given 4.8 grams (72 grains) of camphor in pneumonia daily (as suggested by me in my first report), but by *intramuscular* injections of the 20 per cent. camphor oil. These were well borne. He also observed the influence on the temperature in so far "that the morning remissions came earlier and oftener than is usual in croupous pneumonia," and also "that the ultimate return to the normal temperature was *not* so marked by *critical drop.* On the whole, most patients lost their fever entirely before the 5th, 6th and 7th day, but in those cases in which the patients, by the severity of the infection, the extent of the pneumonic infiltration and the condition of the heart, were particularly threatened, the fatal outcome was not prevent." The number of cases is not given. In a personal letter, Prof. Wein-

traud gave his opinion of the value of this treatment, although he believes more in its good action on the heart than in camphor as a germicide for pneumococci. Up to this time he had not used the 30 per cent. camphor oil. (In parenthesis, I will add that I never recommended intramuscular injections because they discomfort the patient, which hypodermic injections do not do, and because a blood vessel may be punctured and the oil as such can enter the blood current.)

(5). Roser, Ernst, (*Wiener Klinische Rundschau,* June 8, 1913), physician to St. Joseph's Hospital in Beuel on the Rhine, also reports on the valuable action of the large doses of camphor in pneumonia suggested by me and his chief, Prof. Esser, who had used them prior to myself in combatting heart failure. He gives an exhaustive literature on the clinical action of camphor on the heart, at the close of his article.

(6). Prof. H. Leo, Director of the Pharmacological Institute of the University of Bonn, Germany (*Deutsch. Med. Wochenschrift,* March 27, 1913), states that "experiments testing the action of camphor on pneumococcic infection were heretofore only reported by Paessler and Seibert. Both used hypodermic injections of camphor oil. While Paessler confined himself to proving that the good effect of the camphor on the weak circulation was due to irritation of the vasomotor centers, Seibert reports exclusively on the antibacterial action of this drug.

Leo, convinced of the germicidal action of camphor upon the pneumococcus, but not satisfied with the slow absorption of camphor from the oil deposited under the skin, conducted many experiments to obtain a *watery* solution of camphor, to be used for intravenous injection in pneumococcic infection. He ultimately succeeded in producing a solution of one part of camphor in 500 parts of water. On injecting this camphor water intravenously in 38 rabbits previously poisoned by the fatal dose of pneumococci, he retarded the fatal outcome by two days in his last series of experiments, after a number of animals had evidently died of overdoses (of 20 c. c. of the camphor water injected intravenously). To me, the most valuable part of his article consists of a footnote, in which he says: "Recently I have had even much better results in experiments on numerous mice. Here the camphor was injected hypodermically into animals infected with pneumococci. They not only lived longer than the control animals, who died within a few days, but some of the camphorated animals are to-day, several weeks after the infection, alive, and appear to have outlived the pneumococcic infection completely." The figures are not given. In his last paper, read at the annual meeting of German Natural Scientists and Physicians, in Vienna, September 22, 1913, Prof. Leo emphasizes that with our present knowledge, the *early* use of camphor is necessarily indicated and that this promises the best results. He evidently believes that camphor is a direct germicide of the pneumococcus, which belief I do not share.

(7). Boehnke, Staff Surgeon, German Army, commanded to the Royal Institute for Experimental Therapy in Frankfort a/M (Director, Prof. Paul Ehrlich), published an investigation, "On the Action of Camphor in Bacterial Infection" (*Berlin. Klin. Wochenschrift,* May 5, 1913). In a series of animal experiments covering several months, Boehnke at first tested the *protective* action of camphor against pneumococcic infection. In the *first series* he gave white mice the camphor oil hypodermically 4 *hours previous* to injecting the fatal dose of pneumococci into the peritoneum. Result: All controls dead within 24 to 36 hours; of the 10 camphorated animals, four died soon, but six are well after seven days.

Second Test.—First camphor, 4 *hours later* pneumococci; 24 hours later camphor repeated. Result: Controls all dead in 24 to 36 hours; the camphorated animals all alive on 7th day.

Third and Fourth Test.—First camphor, 2 *hours later pneumococci.* Result: 20 per cent. of animals die soon; 40 per cent. remain alive from 3 to 5 days; and 40 per cent. recover. (Controls all die within 30 hours.)

Fifth Test with larger dose of Camphor.—Infection 2 hours later. Result: 20 per cent. die toxic; 20 per cent. succumb to infection; and 60 per cent. recover. Controls dead in 30 to 60 hours.

Sixth Test.—0.25 c. c. of 5 per cent. oil, 2 *hours* later infection; 20 hours later camphor again. Result: 40 per cent. of animals lived from 48 to 72 hours, and 60 per cent. recovered. Controls all died.

Boehnke's further experiments with rabbits gave the same results as those with mice. He states: "In the tests made to protect against a following pneumococcic infection by using large doses, we have *an unquestionable action of camphor,* which is gradually weakened by therapy and infection *coming close together,* and becomes entirely uncertain in the curative tests (where the camphor is injected hours after the fatal pneumococcic infection), so that only a greater or less retardation of the fatal outcome is seen in the treated animals. Boehnke's last experiments are particularly noteworthy:

(1). Of the animals injected with camphor *during* 3 *days prior* to a fatal pneumococcic infection, two-thirds remained well and survived. (2). Of the animals given 0.45 c. c. of antipneumococcic serum (Merck) 3 *hours before the infection,* two-thirds remained well, and one-third were sick for three days but recovered; but (3). Of the animals given antipneumococcic *serum and camphor* oil *before* the infection, *all remained well.*

In a personal letter from the Royal Institute for Experimental Therapy in Frankfort, Germany, dated June 11th of this year, Staff Sur-

geon Boehnke promised to call particular attention to the combined action of *camphor* and *serum,* in a future publication, and urged me to give this a trial in pneumonic patients.

Summing up the facts taken from the reports mentioned here, we know now that (1) Hypodermic injections of camphor in oil are harmless to the human in doses of 36 grains of pure camphor to 100 pounds of body weight, given every 6 hours, and that so-called overstimulation symptoms, formerly reported as due to this drug, are not based on scientific facts; (2) that animals can be immunized against *later* pneumococcic infection by hypodermic injections of camphor in oil; (3) that patients suffering from pneumococcic pneumonia, if injected with camphor oil *in the above doses, early,* slowly but steadily improve and regain their normal condition *earlier* and *without a crisis,* and that (4) the *sooner this treatment begins after the initial chill, the sooner recovery occurs.*

In closing this report, a few remarks may not be amiss. How can we reconcile the effective clinical experience with camphor in the pneumonic human patient with the poor showing of the same drug in the animal treated in the laboratory *after* the infection? The answer is simple: the *animal* is given the *fatal* dose of a pneumococcic emulsion containing a good amount of *chemical toxin at once,* and directly into the blood current. The toxin of course is not hindered in its action by the camphor introduced later on, and the *fatal number* of pneumococci have had hours to produce new toxin in the blood current and to colonize in the kidney, the endocardium, the pleura and the meninges, before the first dose of camphor is injected under the skin, from there to be slowly absorbed into the blood. In the pneumonic *patient* the conditions are quite different. Here, with rare exceptions, but few pneumococci enter the blood during the first day, which attack must be repulsed by the immunizing ability of the patient himself; but by adding camphor to the blood *early,* in sufficient quantities and at regular intervals, this fluid is rendered an *unsuitable culture medium* for these organisms, and if this is continued, the organisms entering from the infected lung *later* on are gradually *starved,* and so made harmless.

It is logical reasoning to infer that, if an *animal* blood current can be protected by camphor given before pneumococci are introduced (a fact established by Boehnke's many experiments) we can also *protect the pneumonic human blood* by the same means against those organisms *entering there from the infected lung later on* so that the patient has but to overcome that amount of toxin which was produced before the *first* camphor injection had been given.

All clinical and experimental reports prove that this inference is correct, and that *camphor, while not a direct germicide* for the pneumococcus (like salicylic acid for the rheumatic germ and quinine for the plasmodium of malaria) can render *every* culture medium, *including the human blood current, unsuitable* for its growth and multiplication. And I cannot abstain from congratulating Dr. Hensel, Assistant Pathologist of the German Hospital, Manhattan, tonight on the uniform corroboration of the *first* bacteriological work in this direction performed by him at my request, seven years ago.

Furthermore, in attempting to aid a patient infected by pneumococci, we should also remember what I emphasized in my last publication, that, while we can gradually immunize his *blood* by camphor, this drug does *not* influence the organisms which have colonized in the kidney, the pleura, the endocardium, and the meninges. To combat pneumococcic nephritis, for instance (which develops in many cases), *real* urotropin (7½ grains in water given to the adult three times daily) is necessary, and is best given from the start twice daily, as a prophylactic measure. Where meningitic, endocarditic and pleuritic symptoms develop, an addition of 3 per cent. synthetic *salicylic acid* (Merck) to the 30 per cent. of camphor in sesame oil, given hypodermically, will reach *these* organisms and reduce their vitality. Recent clinical observations and Dr. Rueck's animal experiments, detailed in my last article on this subject (*Medical Record,* April 20, 1912) prove this. In short, camphor is not a "cure-all" in pneumococcic pneumonia, but a *valuable aid* to the patient in overcoming this infection in *the blood current.* The *sooner* the aid is given, the better the chance for recovery. Every hour wasted after the initial chill *adds* to the pneumococcic toxin, and lessens the effectiveness of this treatment. The *later* the camphorizing of the pneumonic's blood begins, the less valuable this aid, and the more dubious the ultimate result. A pneumonia patient recovering by crisis regains health on account of the immunizing ability of his own body *alone,* unaided, or possibly in spite of, the activity of his physician.

In the treatment of diphtheria with Behring's serum (here curiously called "antitoxin"), it has lately been established that, if injected within the *first* 24 *hours* of illness, the curative action is 70 *times* more effective than when given the *next* day. Therefore, where in sore throat even the *possibility* exists that the Loeffler bacillus is present, the *serum test* should be made immediately, to safeguard the patient.

Likewise, if a patient has had a chill, presents high fever and labored breathing, 10 c. c. of a 30 per cent. camphor solution in sesame oil to 100 pounds of body weight, injected under the skin *immediately,* and repeated every 12 hours, will safeguard him against a fatal outcome through a possible pneumococcic infection. If the chill has been caused by influenza bacilli, the same benefit has been given. If it has been caused by other organisms, no harm has been done.

A sterile 30 per cent. camphor solution in se-

same oil, and an all-glass syringe should, to my mind, be in the outfit of every physician, ready for *immediate* use, as well as 2,000 units of Behring's serum against diphtheria. The *general practitioners* who attend the pneumonic patients during the first days can alone reduce the high mortality of pneumococcic pneumonia, mentioned by Dr. Cruikshank to-night, as well as the entirely *too high* mortality of diphtheritic infection, by the *early* use of remedies proved effective by scientific research.

Dr. Joseph H. Bainton, New York City: During the past four years I have become an enthusiastic follower of Dr. Seibert in the use of large amounts of camphor as a routine measure in the treatment of lobar pneumonia, and I can but reiterate and emphasize the statements made by him and Dr. Cruikshank this evening.

There is a rational explanation for most of the clinical facts which may be observed during the administration of camphor, but I am unprepared at this time to enter upon that intricate question, and shall confine my few remarks to the clinical observation and allied data.

The number of cases coming under my personal care lies somewhere between 75 and 100. Excepting in cases of delirium tremens and alcoholic wet brain, I do not recall now a single death when treatment was begun before the third day. Usually in 24 to 48 hours improvement has been noticed. Temperature nearly always sinks to normal, gradually, instead of falling by crisis. I have learned to continue the administration of camphor for at least one day after fever has disappeared, because when this is not done, there is sometimes a tendency for the temperature to rebound for one or two degrees.

I have records dating from February, 1910, to December, 1911, of fifteen cases of lobar pneumonia, where patients were likewise suffering from chronic alcoholism, eight having delirium tremens and 2 alcoholic wet brain, with 5 deaths. 33⅓ percentage mortality with this terrible combination is not a bad figure. During that period I learned to eliminate whiskey entirely when dealing with this class of cases and to depend principally on large hypodermic injections of camphorated oil. Under the present plan the patients are quieter and though my statistics have not been brought up to date, I am very certain that the mortality is lower. Whether this is due to the withdrawal of the accustomed beverage, or to the action of camphor not antagonized by the action of alcohol would be rather a difficult point to decide. At any rate it has become my conviction that alcohol inhibits the action of camphor not only in drunkards but also in other patients.

In every case of pneumonia I order 5 c. c. or more of camphorated oil by hypodermic every 8, 6, 4, or even every 3 hours, a daily total of from 60 to 150 or more grains of camphor.

In children, of course, smaller doses are indicated, but I have used it in relatively larger doses than in adults. One of my youngest patients was a marasmic infant of 7 months, weighing 8¼ pounds, and suffering from a double lobar pneumonia. In this case 1 c. c. of camphorated oil was injected q. 6. h. Temperature was normal in five days and child left the hospital 3 weeks after admission weighing 8 oz. more than on the day it came to us.

In probably 4,000 hypodermic injections of sterilized camphorated oil administered not only in pneumonia but also in other conditions with vasomotor collapse, I have never noticed any symptoms of systemic poisoning, and I have seen but one abscess at the site of injection.

Dr. Edward E. Cornwall, Brooklyn: The accounts given by Drs. Cruikshank and Seibert of the results of large doses of camphor in lobar pneumonia strongly remind me of the accounts given a few years ago of the results of large doses of creosote carbonate in that disease, viz., lessening of pain, reduction of fever and substitution of lysis for crisis. For both drugs an action nearly or quite specific has been claimed. Similar extravagant claims have been made for other drug treatments of pneumonia in recent years, notably for digitalis, the salicylates and urotropin. I have never used any of the treatments mentioned, and have seen most of them fade away out of the limelight; still described in the text books, however (those cemeteries of dead therapeutics), and still used by some physicians, perhaps from force of habit. None of those specific drug treatments for pneumonia has ever yet secured scientific establishment, and there exists an antecedent improbability of their doing so in the future.

The burden of proof which rests on those who offer, for our consideration, a specific drug treatment for any general disease due to a bacterial cause, is very heavy indeed. In all medicine, only one such drug specific has so far been found, viz., mercury in syphilis; and there the drug has a disease of long continuance to deal with. The proof that a particular drug can destroy particular bacteria without injuring the human tissues, in order to be convincing, must be overwhelmingly strong because of the antecedent improbability which opposes it.

The clinical evidence of the value of large doses of camphor in pneumonia which has been presented, is interesting and well worthy of serious consideration, but it is not sufficient in quantity and fullness. I can give what I believe to be better clinical evidence in favor of a treatment for pneumonia which I have devised and which has against it no antecedent improbability. This treatment is based entirely on physiological and pathological considerations, and does not directly attack the specific micro-organism. I have used it since the beginning of the present year in all cases of lobar pneumonia which I have treated in the Williamsburg and Norwegian

Hospitals. You know what hospital cases of pneumonia are: they are not all of them such as we would select for testing out a new method of treatment; many of them come under our care after previous neglect or bad treatment; not all of them are seen in the beginning of the disease, which I understood Dr. Seibert to say is a requisite for the success of his treatment. My continuous series of hospital cases, seen between January 1 and November 21, 1913, numbered forty-two. Only three of these died and of those three two were moribund on admission, and the third died after defervescence, of what cause I do not know. Of course, from so small a series of cases, I do not attempt to draw absolute conclusions, but any conclusions which might be drawn from them do not have to overcome an antecedent improbability.

While our attitude is naturally skeptical toward any proposed drug treatment of an acute disease of bacterial origin for which specific powers are claimed, the possibility of such a treatment cannot be denied, and the serious work of Dr. Seibert and his followers, along this line, will certainly be followed with sympathetic interest.

Dr. Russell S. Fowler, Brooklyn: I have listened attentively to the reading of Dr. Cruikshank's paper because of my interest in what we are in the habit of calling the post-operative variety of the disease. Pneumonia is an infection, the consideration of which, while usually limited to the realm of the physician, is not infrequently thrust upon the attention of the surgeon, often suddenly changing a perfectly satisfactory case into one which must be looked upon by him with apprehension and anxiety. His experience has taught him that post-operative pneumonia may result from undue exposure of the patient while he is under the anesthetic, from inspiration of secretions from the mouth or of material vomited during anesthesia, from keeping aged and debilitated patients too long occupying the dorsal position (hypostatic pneumonia), from infection carried to the lung from the blood (septic pneumonia). Aside from the ordinary contributing causes of post-operative pneumonia, such for example as age, alcoholism, cachexia, cardiac weakness, weather conditions and the like, the surgeon finds that the disease occurs more frequently after operations performed on the respiratory apparatus and abdomen, particularly those involving the tissues located in the neighborhood of the diaphragm. Hence the relevancy and importance of Dr. Cruikshank's plea for the adoption by the surgeon of stringent prophylactic measures. During the past two years, in my service at the German Hospital eight cases of post-operative lobar pneumonia have been treated with large doses of camphor in the manner described by Dr. Cruikshank. In all of these cases the pneumococcus was found in the sputum. The injections referred to were never followed by deleterious effects, local or otherwise. Indeed there has been such uniform absence of any unpleasant results attending its use, and the pneumonic symptoms have, as a rule, yielded to the treatment so satisfactorily that it has become my custom to use it as a prophylactic in cases in which bronchial or pneumonic complications might reasonably be expected to follow operative procedure. It would seem from the more recent investigations of Seibert as set forth in his discussion this evening that camphor administered in this manner, together with antipneumococcic serum, should be curative in a large proportion of cases.

Dr. Leon Louria, Brooklyn: The papers of Dr. Cruikshank and Dr. Seibert are very interesting and inspiring. The recent advances in medicine and therapeutics have apparently not changed the fatality of pneumonia. The death rate today is about as high as it was one or two decades ago. The observation of Dr. Cruikshank is limited to six cases, and of Dr. Seibert to thirty odd, undoubtedly too small a number to draw conclusions from. We are all aware of the fact that epidemics of pneumonia vary in intensity and that there are cases of pneumonia which get well in spite of the treatment, and others which will die no matter what course of treatment is instituted. Dr. Seibert has made an effort to substantiate his clinical observations by experimental data, but we are hardly justified in comparing a pneumococcic infection in a rabbit with a pneumonia in man.

In our wards it is customary to administer camphor in a 20 per cent. solution in doses of 20 minims every half or one hour, according to the severity of the symptoms. We are using a solution of camphor in sweet almond oil which is easier absorbed than the ordinary olive oil, and we were relying on this drug mainly as a stimulant to the vasomotor center. Its effects were noted especially in cases of threatening vasomotor collapse, and we can readily testify to its efficiency in this direction.

In all cases of pneumonia we are accustomed to making cultures and we consider them then mainly from the prognostic viewpoint rather than the diagnostic.

We have learned that if we obtain a positive culture on a blood plate with numerous colonies that these cases as a rule end fatally, and we hold a record of only one case with a positive culture with a large number of colonies where the patient recovered.

While we were administering these large doses of camphor, 60 and more grains a day, we never could notice any effect of the drug on the blood culture. In other words, the number of colonies has not diminished as a result of the administration of larger doses of camphor.

While we are given experimental evidence of a delayed fatal issue from the injection of camphorated oil in animals, the clinical data is not sufficient for us to accept the specific action of camphor until it can be culturally proven that

this drug destroys the pneumococci, an assumption maintained by Dr. Seibert.

Dr. Seibert asserts that these injections do not affect the pneumococci in the pleura, kidneys or meninges, a statement which does not harmonize with the previous one that the pneumococci are affected in the blood. He related a case of a cure of a pneumococcus meningitis after a hypodermic injection of camphorated oil and salicylic acid. We know from the extensive experiments and clinical observations of Flexner that the remedial agents do not reach the meninges by the way of the blood stream; that the only way to attack the infections of the cerebro-spinal canal is by the introduction of a drug or any other therapeutic agent directly into the spinal cavity. Flexner makes a very strong point of this clinical fact and I would like to hear how Dr. Seibert explains the mode of action in his case.

We are taught that the action of camphor is evanescent. That is why we were in the habit of giving repeated smaller doses to maintain the desired action of the drug.

Our doses when divided compare favorably with the quantities used by Dr. Seibert, and I must state that in none of our cases did we regret the large amount of camphor given to the patient. In no case have we observed any untoward effect. We can conscientiously state that it is a harmless drug, even in very large doses. In one case of mine as much as 150 grains a day was administered in a case of pneumonia in an old lady and she recovered without complications. I am ready to adopt the method suggested by Dr. Seibert, but the action of camphor on the pneumococci must be studied not only at the bedside, but also in the laboratory, before we can call it a specific.

Dr. Cruikshank in closing the discussion said: Just a few words in reply to the remarks made by Dr. Cornwall and Dr. Louria. All of Dr. Cornwall's objections to the use of camphor in pneumonia seem to resolve themselves into one, namely, "antecedent improbability." I understand Dr. Cornwall to mean by this phrase that little can be hoped from the administration of camphor in pneumonia because so many drugs which have been already recommended in its treatment have proved disappointing. I would go further than Dr. Cornwall: throughout the ages, every conceivable method has been resorted to by the physician in his endeavor to successfully combat the disease and to little or no purpose. Lack of knowledge of certain involved questions bearing upon its etiology has forced continuance, up to this very moment, of the symptomatic or expectant plan in the treatment of pneumonia, with the result that we have stood practically powerless before this ravaging malady. Now, however, owing to further acquaintance with the bacteriology of the disease, we are attempting a step forward. Chemiotherapy, certainly a safer guide than empiracism, offers for our consideration a concededly harmless remedy which it has biologically demonstrated to attack, in the blood stream, the very cause of the mischief. Dr. Cornwall urges against this the great difficulty which obtains "in overcoming an antecedent improbability." I submit that this euphonism, melodious as it is, when applied to the history of scientific endeavor and achievement will hardly bear analysis, since it must be admitted that all the mistakes of the past, in medicine as elsewhere, were absolutely necessary to the success of the present, and this, of course, applies to the future as well.

Concerning Dr. Cornwall's statement, "I can give what I believe to be better clinical evidence in favor of a treatment for pneumonia which I have devised and which has against it no antecedent improbability," I might say that I was present at the April, 1913, meeting of the Medical Society of the County of Kings and there had the pleasure of hearing Dr. Cornwall's paper advocating the plan of treatment to which he refers. The paper was published in the *Medical Record*, bearing date August 2, 1913, and I have carefully read it. The plan there set forth is essentially orthodox. It does not differ materially from the symptomatic treatment of pneumonia now in vogue, except that it seems to lack a sufficient appreciation and understanding of the well-known shock to the kinetic system so frequently produced by the pneumococcus, resulting in dangerous and sometimes fatal gastric and intestinal paresis.

Dr. Louria has raised a question which I believe should be made the subject of special comment. He says, "Dr. Seibert asserts that these injections do not affect the pneumococci in the pleura, kidney or meninges, a statement which does not harmonize with the previous one that the pneumococci are affected in the blood." Seibert's elucidation of this important point renders the matter so clear that I am going to ask permission to quote his exact words. He observes: "In four of the next sixteen cases, the limitations of this treatment were observed. A sudden rise of temperature in two patients on the second and third days of treatment, respectively, proved to be due to pneumococcic nephritis, promptly subdued by appropriate doses of urotropin, while the camphor injections were continued and resulting in speedy recovery. In two cases of severe pleuro-pneumonia from the onset (aged thirteen and twenty-eight respectively) the camphor reduced the general toxemia markedly but did not prevent the accumulation of pus in the pleura, necessitating rib resection in the one on the fourth, and in the other on the eighth day after the initial chill, pneumococci in pure culture being found in the exudate, and both patients recovering. This proves that the camphor brought into the blood cannot prevent the as yet living organisms constantly entering the blood current from the affected alveoli, from colonizing in the renal and pleural tissue. Con-

sidering the fact that the camphor but gradually reduces the vitality of the pneumococci, nothing else could be expected, no more than that the very small amount of camphor, reaching those bacteria already established in the kidney or pleura could inhibit a pneumococcic nephritis or pleuritis." Thus it will be seen that the lack of harmony referred to by Dr. Louria is only apparent and does not really exist. However, I am glad Dr. Louria has spoken upon the subject because the discussion of it may serve to emphasize the fact dwelt upon by Seibert this evening and so frequetly insisted upon by him, that the camphor treatment in pneumonia has its limitations, and it may also serve to further emphasize the great necessity of instituting that treatment early in the disease in the hope that the dangers of secondary colonization of pneumococci referred to by Seibert may thereby be reduced to the minimum. I fully agree with Dr. Louria's remark that in a matter of such grave importance as the acceptance of any drug as a specific in the treatment of pneumonia, the profession must have overwhelming clinical evidence upon which to base conclusions. For that reason, if for no other, it is both interesting and gratifying to hear so experienced a clinician say that he stands ready to adopt the treatment. In closing I desire to express my sincere thanks to the Society for its attention and for the honor and privilege it has conferred on me by inviting me to be present this evening.

INTESTINAL OBSTRUCTION.*

By WILLIAM B. JOHNSON, M.D.,

BATAVIA, N. Y.

THE object of this paper is to emphasize the important points in the diagnosis and treatment of mechanical obstruction of the bowels.

Obstruction of the bowels is one of the most important subjects with which the surgeon has to deal. It kills more people than appendicitis. Indeed a large percentage of those who die from appendicitis, either with or without operations, die from obstruction of the bowels; a large percentage of those who have malignant disease of the bowels have as the immediate cause of death, mechanical obstruction. (I have never had a patient with cancer of the bowels come to me except for obstruction.)

According to Murphy, only 28 per cent. of the cases of obstruction requiring treatment are true mechanical obstruction.

For a clear understanding of the pathology of obstruction, a knowledge of the embryology, anatomy and physiology of the digestive tract is essential.

* Read at the annual meeting of the Medical Society of the State of New York, at Rochester, May 1, 1913.

The essential part of physiology is mechanical, not only of the large and small intestine, but of the abdominal cavity as well. In this connection the state of fluidity, of solidity of the intestinal contents, and the control of the motor mechanism of the bowels are important.

Symptoms of true mechanical obstruction, uncomplicated by other conditions, arise in a certain order, follow each other in an orderly sequence to a common termination, and the understanding of the symptoms and signs with their true meanings will enable the diagnostician to comprehend the symptoms as they arise and to predict the others to follow.

I have attempted to make this a bed-side and operating-table paper. Diagnosis and treatment are the topics emphasized.

The first symptom of true mechanical obstruction is always pain, of a colicy, cramp-like character, located around the navel. It is rhythmical in character as are all pains accompanying the contraction of unstripped muscle fiber. It is usually accompanied by vomiting and nausea, this nausea being reflex in character and caused by the mechanism of nerve control, which the second part of the digestive tract exercises over the first part. The third symptom, really a manifestation of the first, is stormy peristalsis, the interval between the peristaltic waves varying with the locality of the obstruction. Regurgitant vomiting, the so-called fecal vomiting, is a later symptom.

There is never a primary rise of temperature in uncomplicated mechanical obstruction.

The fifth and most important symptom, is the one which gives the name to the disease, inability to pass gas and fæces, and a desire to do so. These five symptoms coming in this order spell, "Obstruction of the Bowels," plainer than if it were printed on the abdomen of the patient in big red letters. This group of symptoms apply to the uncomplicated cases. Abdominal distension and collapse are symptoms of delay and should have no place in the diagnosis.

The successful surgery of acute mechanical obstruction of the bowels require better judgment and more skillful handling than most any other branch of urgent surgery, although the timely operation usually presents no serious difficulties.

The operative measures suitable to a given case depend primarily on the condition of the patient. With an early diagnosis and a patient with unimpaired reserve, a considerable latitude is given in the choice of procedures.

Just what each patient needs and can stand is a separate problem for each and must be left to the individual judgment of the surgeon.

When shall we operate, having made the diagnosis? At once. Where? On the bed in the worst cases, others should be moved no farther than from the bed to the table, the rest in a hospital.

How shall we operate? Local anæsthetic

alone in the worst. Local anæsthetic combined with general anæsthetic (anoci-association) in all others.

Team work, always very desirable, is imperative in these cases. The anæsthestist clinic nurse and first assistant should not change.

With the adoption of the principles of anoci-association the need for haste has disappeared, and deliberate well-considered work has given better results, both immediate and remote.

In locating the point of obstruction, finding the collapsed portion of the bowel and proceeding upward to the block is best and less liable to cause injury than handling the distended loops above the block.

In my own experience, about one-third of the cases seem to require the use of special operative measures, among which bowel drainage is the most important.

In an experience running over some fifteen years, in which I attempted to do complete surgery, in the presence of acute obstruction, the results were disastrous.

The use of a general anæsthetic, or attempts at the restoration of continuity, in the late cases, while giving a good-looking result, were almost uniformly followed by the death of the patient.

The adoption of local anæsthetics, and later the method of anoci-association, reduced my mortality in a most startling manner, and the later restoration of continuity of the bowel in the recuperated patient was a comparatively safe and easy affair.

In the worst cases a small incision in the midline and utilizing the presenting distended loop for drainage is generally all that can be done.

Obstruction in the first few feet of the small intestine must have a restoration of the continuity of the bowel as they are above the starvation death line.

If very near the duodenum the contents shall be removed through an enterotomy opening which must be closed. These cases are above the toxic death line of J. W. Draper. Border line cases with the obstruction at or below the starvation line if late and in serious condition are best treated by bowel drainage.

The requisites of any method of bowel drainage are: The method must be easy and should require no special apparatus; it should not be time consuming.

The danger of contamination of the peritoneum at the time of operation, or later, should be negligible.

If a water-tight joint at the opening into the bowel can be made ot once and maintained for five days, the putrid contents of the bowel above the obstruction can be drained off and normal saline introduced.

The method should not seriously interfere with the later restoration of continuity of the bowel.

All these requisites are more or less fully met by the utilization of the Murphy button, combined with the rubber tube. This gives immediate bowel drainage without the danger of contamination of the peritoneal cavity, a water-tight joint between the rubber tube and the lumen of the bowel lasting four or five days, through which normal saline for irrigation and absorption may be introduced, this measure in itself being of the greatest value, because it allows of the washing out from the bowel its putrid contents held above the obstruction, and the furnishing of an unlimited quantity of fluid to replace that lost by vomiting in a patient unable to absorb fluid.

I fully agree with Hartnell, that water starvation is one of the most important factors in the production of death in obstruction of the bowels, and I fully disagree with those who believe that it is beneficial to allow the contents of the bowel above the block to pass into the unobstructed portion below in order that some vital reaction between the secretion of different portions of the intestines shall occur.

Certain special methods of drainage are applicable to and useful to meet special conditions, such as the double-barrel shot-gun method of Mickulicz, where a tumor of the bowel needs to be removed as well as an obstruction overcome.

An opportunity to utilize the appendix vermiformus for drainage has occurred twice; once in adhesion obstruction at the hepatic flexure; once in volvulus occurring in cæcum mobile.

In as much as many of the cases of obstruction of the bowels are post-operative and due to adhesions with angulation or constriction beneath old bands left from post-operative adhesions, it would seem wise, in as far as possible, to prevent these cases.

It has seemed to me that the use of sterile olive oil left in the abdomen to retard the reformation of adhesions has been beneficial.

While I lay particular stress on bowel drainage, I wish to emphasize the point that it is a very special procedure, and is to be used only in the late neglected toxic cases as a bridge over which to carry the desperately sick patient to safety.

Discussion.

Dr. Fred. C. Rice, Ripley: The doctor's paper is one that cannot fail to impress us because of the importance of intestinal obstruction in that it is the cause of so many deaths. His point of emphasis on the diagnosis and treatment is well taken. In no condition is correct diagnosis and proper procedure of any more importance, and also probably in no other condition is one's surgical skill and judgment more severely taxed. In the paper the symptoms follow a certain sequence of events in an orderly manner. This is true in low down obstruction and when there is little interference in the circulation in the occluded intestine. However, when the obstruction is high up the symptoms and stages come on much more rapidly and a very few

hours may serve to bring about the last stage. A study into the cases which result fatally reveals the fact that the operation was too late, usually because valuable time had been lost in temporizing with cathartics, morphine and hot stupes. And in cases of hernia unsuccessful attempts at taxis. Cathartics in any acute abdominal pain are not given without risk and especially so in acute obstruction. They aggravate and hasten the symptoms and markedly increase the risk.

In this connection we are reminded of this statement by Ochsner appearing in a recent Journal that "For those lesions in which a cathartic is indicated, its postponement will do no harm, while for those lesions in which it is contra-indicated the cathartic may be a factor in the fatal outcome." If well-given anemas and lavage do not solve the problem, cathartics will seldom do so. Patients dread pain and it requires a firm stand to resist the appeals of the patient and family to use opiates for its relief, but they should be given to understand the false sense of security in morphine, and that an accurate diagnosis is a thing of most importance, and, also, that the earlier it is made the better the chances for successful surgical treatment. In cases in which the diagnosis is doubtful, and there are such, it would seem that exploratory operations would be indicated; certainly if ever justifiable it is here where there is everything to gain by it.

Granted that the diagnosis has been made, operation should be immediate, and the attending physician is never justified in allowing the condition to become more extreme. The proper surgical procedure is modified by the nature of the obstruction, its position and the presence or absence of complications. In the extreme cases which are all too common, I believe that simple drainage of the bowel is all that should be done at first, and more complete surgery left to a later time when the patient's condition is not so critical. I have been able in three cases to do an enterostomy under local anæsthesia. All of these cases had gone on to fecal vomiting, and their toxæmia was extreme, so much so that a general anæsthetic would have been more than the patient's condition would permit. In all these cases a later and more surgical procedure was completed. I am glad Dr. Johnson spoke so firmly of the importance of not letting the intestinal content above the block, to go into the bowel below.

Whether or not we believe that water starvation or toxæmia produces death in these cases, it is at least a known fact that the intestinal secretions above an obstruction are poisonous and nothing but harm could follow their retention within the patient's intestinal tract. Experiments reported in the Johns Hopkins Hospital Bulletin, of last November, proved beyond question the high toxicity of these secretions, and also that the higher the obstruction the greater its degree.

If we drain the bowel and then add salt solution we have met both hypothesis as to cause of death, and we have done the best for the patient. I think surgeons should understand that progress in surgery includes the education of the public to the fact that satisfactory surgery is early surgery and not last resort surgery.

We cannot lay too much stress upon the iniquitous practice of using morphine for the relief of abdominal pain in cases of doubtful diagnosis. We have to thank Dr. Johnson for bringing to our notice this very important subject and his conclusions from his remarkable experience.

THE TRUE VALUE OF OPERATION FOR CANCER.*

By EDWARD MILTON FOOTE, M.D.,

NEW YORK CITY.

IN order to estimate the true value of operation for cancer we must know first, the object of the operation, and second, its result.

Speaking broadly, there are four reasons for operation for cancer, which may be present in the mind of patient or surgeon.

1. The complete removal of the cancer and cancer-bearing tissue: the so-called radical cure.
2. The establishment of a diagnosis.
3. The relief of some special symptom, such as hemorrhage or discharge from an ulcerating surface, or the closure of a sinus, or the division of a stricture, or the removal of a disfigurement.
4. Certain social ends: to keep up the patient's hope or to satisfy the family that something is being done, etc.

I am tempted to add another reason, which probably exists in the mind of the patient and his friends oftener than they would like to admit, and that is, the possibility that the patient may die from operation. But if this is admitted as a reason for operation, it will take its place among the social ends in class 4.

Now it is obvious that the choice of operation should depend in no small degree upon which of these four reasons exists. The first reason, namely, the possibility of a complete removal of the growth, justly outweighs all other considerations when it is present. In order to accomplish this end, the radical operations have been made more and more extensive, with a corresponding increase in operative mortality and post-operative debility. It is manifest that this tendency can be carried too far; that the price paid for possible immunity may be too great; especially in the case of a tumor beyond the earliest stage. The more extensive the growth the more extensive must be the opera-

* Read at the annual meeting of the Medical Society of the State of New York, at Rochester, April 29, 1913.

tion, and the greater will be the operative risk, while the chance of a radical cure grows less and less.

The second object for which one may operate in cancer is the establishment of a diagnosis. If the growth is small, it may be entirely removed, so that diagnosis and complete removal are effected at the same time.

It was once believed that a small portion of a tumor could safely be extracted by a punch, or cut out through a small incision and submitted to microscopical examination.

The examination of a small piece of tissue may give misleading results, especially in incipient or doubtful cases, where a wrong diagnosis will do the most harm. Furthermore, cutting or punching through the normal tissue planes which surround a malignant growth, has in some cases, hastened its spread into these planes; so that this risk has to be considered in such a diagnostic procedure; and it is generally conceded that a patient should not be subjected to this risk, unless he is beyond the possibility of a radical operation.

Another and better form of diagnostic operation, is the exposure of a tumor; the examination of a portion of it by frozen section, and the completion of operation according to the report of the pathlogist. By this means, the surgeon sometimes gains knowledge most useful to him, and it gives the patient and his friends a feeling that an extensive operation will not be unnecessarily performed. The limitations of the method are the time consumed (10 to 30 minutes), the possibility that the surgeon has not selected a characteristic bit of tissue for examination, and the difficulty the pathologist sometimes experiences in making a quick diagnosis.

Operation for cancer which is beyond the probability of radical removal, is a subject worthy of most careful study.

But what is the usual procedure, when a patient comes with an advanced primary growth, or with a recurrence, and asks for help. The surgeon, according to his temperament, gives a rosy prognosis or a guarded one. At all events, he promises to do what he can. Now what he does, is usually to follow the technic of a radical operation, just as far as he thinks the patient's recuperative power will permit, and then closes the wound as best he may; perhaps saying to himself or to an assistant: "Well, I got the most of that out."

This whole conception of operation under such circumstances is wrong. One should rather analyze the case and adapt his procedure to meet the difficulties which are present.

All of the patients in the class we are now considering are doomed to disappointment within a year or so, in respect to a complete cure. Hence a prompt recovery from operation, and good health for as long a period as possible, are the chief aims of the operation; not the removal of extensive fascial planes, which at a late date may become cancerous, provided the patient lives long enough.

One cannot hope to formulate specific rules to cover the wide variety of conditions, which cases of advanced cancer present to the operator; but there are certain general principles which ought certainly to be regarded.

1. The removal of the visible growth is desirable, in so far as this can be accomplished without sacrificing important muscles, nerves, etc. Although one need not feel obliged to remove so wide a margin of sound tissue as is the rule in the radical operation, the natural limits of the growth should be removed with it whenever possible. For example: If it is attached to periosteum, the periosteum should be removed too; if it infiltrates a muscle, at least the affected part of that muscle should be removed.

2. The wound should be so shaped that it can be entirely closed. Skin grafts or a granulating wound are allowable in a radical operation; whereas a partial operation, which leaves a patient with a cancerous ulcer, which did not previously exist, must usually be accounted a failure. If drainage is required, it should be such that there will be no permanent sinus, whenever this can possibly be accomplished.

3. Lymph glands should be removed if they are readily accessible, even if deeper ones which are known to be involved are left behind. Thus, in some cases of carcinoma of the breast with axillary glands involved in chains running up to the points where the vessels perforate the chest, the patient derives more benfit from a moderate clearing out of the axilla, with preservation of at least a part of the pectoral muscles, and plenty of skin to close the wound, than she does from a very extensive operation with its higher mortality, longer convalescence, and limited usefulness of the arm. Why not let such a patient get up in five days, leave off bandages in ten, and enjoy good health for a year or perhaps more, rather than to squander her potentials of happiness in an effort to reach the unattainable?

4. It is of the utmost importance to save the patient's vitality by making the operation short, keeping his body warm, using a minimum of anesthetic, and keeping the loss of blood down to the smallest possible point. Such a patient's blood is his capital; which if lost, he can replace only in a slight degree. The operator who squanders this blood capital, therefore does him an irreparable injury. The careful operator will so perform his work, that in most cases, within a few days, the patient will be able to enter into such enjoyment of life as conditions permit. An operation which entails a convalescence prolonged over weeks or months, may be worth while, if it promises even a chance of life prolonged for many years. If a patient has at the best only six months or a year of comfort before him, it is obviously bad management to compel

him to devote a quarter of that time to recovering from an operative shock; especially when there is the added fact to be reckoned with, that the limit of his power to recover is easily exceeded.

5. If operation is performed for a special object, such as the relief of a plastic defect, or to reduce the size of the mouth so that the saliva will not escape, or to close a sinus in the cheek, or to lessen the blood supply of the cancer, it is generally wise to limit the operation to its particular object, resisting the temptation to excise a few portions of the tumor, because they are easily reached. Such excisions, unless they are so made as to include the growing edge of that part of the tumor, are often worse than useless, as they waste the patient's blood and do not prevent recurrence for a period long enough to repay him.

6. Plastic operations involving skin which is actually in contact with a cancerous growth, may be successfully performed; and in case of slowly growing tumors, they are often well worth while. There are instances in which such patch-work frequently repeated has kept a man comfortable and more or less presentable for years, after the possibility of any radical removal was exhausted.

7. Curettage or scraping of an ulcerating cancer is of doubtful efficacy. Sometimes it may be of use in checking hemorrhage, but usually it causes a positive blood loss at the time of its performance which can ill be spared.

In looking over the published reports of operation for cancer, we are again struck with the fact that the possibility of failure of a radical cure dominates the surgical mind.

Duration of life following operation and freedom from recurrence, are indeed the two great important facts which can be readily tabulated, and about which there can be little difference of opinion. But to the patient, improved function and improved appearance are equally important, although very difficult to tabulate or record accurately. The Scotch have a saying that "No man should thin his own turnips." Truth would be the gainer if no man estimated his own operative results; and yet in most cases, no one else can do so.

In the records of these cases, every endeavor has been made to minimize subjective opinion, and to give the exact facts. The condition of all of the patients has been noted at the end of six months to make comparisons the more easy. All patients operated upon by the writer, or his house surgeon, Dr. J. Howard King, in hospital and private practice for real or suspected malignant disease, between April and October, 1912, have been included in the list. The difficulty of keeping in touch with hospital patients is well known. By making almost monthly inquiry all of these, with few exceptions, have been followed.

It would take too much time to give abstracts of these individual records so they have been grouped, and the results in the various groups will be noted.

In the first group are included all operations in which the local growth, whether primary or recurrent, was apparently entirely removed. In a few cases the usual radical operation was somewhat modified, because of the strong probability that metastases existed beyond the operator's reach. Such patients undoubtedly have recurrences awaiting them, even though they may not show for many months. These are the patients for whom one wishes to obtain a quick recovery from operation, by moderating the severity of the extreme radical type.

There were 27 operations in this radical group performed upon 25 patients, two of the patients having tumors in different parts of the body.

There was no mortality from these operations.

There were 10 operations for epithelioma of the skin in various parts: 4 for epithelioma of the lower lip: 2 for epithelioma of the mouth; 6 for carcinoma of the breast; 1 for carcinoma of the uterus; 2 for sarcoma of the mouth, and 1 for a recurrent sarcoma of the shoulder; and one for fibro-chondroma of the foot.

The condition of these patients at the end of six months, as nearly as could be ascertained, is as follows:

Examined and found without evidence of disease	13
Reported by letter to be free from disease	6
Have certain recurrence	2
Died from recurrence	2
Passed from observation	2
*Total number of patients	25

The pathological diagnosis in these and other cases was made by Dr. D. S. D. Jessup from microscopic sections.

The fibro-chondroma was diagnosed by one pathologist as mixed-cell sarcoma.

In the second group are placed six operations performed for diagnostic purposes in conditions of doubtful malignancy, although four of the patients had had previous operations. All of these patients recovered promptly from the slight operation.

Their condition at the end of six months was as follows:

Well, no sign of cancer	2
Well, after another operation which failed to reveal cancer	2
Died, probably from undiscovered cancer	1
Passed from observation	1
Total number of patients	6

*At the end of 12 months the condition of these same patients was as follows:

Examined and found without evidence of disease	11
Reported by letter to be free from disease	4
Apparently free from disease after another operation	3
Has certain recurrence	1
Died from recurrence	4
Passed from observation	2
	25

In the third group are included the operations performed, for some special object, upon patients whose apparent tumor or tumors could not be entirely removed. While the social and physical reasons for operation should both be considered in deciding for or against an operation and in determining the nature of such operation, they so often co-exist that it is quite impractical to separate these patients into two classes.

There was no operative mortality among the 24 patients of this group, as there ought not to be. One is justified perhaps in taking extreme risks in the attempt to accomplish a radical cure. There is not much excuse for sacrificing a patient's life in the attempt to give him temporary relief. While making all allowance for unknown weaknesses of a patient's organs, and unforeseen accidents during operation, it is still true that the operative mortality in this type of operation can be kept near the zero mark, if the surgeon carefully estimates the patient's power of resistance before operation and adheres to his resolve not to go beyond this point.

The condition of these patients at the end of six months was as follows:

Period of improvement still exists	2
Period of improvement has passed	8
Have died (2 after operations by other surgeons)	11
Passed from observation	3
Total number of patients	24

A careful estimate of the period of local improvement which may fairly be credited to operation upon the 22 patients who did not pass from observation, shows an average per patient, of two and one-half months. As only two patients at the end of six months still showed improvement, this average in this series cannot be raised very much. Such a slight gain may seem to a doctor hardly worth while, but the patients rarely take this view. They are not only most grateful for any relief, but many of them take great pride in every temporary victory in a fight in which they know they must ultimately lose.

The question of a possible prolongation of life by these partial operations is an interesting one, but this series of cases does not present sufficient data for its consideration at the present time.

In conclusion it may be said, that not every patient with a recurrence should be operated upon. There should be some special object to be obtained by such operation. The operation should be shaped to meet such special object, and should not be patterned after the radical operation. All patients who have been operated upon for cancer, should be followed month by month, and single recurrences favorably situated should be promptly removed.

Discussion.

Dr. William Seaman Bainbridge, of New York City, said in part: The position taken by Dr. Foote in this clear and able paper is sound and conservative. By virtue of an extensive experience he is qualified to judge of the requirements for surgical intervention, the indications for, and the immediate and remote results of this method of treatment. The groups of cases presented are of value as being selected from a very broad field of observation.

Certain points in the paper might have been elaborated to advantage, perhaps, in order to obviate misunderstanding. Some of these I shall consider categorically.

1. *The Note of Warning with Reference to the Possibility of Going too Far in the Effort to Completely Remove a Cancer or Cancer-Bearing Tissue.*—In view of the fact that in the earlier or so-called removable stages of cancer failure to completely eradicate the diseased tissue means inevitable recurrence. Sooner or later, the question may be asked, "Is any price too great for possible immunity from this terrible disease?" Ruthless sacrifice of nerve and muscle, or other tissue, is certainly to be condemned; on the other hand, "complete removal" should always outweigh other considerations—even retention of function, unless, perchance, the patient or relations and friends decide that death from cancer is preferable to loss of function of a limb, an eye, the tongue, or other important structure. In such cases the surgeon must leave the decision with those most concerned. The inexperienced operator cannot always recognize that fine line of distinction between diseased and normal tissue ability to judge of which constitutes the unteachable element of diagnostic skill that comes only with long and careful experience. But, for example, given a woman with no contra-indicative conditions, such as extreme age, debility, serious heart or kidney lesions, etc., with cancer of the breast in a removable stage, no operative risk should outweigh the possibility of recurrence. If, as rarely, fortunately, but nevertheless sometimes, occurs, complete removal of cancer-bearing tissue necessitates resection of nerves and muscles to such an extent as to lessen or destroy function, the liability of recurrence in the absence of such extensive dissection ranks above all other considerations. I have long advocated free excision, even to the extent of what may be called surgical risks, in order to accomplish the complete eradication of the early cancer.

2. *Operation for Diagnostic Purposes.*—Too much emphasis cannot be placed upon the first point made by Dr. Foote, *viz.*, the harm done by cutting into a growth, the breaking down of nature's protective wall, so to speak, separating the diseased from the healthy tissue. This error of surgical technic is still being made despite all that has been said upon the subject. It is true, as Dr. Foote has stated, that a better form of

diagnostic operation consists in the exposure of the tumor, the examination of a portion thereof by frozen section, and the completion of the operation in accordance with the pathological findings. The time involved (10 to 30 minutes) is hardly a contra-indication or a limitation to this method. The possibility of error, however, is a very serious limitation. In view of the fact that, even in small growths, it is sometimes necessary to examine many sections from different portions of a tumor before diagnosis of nonmalignancy is made, negative evidence is not sufficient to warrant a surgeon in closing the skin over a tumor which has once been incised. My own feeling in this matter is that the tumor with a margin of healthy tissue should be removed first and the sections studied afterward. Many cases in point might be cited. In one which I recall a small nodule on the tip of the tongue, together with a wedge-shaped section of apparently healthy tissue surrounding it, was removed. Microscopic examination revealed the malignant character of the growth itself, but sections of the remainder of the wedge-shaped piece of tissue revealed no malignant cells until the very apex of the wedge was reached. There a nest of suspicious cells was found. The next day a longer angle was made by the removal of another small section at the apex of the wedge-shaped incision. The frozen section method might have revealed the malignant character of the tumor itself, but it would hardly have sufficed to demonstrate the extension of the disease to apparently healthy tissue. Early recurrence, with probable increase in virulency, would no doubt have occurred, whereas, by the fixed method, the true state of affairs was discovered. The patient has remained free from recurrence for six years. Many similar cases might be cited. In another case, cancer of the tongue, the negative diagnosis by frozen section was accepted by the physician. The patient was dismissed as having no cancer. When the man consulted me a few months later he was in such an advanced stage of cancer that, despite the employment of surgery, the enzyme treatment, etc., he died from extensive cancerous involvement. I do not wish to be considered as opposed to the method of examination by frozen section. Under some circumstances it must be resorted to, and it may lead to an entirely correct diagnosis. I do wish, however, to say that negative microscopic evidence should never be accepted in the face of positive clinical evidence, and that the frozen section method may be full of pitfalls for one who places too much confidence in it.

3. *Operation for Cancer Which is Beyond the Probability of Radical Removal.*—Our esteemed colleague is inclined here, it seems to me, to be a little too skeptical. With all the adjuvant methods of treatment now at our disposal, the scope of cancer surgery with respect to complete cure has greatly increased, and one must be extremely guarded in the prognosis as to the probability of radical removal effecting a cure. It is only in very advanced cases of cancer that we now accept that the chief aims of operation are prompt recovery from the operation, and good health for as long a period as possible. Sometimes, even in cases of pelvic cancer which are too far advanced for a Wertheim operation, life may be prolonged for more than a year or so, by means of arterial ligation with lymphatic block. With as free excision as is feasible, plus arterial ligation with lymphatic block, the application of various methods of electrical treatment, or other adjuvant measures, if complete cure is not effected, the predicted disappointment may certainly be postponed for a much longer time than was formerly proposed. In many advanced cases, too, by removal of all surface manifestations of the disease the patient may die from internal metastasis, which is, as a general rule, more merciful than death from external cancer.

THE NEED OF INDIVIDUALIZATION IN OBSTETRICS.*

By FRANKLIN S. NEWELL, M.D.,

BOSTON, MASS.

ONE of the grave reproaches under which the medical profession rests to-day is that, although marked progress is being made in most branches of medicine and surgery, little or no advance is being made in the art of obstetrics, except by a small group of men. The great majority of the medical profession seem to believe that since childbearing is a natural function a physician needs no special training to fit him to practice obstetrics, since nature can be trusted to safeguard the parturient woman, except in the event of rare and unpreventable complications. It is not at all uncommon to hear a man, well equipped in some other branch of medicine, scoff at the idea that any special preparation is necessary for the proper practice of obstetrics, and yet we not uncommonly hear soon afterwards that this same practitioner has had hard luck in one or more obstetric cases, and has lost either mother or baby or both. This so-called hard luck is definite evidence that his knowledge and skill were inadequate to the demands made on them in the particular instance, and in the majority of such cases a more thorough knowledge of the obstetric art, combined with a more careful study of the needs of his patient would have led to a favorable outcome. This indifference to the needs of the patient is undoubtedly due to the fact that childbearing is a natural physiological function in normal women, and the infallibility of nature's method has been so deeply impressed on the minds of the majority of the profession that

* Read at the annual meeting of the Medical Society of the State of New York, at Rochester, April 30, 1913.

they cannot see the possibility of any advantage accruing to the patient from any departure of nature's method. Furthermore, they do not realize that a considerable proportion of the women in every civilized community have ceased to be normal, and that the bad results are due to a lack of appreciation of the conditions present and are not unavoidable accidents.

We must admit, however, that certain bad results are unavoidable. Pulmonary embolus may occur in spite of all that we can do to prevent it. Antepartum death of the child may occur from intrauterine pressure on the cord or from premature separation of the placenta, complications which cannot be foreseen, but that is no reason for not trying to foresee and prevent every possible complication, and thus giving our patients the benefit of every means at our command to insure a good result.

A great improvement in obstetrics would be made if the profession as a whole could be made to realize that every parturient woman should be considered as a doubtful risk, in whom any complication may arise, and studied as such, instead of being considered as a normal patient in whom no abnormalities need be looked for. No two cases are exactly alike, and, therefore, the care which a patient receives should be adapted to her needs and not to those of some other patient or group of patients, if the best results are to be obtained. The needs of the individual patient can only be ascertained by a careful study of her physical and nervous condition, and the environment in which she has been brought up and in which her future life must be passed, and on the results of such a study must the care given each patient be based, and nothing can be less intelligent or more likely to favor bad results than the adoption of a routine in the caring for obstetric cases.

In hospital practice where a large number of patients are cared for it is almost inevitable that the individual should receive comparatively little attention and that patients should be treated in groups, but that is one of the misfortunes of hospital work. In private practice, however, there is no excuse for not carefully studying each individual patient and selecting the treatment best suited to her needs. This, however, requires that the obstetrician take his work seriously, and shall have fitted himself to give his patient the care which she demands. The majority of the men who are doing obstetrics at the present time are not really interested in the work, and trust to luck that no complication will arise in a given case, rather than try to foresee and prevent such complications. No conscientious surgeon would consider himself qualified to perform a complicated operation without an adequate preliminary training, but the average medical practitioner feels himself qualified to take obstetric responsibilities which involve the life and health of two patients, and is willing to attempt serious operations which are far more difficult and require greater technical knowledge and skill than the average surgical operation without any attempt to fit himself for the problems he must meet. The reason for this indifference to the well-being of the patient is undoubtedly the recognized fact that the great majority of women will come through labor alive and with a living child, if left to the unaided efforts of nature, and, therefore, the average practitioner does not feel it necessary to fit himself to meet the occasional emergency which involves the life of either patient, and he almost never considers his responsibility in the future health of his patient, provided only she and her child come through labor alive. Faulty teaching in our medical schools is largely responsible for this attitude, because the students are instructed that such an overwhelming majority of patients will come through alive if left to the unaided efforts of nature that it seems a waste of time for the man who does not mean to be a specialist to fit himself to deal with the occasional complicated problem, since he can usually get some one else to assume the burden for him when he finds that he is unable to cope with it, although by the time he has reached this conclusion irreparable damage may have been done. Another fault in our teaching, it seems to me, lies in the fact that most of our teaching is based on hospital patients, who are largely of the peasant class and more or less uncivilized, so that the average physician enters practice largely ignorant of the fact that the civilized woman, who is often nervously overdeveloped, may require entirely different treatment in the presence of the same physical conditions as her less civilized sister, unless she is to show serious effects from the strain she must undergo.

The object of the obstetrician who assumes the responsibility for any case must be three-fold.

The preservation of the maternal life is, of course, the first object to be considered in the care of a case, and there can be no doubt that the loss of a patient during parturition usually means that the needs of the individual patient were not appreciated, and that the complication which caused her death was not recognized at a sufficiently early date for her to receive the care she needed. Pulmonary embolism, of course, may occur at any time following labor, and unless it is secondary to a septic phlebitis is an unpreventable accident. It is unpreventable, indeed, if it follows a septic process, but the sepsis is almost always due to some fault in technique on the part of the attendant, which should have been avoided. The other obstetrical complications which commonly lead to maternal death, such as hemorrhage before or after delivery, toxemia, and infection can usually be avoided or at least treated successfully, if the patient is under sufficiently close observation and the attendant is competent. Danger to the patient arising from cardiac complications or other chronic diseases

should be recognized early in pregnancy, and in serious cases the ending of the pregnancy may be necessary to save the patient's life, but it is never safe to assume that, because another patient with apparently a similar organic lesion has come through her pregnancy successfully, the given patient will do equally well, until every possible means at our command has been exhausted in the attempt to palliate the condition. Of course supervening acute diseases will cause a certain mortality both of mothers and children, and this will prove unpreventable in the majority of instances, but the regulation of the patient's life may render her less susceptible to infection and less likely to expose herself to it, and thus be of considerable value.

The second object of the obstetrician is to insure the birth of a living, uninjured child. This is a most important aim, but none the less it must be considered as distinctly secondary to the preservation of the maternal life. It will happen in rare cases that the interests of the child must be sacrificed for those of the mother, and the obstetrician will be perfectly satisfied if the maternal life is preserved, no matter what the outcome for the child, but such a result must mean that the conduct of the case has not been entirely successful, although the attendant conditions may have been such as to make even this partial failure a satisfactory result. In our ignorance of the etiology of certain obstetric complications we are not able to apply adequate preventive measures in all cases, and the sacrifice of the baby may be necessary to save the mother, but such a result means that owing to our ignorance on certain points we are forced to be content with a partial failure, and obstetrics will never be entirely successful until these partial failures can be eliminated or at least much reduced in number.

The third object of the obstetrician is to bring the mother through her pregnancy and labor in such a manner that when her convalescence is completed she is ready to take her place in the grade of society to which she belongs in as good a condition to sustain the burdens of her ordinary life as before pregnancy began. We are all of us familiar with the fact that nature unaided is very often inadequate to meet this indication, and our aim must be to have such knowledge of the needs of each individual patient as will enable us to supplement nature when necessary. There is nothing in medicine which requires a more perfect judgment, and the most successful obstetrician will be the man whose judgment as to the needs of the individual and the methods which will best meet those needs is least often faulty.

In following obstetric literature I have gained the impression that the preservation of the maternal and fetal life receives the entire attention of the average practitioner, and that the future welfare of the mother is so overshadowed by the other indications as to receive comparatively little attention. From the standpoint of the patient, however, her health may be nearly as important as her life, and a condition of chronic invalidism, due to a lack of proper care during pregnancy and labor, is just as clear a confession of failure on the part of the obstetrician to appreciate the conditions present in the individual patient as is the loss of either mother or child.

To one who studies his patients carefully and notes the individual differences between them, it must be clear that uniformly good results can only be obtained by the careful, intelligent study of each patient. Errors of judgment will be made by the most careful observer, but these errors will be reduced to a minimum if each patient is treated by herself and not as a member of a class to which certain general principles are applicable. In order to give his patients proper care the obstetrician must be familiar not only with the physical and nervous peculiarities of his patients and the way in which they have reacted to such strains, both nervous and physical, as they have been subjected to in the past, but he must be familiar with their mode of life and the conditions under which their future lives must be passed before he can give them adequate care. He may find it possible by proper advice to so regulate a patient's life as to materially alter an improper method of living, but generally speaking the most he will be able to do will be to adapt his methods to the patient rather than to change her attitude toward life.

The careful oversight of pregnancy is one of the most important items in the care of an obstetric case and is probably neglected more than any other portion of the parturient state. It is not at all uncommon to hear that a physician has not seen his patient for five or six weeks or even longer, and that although he asked her to send a specimen of urine for examination and to report at his office from time to time she has not done so, and when he finally sees her he is not infrequently confronted with a serious complication, which might have been entirely avoided or successfully treated if his patient had been under proper supervision. This is of course the fault of the patient if she has not consulted any physician until late in her pregnancy, but if she has once placed her case in a physician's hands he must share the blame with her if he allows her to neglect his advice.

The average pregnant woman seems to feel that supervision of the pregnancy is unnecessary, as she usually is entirely ignorant of the possibilities of mishap. It is, therefore, part of the duty of the attending physician, for the patient's good and almost equally for his own, to insist that his patient report to him at regular intervals so that he can study the progress of the pregnancy, and note any departure from the normal in its early stages, and thus be in a position to determine what care the patient needs during the pregnancy, and to estimate her needs at the time of labor. Few patients will be found who will disregard the injunctions of their physician

if the reasons for the advice are carefully explained to them, but most women are extremely ignorant about the hygiene of pregnancy, and what often seems to be disregard of the simple laws of health is due to ignorance, and unless the physician is in a position to appreciate this fact and to correct it as far as possible he may be seriously disappointed by the ultimate results in a given case. When a patient has been properly watched during pregnancy the attendant is in a strong position. He is able to say definitely whether his patient is or is not physically normal. The effect of the pregnancy on her physical and on her nervous condition is known and he can seldom be surprised by being suddenly called and finding his patient in a serious condition, since his constant observation of her will have shown him any abnormality in its early stages. By his preliminary examination in the latter weeks of pregnancy he knows, or should know before labor begins, whether any disproportion exists between the size of the child and the maternal pelvis, and from his previous observations he is able to estimate more or less correctly what the character of the labor will be, and what the effect of labor will be on her nervous and physical condition. With this thorough knowledge of his patient he is in a position to give her the care at the time of labor which she needs, and will never be placed in the unfortunate position of assuming a grave responsibility for a patient about whom he knows little or nothing. If she is of a nervous, high strung temperament, reacting in an exaggerated manner to minor impulses, she must be treated in an entirely different manner from the patient who is phlegmatic and who has never shown any marked reaction to the strains which have been laid upon her. To the patient whose nervous equilibrium is unstable the pain of even a normal labor may prove an excessive burden, and it may be necessary to shorten labor by operative means or even to do away with it altogether and to resort to a surgical delivery in order to save her from the nervous exhaustion which may result from a labor of even moderate severity, even though no physical abnormality is present. If she has reacted seriously to such strains as have fallen to her lot in the past, and particularly, if her powers of recuperation are poor, she must be recognized as being unfit to be subjected to any avoidable strain and be handled accordingly, whereas the woman who has always recuperated fully and rapidly or who has never shown any sign of failure under strain can be considered as a good risk, and allowed to undergo even a severe labor without fear. If the ordinary conditions of the patient's life are such as to tax her powers of resistance to the utmost, both her life during pregnancy and the conduct of labor must be so regulated as to do away with all possible strains, since many of these patients who are living under constant high tension have little or no reserve power, and if their slight powers of resistance are once broken down it may take months or years for them to recuperate, if indeed they ever recover entirely.

In a patient of this class it must be particularly remembered that she will probably return to the life which she has temporarily abandoned at the earliest possible moment, and that no amount of advice is going to materially alter that life, until either a nervous or physical breakdown renders a change imperative. It is particularly important, therefore, in patients of this class to so regulate the pregnancy and labor that all possible strain shall be removed, since if her equilibrium is seriously disturbed it may become necessary to remove her entirely from the burdens of her ordinary life until her balance is restored, which may take weeks or months even, if it is ever entirely successful.

The obstetrician who treats all patients of a certain physical equipment in the same way will be much disappointed at the results which he will obtain in certain cases, but if he devotes any thought to his work he must realize that many unsatisfactory results might have been avoided if he had studied his patient more carefully and suited his methods to her requirements.

There is no doubt in my mind but that many cases exist in every civilized community who are relatively or absolutely unfit for childbearing on account of either nervous or physical abnormalities, and in these cases the methods employed in conducting the pregnancy and labor are of the greatest importance. The common saying that 95 out of every 100 cases will go through labor without trouble, even though they receive little or no care, has been responsible for a great deal of harm. It is undoubtedly true that the lives of both mother and child will be preserved in the great majority of cases in the absence of physical complications, even though the patient has received no care, but if we are to do our full duty by our patients and get the best results possible, we must go further and consider how to prevent childbearing from having serious after effects on the lives of our patients, particularly those who belong to the class of the unfit in whom comparatively minor lesions may be expected to produce exaggerated reactions.

It is a matter of common knowledge that improper care or better, perhaps, a lack of proper care at the time of labor furnishes the gynecologist with most of his operative material, and the neurologist also benefits largely from the blind acceptance of the dogma that childbearing is a normal physiological function, and that no special training is necessary to fit a practitioner to oversee it properly. Every gynecologist is familiar with the fact that many patients come to him who show marked lesions as the result of childbearing with comparatively slight symptoms, and he also sees other patients in whom exaggerated symptoms result from minor lesions. This difference among patients points definitely to the fact that obstetric patients must be treated

as individuals and not as members of a class, to be judged merely by the question of whether any disproportion exists between the size of the child and the maternal pelvis, and that to obtain good results the needs of the individual must be ascertained and the care which she receives regulated in accordance with her needs. If obstetrics is to be done intelligently we must not wait for the patient's powers to fail before giving relief. In the patient who is comparatively normal no harm will result from allowing her to go through labor trusting to her own powers, simply terminating labor by an easy low forceps operation or allowing her to terminate labor naturally as may be deemed wise. In a patient of equally good physical equipment the nervous equilibrium may be so unstable that interference may be necessary comparatively early in labor to avoid unpleasant consequences, and in the exaggerated cases it may be unwise to allow a patient to go into labor at all on account of the marked reaction which the patient has shown in the past to such strains as she may have been subjected to.

It may seem radical, perhaps, to advocate Cesarean section when no physical indications for the operation are present, but the fact has been repeatedly demonstrated that certain patients will undergo and recuperate rapidly from a surgical delivery who have been more or less seriously invalided by the strain of a prolonged labor in the past, and Cesarean section, furthermore, has the advantage of avoiding lacerations with their attendant symptoms and the possible necessity of a secondary operation to make good the obstetric damage. The prejudice which exists among certain members of the profession against Cesarean section on the ground that it is an unnatural method of delivery, and, therefore, never to be employed except for physical necessity seems to me beside the point. In our modern civilization we are not dealing with normal, natural women, and the abnormal patient must be cared for in an abnormal way, if good results are to be obtained. There is no question to my mind but that the results of Cesarean section in competent hands are better for both mother and child than the results of difficult forceps operations or versions, and since the object which the obstetrician has in view is the best good of his patient, it seems time to depart from the traditions of obstetrics and give our patients the care best suited to their needs.

The practitioner who follows blindly the teaching of the past will undoubtedly prefer to deliver every patient through the natural passages, if possible, although this may involve such a difficult operation as to place the mother's life in jeopardy and possibly lose or injure the child, and will pride himself on each case in which he succeeds in extracting a living baby by a difficult pelvic operation, entirely ignoring the fact that to accomplish his object he had subjected both mother and child to a serious risk of loss of health, if not loss of life, and will quote the result as a triumph of conservatism.

This brings us naturally to one of the great questions in obstetrics at the present time. What is real conservatism? The so-called conservative claims that childbearing is a normal physiological function which every woman is fitted to fulfill as long as no actual disease or marked physical abnormality is present. Such an attitude of mind means to me that the so-called conservative has devoted little or no thought to the future well-being of his patient and simply considers that the outcome of her labor is successful as long as both mother and child are fortunate enough to be alive.

The obstetrician who advocates delivery by surgical means for a patient in whom no physical indication for operation can be demonstrated is classed as a radical, and the term is employed as one of reproach, implying a mental attitude which denies the sovereign power of nature and advocates the substitute of surgical methods of delivery for the natural processes.

It seems to me, however, that the above definition of conservatism is open to question, since the first object of every obstetrician in the care of a case should be the best good of his patient, and every patient whose health suffers from the effects of childbearing or whose baby is lost is an example of a lack of conservative care, since such a result shows that the needs of the individual patient have not been appreciated. Unfortunately we all see such cases in our practice.

The essential difference between the so-called conservative and the so-called radical is that the conservative adheres blindly to the methods of the past and refuses to give his patients the benefits of modern progress with the result that the gynecologist sees many patients who date their ill health from childbirth. Each patient who gives a history of this sort is an example of improper obstetric care, or at least of a lack of proper care.

The so-called radical is trying to give his patients the benefits of modern progress. He may go too far and perform some unnecessary operations in the fear that his patients cannot safely undergo the strain which a possibly difficult labor may entail, and he will undoubtedly treat many border-line cases according to surgical methods perhaps unnecessarily instead of running serious risks with them by following out traditional procedures.

It seems to me, however, that the essence of true conservatism lies in the careful study of the patient and the selection of the method of treatment which seems to offer the least risk of a bad result.

I do not claim that the majority of patients, or even any large minority, should be subjected to a surgical delivery, but I do believe that there

exists in every civilized community a considerable number of women who should be spared all possible strain, and for whom the strain of labor may be a serious burden, and in whom the danger of lacerations, with their attendant symptoms, are to be avoided by every possible means. In other words, every patient should be studied as an individual, and the greatest care should be taken in adapting the methods employed in the conduct of her pregnancy and labor to her nervous and physical equipment, both from the standpoint of the immediate result and her future well-being.

Errors of judgment will undoubtedly be made by every obstetrician, but it is only by such a study that we can raise the standard of obstetrics. That the standards of obstetrics need to be raised seems to me an unanswerable proposition. When thoughtful physicians are willing to say publicly, that the training and licensing of midwives is an economic necessity, because the poor can receive better care and be placed in less danger, if cared for by midwives than by the members of the medical profession they are in a position to employ, there can be little doubt but that the standards of obstetrics need to be changed, and one of the important steps in making this change, is that our students should be taught to consider their patients as individuals, each of whom may require special treatment, instead of grouping them together and assuming that every patient can take care of herself if left to nature. In addition every student should be made to realize that if he means to handle obstetric cases he must fit himself to take proper care of them instead of trusting to luck or nature.

As long as obstetrics remains largely in the hands of men who have never qualified themselves to give their patients proper care and who are willing to attempt serious operations without adequate preliminary training, to say nothing of the fact that they do not realize the necessity of acquainting themselves with the needs of their patients as individuals, just so long will the profession rest under the stigma that little or no improvement has been brought about in obstetric results in the last twenty years. Intelligent obstetrics means careful study of every patient as an individual and the adoption of such methods at the time of labor as she is found to require, to insure not only her life and that of her baby, but her future health.

Although the greater part of this paper has been devoted to the needs of the patient during pregnancy and labor, it must not be forgotten that the after-care of the patient counts for a great deal in the ultimate outcome of the case. My time is too short to take this up in detail, but the careful supervision of the convalescence will count for much in the patient's future health, and should be thoroughly followed out.

EFFICIENT METHODS IN THE TREATMENT OF PLACENTA PRAEVIA.*

By JAMES A. HARRAR, M.D.,

NEW YORK CITY.

WHEN the placenta develops wholly or in part within the lower uterine zone, the condition is described as placenta prævia. This implantation, præ-via, lying *before* the *way* of the child instead of after it as it normally should, is always a serious and interesting obstetrical problem. That the subject presents a wealth of material for discussion is well attested. No less than four hundred articles have appeared upon this topic within the past five years alone, while the methods of treatment advised have been almost as extensive as the literature. Most authorities agree that it is a major surgical condition, and that it requires early treatment, skilled treatment, and preferably hospital treatment, to attain the best results for mother and child.

While a personal experience of 26 cases is scarcely one comprehensive enough upon which to formulate the proper conduct of all situations in placenta prævia, it at least affords a basis for estimating the value of the conclusions of others. It has also been the speaker's privilege recently to review the clinical records of 70 deaths from placenta prævia, occurring in the past 20 years at the New York Lying-in Hospital.

A study of mortuary statistics in placenta prævia is usually of little assistance in proving the superiority of this or of that method of treatment. This is on account of variations in the definition of the abnormal implantation, variations in the preliminary treatment and in the condition of the patient; and finally, in the skill and judgment of the operator in applying the appropriate treatment that the case in hand demands. On the other hand such a study must teach us what mistakes we may avoid, and what procedures in treatment are dangerous.

In the series above mentioned, thirty women were received in a state of shock and almost moribund from acute exsanguination. This was because they had been allowed to bleed for hours, and days, and weeks, under the care of their private physicians without the institution of any sort of treatment whatsoever. It was quite evident from the histories that the medical attendants of these moribund cases prior to admission knew little of the diagnosis of placenta prævia, and still less of its treatment. This was amply illustrated by such notes as the following:

A woman with complete placenta prævia had been having slight intermittent hemorrhages throughout her pregnancy. The day before admission she had a profuse flooding, for which three doctors were called in succession. The only

* Read at the annual meeting of the Medical Society of the State of New York, at Rochester, May 1, 1913.

treatment was repeated removal of clots from the vagina.

Another with complete placenta prævia had been bleeding for several days. She had been seen by three doctors, who advised no treatment beyond rest in bed and pills. She was admitted with a hemoglobin reading of forty per cent.

In another case of complete placenta prævia on attempting version, the uterus was found tonically contracted around the child. There was no history of labor pains, and inquiry revealed the fact that she had had a large dose of ergot.

Another had had a slight hemorrhage a month before. Two weeks later she had a sudden severe flooding while asleep in bed. The doctor was called and he applied cold compresses to the abdomen. After that, and until admission, she had repeated hemorrhages, for which the doctor gave her a prescription. She died a few minutes after being admitted to the hospital.

Another had been in bed for four weeks, bleeding, but "closely watched" by her physician. She was admitted moribund, with a hemoglobin of 30 per cent., and died undelivered at full term.

Another had a profuse hemorrhage and four doctors were called. The first tried to pack the vagina, the second advised leaving her alone, the fourth referred her to the hospital.

In addition to those for whom little could be done, a certain number died of shock and hemorrhage shortly after delivery, in spite of the fact of their good or fair condition on admission. A study of this group is perhaps the most pertinent to our subject. A number of factors may reasonably be assigned as the cause of death in these cases, and we may with profit take heed of the following warnings:

1. Cases of hemorrhage stand chloroform badly; ether is best. Three women went into collapse under chloroform before any attempt at delivery had been made.

2. Removal of tampon and repacking on account of inefficiency of the first tampon is bad practice. Several fatal cases were repacked three times before final delivery. Each change of tampon means fresh loss of blood, and increased opportunities for infection. If more thorough packing seems necessary, introduce more gauze on top of that already in place.

3. Rapid manual dilatation of the cervix before it is well taken up, and open at least to a diameter of three finger tips, invariably results in deep cervical lacerations, or rupture of the lower uterine segment. Accouchment force has no place in the management of placenta prævia.

4. Forcible distension of the large dilating bags, placed extraovularly, *i. e.*, before the membranes are ruptured, with the cervix but slightly dilated, is liable to rupture the lower zone. This is by reason of the great increase in the intrauterine content.

5. Neglect to tampon the uterus and vagina firmly at once after delivery is dangerous. Tampon after the occurrence of post partum hemorrhage is too late.

6. Removal of this post partum tampon and repacking because of continued bleeding is to be avoided. If you are assured that there is no laceration of the cervix, it is much better merely to introduce more gauze, rather than remove the original tampon. The hemorrhagic seepage that frequently persists after a proper tamponing of the uterus and vagina, is in many instances from unrecognized lacerations of the cervix and lower uterine zone.

Besides the 50 women that died of shock and hemorrhage, there were 14 that died of puerperal infection, 5 of rupture of the uterus, and one of œdema of the lungs. No doubt in a certain number of deaths listed under shock and hemorrhage, partial or complete uterine rupture played an unrecognized part in the fatal termination.

These 70 deaths represent a material mortality of 15 per cent. in 466 cases of placenta prævia, occurring in 81,000 confinements. This series of 466 cases includes the group of 250 reported by McPherson[1] in 1908. In the group of cases delivered prior to 1908, the materal mortality was recorded as 18 per cent. In the group of 216 cases delivered in the succeeding 5 years, the maternal mortality has fallen to 11½ per cent. Several factors appear to explain this improvement in our results. Fewer cases come to us in a desperately exsanguinated condition than formerly, and this is probably because of better instruction of the physician in private practice in the recognition and management of the complication. In the hospital treatment of placenta prævia, accouchment force is being abandoned, and in a certain type of case, recourse is being had more frequently to early delivery by Cæsarian section.

The maternal morbidity is still high and merits more careful consideration than is usually accorded it. The remote dangers after the emergency situation is in hand, are those resulting from infection and anæmia. Thrombophlebitis is common because of the placental wound being so near the lower end of the birth canal, where micro-organisms abound. The necessity for artificial interference increases the opportunity for infection, and the concurrent anæmia reduces the patient's resistance thereto.

The maternal morbidity in our series, as expressed in temperature rise, was 58 per cent., the severely infected cases, running more than a week's temperature amounting to 6 per cent. These figures do not include the anæmias and subinvolutions which may continue for months after delivery. The maximum anæmia usually does not develop until the body fluids have made up the total quantity of blood lost. E. C. Smith[2] has noted in our laboratory study of these cases that this commonly takes from three days to three weeks, even in the absence of infection. A woman may be pulseless and panting with

air hunger from loss of blood, and yet have a hemoglobin reading of 80 per cent. in the small quantity of blood still left in her veins. It is the rapidity of the hemorrhage that is fatal, rather than the total quantity lost.

As might be expected the fetal mortality in placenta prævia is large. Owing to the fact that the hemorrhage frequently occurs weeks and months before the maturity of the ovum, we must anticipate the loss of many infants due solely to the premature interruption of pregnancy. Thus there is an absolute fetal mortality that marks the limit of our art, and is as unavoidable as the primary hemorrhage. This unavoidable fetal mortality may be put down as from 25 to 30 per cent. The loss of mother's blood in one profuse hemorrhage may result in asphyxia of the fetus from lack of oxygenation, and in addition the child must often run the gauntlet of artificial delivery. In the 466 placenta prævias, the stillbirth rate was 44 6/10 per cent., while 14 per cent. died within the first ten days. Thus the gross infantile mortality amounted to 58 6/10 per cent. In the proposal of Cæsarian section for the improvement of the fetal mortality, question has been raised as to the value of the frequently premature infants that might thus be delivered. It is interesting to note in this connection that out of 300 of the series, but 100 mothers were in their tenth lunar month, 73 were in their ninth month, 68 in their eighth, 38 in their seventh, 16 in their sixth, and 5 in their fifth month. As but 33 per cent. of the women went to term, we may expect an infantile morbidity of 66 per cent. from prematurity alone. Moreover the depletion of the mother's blood supply places her in poor condition for the establishment and maintenance of lactation, and artificial feeding adds its difficulties to the prematurity.

The clinical history of placenta prævia is the sudden occurrence of hemorrhage without pain and without known cause in the last trimester of pregnancy. The hemorrhage is bright arterial blood, usually rather profuse in quantity. It may start at the most unexpected time, while the patient is sleeping in bed, or while sitting quietly in a chair. A primipara, observed by the speaker, attempted for several days to induce labor pains by severe exercise, long walks and rough motoring. She had considered herself at or beyond full term, and felt perfectly well. One night she was awakened by a smart flooding, so profuse that she thought the membranes had ruptured. There was a complete placenta prævia.

The initial hemorrhage often stops spontaneously, to recur after hours and days when least expected. In a certain number of cases the bleeding begins as an intermittent dribbling, after days or weeks becoming suddenly profuse. This stillicidium is very weakening to the patient, and these women are frequently in the worst shape for delivery on account of their severe anæmia. In the marginal and lateral varieties the bleeding may not commence until the woman falls in labor. In rare instances there is no hemorrhage at all, a marginal implantation only being diagnosed should for any reason manual extraction become necessary. A central implantation may not bleed until full term, though as a rule the more complete the prævia, the earlier the hemorrhage. Occasionally a placenta prævia first manifests itself as a threatened abortion in the third or fourth month, and pregnancy continues until term, when a profuse hemorrhage again calls attention to the misplaced placenta.

In 152 histories of the series, a fairly detailed description of the hemorrhage was obtainable. Four types of bleeding seemed to prevail, as follows:

1. Sudden profuse hemorrhage in the last three months in..... 50%
2. Stillicidium for days and weeks, with sudden profuse hemorrhage in..... 30%
3. Hemorrhage beginning with the labor pains in 12%
4. Threatened abortion in the early months, profuse hemorrhage at term in..... 8%

There was no consistent relation between the type and time of the onset of the bleeding and the variety of the placental implantation.

If doubt exists as to the nature of the hemorrhage, the diagnosis should be confirmed by palpating the spongy placenta through the internal os. Old blood clot, the hairy scalp of the child, a prolapsed cord, hydatiform mole, and cervical myoma must be differentiated. But the peculiar tough granular feel of the maternal surface of the placenta is rather easy to recognize. With the eyes closed, palpate the maternal surface of any delivered placenta, and you will know what to feel for in the next case of ante partum bleeding you see. If the examination is made early during the hemorrhage, before the os is open, it is necessary under anæsthesia, to dilate sufficiently with the finger or the branched dilator to enable the finger to pass the internal os and feel for placental tissue. Even though this maneuver induces labor, the seriousness of the condition suspected to be present renders it justifiable. The definition of the variety of the prævia present cannot usually be made until the cervix is near full dilatation, for what may appear to be a complete bridging over of the os with placental tissue at one finger's dilatation, may only half cover it when dilatation is complete. In the class of cases in which the flap or edge of the placenta enters the lower uterine zone, but does not reach entirely to the margin of the internal os before dilatation, the so-called lateral implantation, diagnosis is difficult. However, any painless flow of bright blood from the vagina in the latter part of pregnancy is so pathognomonic

of placenta prævia, that it is safe to handle the case on that assumption.

To the lesser signs, such as bogginess and thickness of the vaginal portion, we need pay but little attention. There is one sign, however, that is suggestive in primiparæ, and that is failure of the head to descend in the last week of gestation, where the relative size of the head and pelvis is normal. It is easy to appreciate how a mass of placental tissue, acting as a buffer, will prevent the head from entering the lower zone and engaging as it normally should during the last of pregnancy. One case, a primipara, caused not a little anxiety owing to this failure to settle. In fact, so much so, that under nitrous oxide anæsthesia, test was made to see if the head could be made to engage in the brim. It was possible to do so, though with difficulty, and the head at once sprang back to its original position. The true condition of affairs was not recognized until a day or so later, when a sudden profuse hemorrhage called our attention to a centrally implanted placenta. It has long been known that the presence of the placental mass at the lower pole is often productive of abnormal presentations in labor.

Aside from the rarer conditions of hydatiform mole, carcinoma of the cervix, and ruptured vaginal varix, the hemorrhage of placenta prævia is to be differentiated chiefly from that of accidental separation of the normally situated placenta. In the latter there is severe localized pain and tenderness at the placental site, and the hemorrhage, if visible, is dark colored and usually clotted; and in a study of 47 cases, Lobenstine and Harrar[3] also noted that the shock present was out of all proportion to the amount of blood loss.

When the diagnosis of placenta prævia has been made, the only safety to the mother lies in the prompt termination of pregnancy or labor in the most conservative manner possible. In desperate cases some delay is justifiable in attempting to bring the mother out of her shock, but there must be no temporizing in the interests of the child and there is no expectant treatment.

The two essentials preparatory to delivery are prevention of hemorrhage and dilatation of the cervix. At first sight it would seem that the two indications were diametrically opposed; that the operator must proceed with great discretion in order to control the former while securing the latter. It was here that to the older obstetricians the natural forces appeared to fail. Nevertheless by the proper employment of obstetrical procedure it is possible to dilate the cervix slowly with the loss of but little blood.

The methods employed in the treatment of placenta prævia must vary according to the nature of the case. The accoucheur must take into consideration whether the patient is to be delivered in her own home, possibly amid wretched surroundings, or in a hospital with good assistance; whether or not the patient is in labor; the condition of the mother and of the baby; upon the amount of dilatation of the cervix; upon the variety of the prævia; upon the month of gestation, and to a degree upon the age and parity of the patient.

Let us consider first what shall be done for the bleeding that occurs during pregnancy, *i. e.*, in the absence of uterine contractions and of dilatation of the cervix. If the patient is a primipara, near term with a living child, and has the first hemorrhage with the cervix still long and closed, the accoucheur has a long, hard road before him. It is in this narrow class of cases, with the woman in good condition, that most men agree upon Cæsarian section as the ideal method of delivery in placenta prævia. It must be admitted, however, that the benefits accrue mainly to the child, for in the 48 primiparæ in the hospital series that were delivered by the vaginal route, but two mothers were lost. Of the 48 babies, on the other hand, 32 succumbed. Cæsarian section has but little better than this to offer, as far as the mother is concerned. But it does do better for the child. In the 15 cases delivered by Cæsarian section, multiparæ and primiparæ, one mother died and four babies. The fatal case had been handled outside and had been tamponed several hours for the induction of labor before Cæsarian section was performed. Some hours after the operation she suffered a severe hemorrhage which required uterine tamponing for its arrest. She died later of streptococcemia. While it is possible that some of the cases delivered by Cæsarian might have been brought to a successful issue by other methods, it is the speaker's opinion in the narrow class of cases described, inelastic small vagina, long rigid cervix, in a woman at or near term, with mother and child in good condition, and no suspicion of infection present; that the mother's chances are as good, and the child's chances increased threefold by the delivery through an abdominal incision. In some exsanguinated cases successful results have been reported by E. P. Davis[4] in a rapid bloodless Porro operation, followed or accompanied by a transfusion to renew the woman's blood supply.

If the cervix is tightly closed and long, and Cæsarian section is contra-indicated, I believe the best treatment is the cervical and vaginal tampon of iodoform gauze. The vulva must be shaved and the woman prepared as for any operative delivery. The asepsis must be absolute. We employ moist 1 per cent. iodoform gauze, put up in 5-yard lengths in large glass tubes. Each strip is 8 inches in width, and folded twice to a width of 2 inches. From 2 to 5 of these strips of gauze are necessary. The patient should be put in the Sim's position on her side, with the bladder and rectum empty. The posterior vaginal wall is retracted with a single bladed speculum, the cervix grasped with a double tenaculum, and the cervix and the

whole pelvic space may then be easily, thoroughly, and painlessly packed. When the vagina is filled with gauze, the patient is turned upon her back. The uterus sinks down, and the fetal head resting upon the tampon, compresses the bleeding area. Such a tampon will control the hemorrhage and usually produces enough irritation to induce labor within 10 or 15 hours. Occasionally a patient will deliver herself spontaneously after tamponing. Vigorous pains being incited, the presenting part, entering the vagina, expels the gauze ahead of it. Twenty-seven women of our series thus delivered themselves, with the loss of one mother and six babies.

Should the cervix be found to be dilated to two fingers, however, and the mother and child in good condition, it is better to introduce a small Voorhees bag for the induction of labor. These smaller bags, introduced for this purpose, are best placed extraovularly, *i. e.,* without rupturing the membranes. In using the larger sizes, as will be described later, it is safer and more effective to thrust them through the membranes or placenta, and place them intraovularly. If the operator is unskilled in their use, he will still have to have recourse to the gauze tampon. The main disadvantage of the tampon is that it is impossible without removing it to tell how much dilatation is being secured, whereas with the bag it is a very simple matter to palpate the cervix directly without disturbing the bag itself. The opponents of the tampon claim that it is inefficient, that it causes further separation of the placenta, and that it is a source of infection. In using the tampon with the cervix partly dilated, it is always most important to separate the placenta gently for three or four centimeters around the inside of the cervix. This valuable procedure completes the necessary separation of the lower zone attachment, and was first recommended by Barnes. The tamponing should then be started with a light coil of gauze within the cervix, and completed with the tight vaginal tampon as before. With the proper technique there is no more infection from the use of sterile iodoform gauze than is caused by the prolonged bruising of the rubber bag. When infection is present, the bag is undoubtedly the more dangerous of the two. In one fatal case, removal of the bag showed damming back of putrid liquor amnii and neconium, with the woman's temperature at 103°.

If the cervix is two or more fingers dilated and the child dead or nonviable, *i. e.,* less than seven lunar months, the proper procedure is the bipolar version through the partly open cervix, after the manner of Braxton-Hicks. To be done easily this must be attempted only under complete anæsthesia, so that the uterus is thoroughly relaxed. A leg is then seized with the two fingers through the internal os, and the half breech gently brought down into the cervix This absolutely controls the hemorrhage in cases of true placenta prævia. The delivery of the child is left to the spontaneous contractions of the uterus, occasional slight traction being made, if necessary, to keep the half breech fitting snugly in the dilating cervix. This method is the safest of all for the mother, but has a very high fetal mortality. Hence we are inclined to restrict its use in placenta prævia to dead or dying babies. It is a wise plan to perforate the after-coming head when the child is dead, and so relieve the cervix of further dilatation.

In the management of placenta prævia after labor has begun the metreurynter or dilating rubber bag employed intraovularly, so strongly recommended by the Germans, is of the greatest value, especially when the membranes are ruptured. The cervix was thus dilated with the Voorhees bag in 15 cases, with the recovery of all the mothers, and the loss of eight infants, three of which failed to survive on account of their prematurity. With the bag, the patient must be constantly watched by the attendant. For one serious disadvantage of metreurysis is the possibility of the bag slipping through the cervix unobserved, and a large hemorrhage taking place behind it. One child was lost on account of this accident. It had been in splendid condition up to the time of this unobserved hemorrhage, which so depleted its oxygen supply that it succumbed, probably of asphyxia. The bags also require some skill and expertness in their use, and the larger sizes used extraovularly are very dangerous on account of their lacerating the vaginal portion.

When a marginal implantation is discovered during labor, simple rupture of the membranes sometimes is sufficient to allow the presenting part to descend and control the hemorrhage. But good uterine contractions are necessary to accomplish this. Too frequently on account of inertia a bag must be introduced before the bleeding can be controlled. Quite recently pituitrin has been advocated in combination with rupture of the membranes in the marginal variety, and used with considerable success by Trapi[5] and by Haugh and L. Meyer.[6] In the partial and the complete variety, in labor with partly dilated cervix, the operator will do well to introduce one of the larger bags through the membranes or placenta. If unskilled in the use of the bag, he must have recourse to the gauze tampon. In case the membranes are ruptured, however, plugging the cervix with gauze is valueless to control hemorrhage. The bleeding will continue to leak past the most carefully placed tampon, and a bipolar version is called for.

In all cases with placenta prævia, partial or complete, with a viable child, and the cervix over three fingers dilated and well taken up, the speaker prefers to complete the dilatation manually, and proceed at once to version and breech extraction. This manual dilatation must be done very slowly to avoid laceration of the cervix, which in placenta prævia, whether rigid

or soft to the feel, is especially inelastic and tears readily. Complete effacement must be secured before doing version to obtain a living child. In rare instances lateral incisions of the cervix must be resorted to in delivering the after-coming head, but vaginal Cæsarian section for placenta prævia scarcely seems a correct surgical procedure. In all cases with the child dead or nonviable, a bipolar version is proper as soon as it is possible to get two fingers through the cervix. The remainder of the delivery should then be spontaneous. Pitruitin is here again of value in maintaining uterine contractions.

When the delivery has been artificial, and in any case where the placenta is adherent or postpartum bleeding is occurring, proceed immediately to manual extraction of the placenta.

The uterus and vagina should be tamponed after every case of placenta prævia, except perhaps in the event of spontaneous delivery where there has been but little hemorrhage.

Lacerations of the cervix should be repaired immediately whether they bleed or not. There is considerable danger of secondary hemorrhage from these wounds when the woman has come out of her shock, and a great many of the instances of persistent bleeding, even with the uterus firmly packed with gauze, are due to unrepaired or unrecognized tears.

The patient must be watched most carefully post partum, and measures for the prevention and care of shock should be at hand. The behavior of these cases is even more treacherous immediately after delivery than before. A woman may leave the table in apparently good condition, and within an hour or two go rapidly into collapse.

The obstetrician who would obtain the best results in placenta prævia, will approach the case with open mind and judgment and with no fixed ideal of procedure. He will rapidly decide and institute the treatment that meets the indication. Before presuming to manage a case of ante partum bleeding, his equipment both mental and instrumental, must be complete. For even so simple a maneuver as a vaginal examination may excite a profuse hemorrhage that requires expeditious treatment, or reveal a situation that demands immediate delivery.

REFERENCES.

1. Placenta Prævia, with Observations on Two Hundred and Fifty Cases. *Bul. of the Lying-in Hosp.*, 1908.
2. The Effect of Hemorrhage on the Condition of the Blood. *Idem.* June, 1909.
3. A Study of Forty-seven Cases of Premature Separation of the Placenta. *Idem.* Sept., 1907.
4. Abdominal Section in Placenta Prævia. *Surg., Gyn. and Obst.*, Dec., 1912.
5. The Treatment of Placenta Prævia with Hypophyseal Extracts. *Monats f. Geb. u. Gyn.*, Oct., 1912.
6. Pitruitin as an Ecbolic, Especially in Placenta Prævia. *Arch. mens. d'obst. et de gyn.*, Oct., 1912.

Discussion.

DR. JAMES R. TORBERT, Boston, Mass.: It was indeed a pleasure to be asked by your Secretary to discuss Dr. Harrar's paper. The subject is of great interest to those of us who specialize in obstetrics and obstetrical gynecology, and to my mind is of even greater interest to the general practitioner, for it is he who sees by far the larger proportion of the obstetrical practice of the country.

I venture the assertion in regard to Dr. Harrar, and know it to be so in my own case, that those of us connected with maternity hospitals have a perfectly definite dread of this condition, the reason for this being the fact that we so often have to tackle forlorn hopes on exsanguinated patients.

Confirming this statement, let me quote briefly the figures on a series of 155 cases of placenta prævia from the Boston Lying-in Hospital, reported two or three years ago by Mason and Williams.

In practically none of this series was there a question of a selection of a method of operation, the patient's condition permitting only a vaginal delivery. Out of the 155 cases there was not a single death in a patient delivered at the beginning of hemorrhage, and still in good condition. Five deaths occurred in patients operated upon within a few hours of the first bleeding, giving a probable unavoidable mortality of 3.2 per cent. It is not to be supposed, however, that all of the cases which recovered entered in good condition, for many of them were so exsanguinated as to be considered almost hopeless.

Out of 55 cases of complete placenta prævia 13 died, or 23.6 per cent. Excluding one case, not one of this series was admitted in even fair condition.

Of 51 cases of partial placenta prævia, there were 6 deaths.

Of 49 cases of marginal placenta prævia there were 3 deaths. There was a history of long continued bleeding in all but one of these fatal cases. This, to my mind, is the key to the treatment, namely, to prevent the loss of blood before delivery. How is this possible?

Ante partum examination properly conducted will discover the condition frequently and this examination should be as thorough in every case as training and observation can make possible.

In this ante partum examination, the vaginal examination is of the greatest importance. It is well known that in multipara, among whom the cases of placenta prævia occur in a proportion of ten to one, the cervix is patulous and can be entered by the examining finger any time after the sixth month of pregnancy. Of course, this is only to be done if there is a boggy feeling in posterior cul-de-sac. This is only one of the pathological conditions to be ascertained, and I would call attention to the importance of this ante partum vaginal examination as a routine practice.

Cases of placenta prævia are uncommon enough to cause at times difficulty in making a diagnosis by vaginal examination. DeLee's advice to students to make a ring with the fingers

and place a placenta above, then practicing the feeling of the placenta, is most excellent, and well worth practicing with every placenta you inspect.

We have all seen these cases where the initial hemorrhage was severe enough to cause death. Fortunately this does not often occur, and the amount of blood lost between the onset of the trouble and the arrival of the physician can be somewhat controlled in many cases. A word in regard to methods for this control. Morphia, subcutaneously injected in one-quarter grain dosage, is sufficient to temporarily stop the uterine contractions, and thus control the hemorrhage. The knee-chest position, by throwing the presenting part up into the uterus, taking the pressure off of the placenta, diminishes the hemorrhage to a considerable extent. This is again only a temporary expedient.

Raising the foot of the bed eighteen inches has the same effect and is even more easily accomplished.

It is always an excellent plan when called to a possible prævia case to see that preparations for delivery are started at once, water boiling, delivery room prepared, etc., as time lost here may loose your case.

It has been my experience both in hospital and private work that most of our bad results are due to the poor condition of the patient from this initial loss of blood, for its importance is all too rarely recognized by the attending physician and consequently the above measures for its prevention are not taken. Palliative measures after the arrival of the physician have no place in the treatment of placenta prævia.

Removal of the cause is the only treatment and the best method for the individual case at hand is the one to be considered.

Hospitals unquestionably give the better chance for both mother and infant, and the two patients should always receive this additional chance where it is within reason.

Should the patient be moved measures for the prevention of further hæmorrhage should be instituted, the one in common usage being packing of the vagina. Packing of the vagina properly done controls the hæmorrhage effectively for a short time, inefficiently done increases the hæmorrhage.

My personal belief is that effective vaginal packing in a private house, on an ordinary bed, with poor surroundings, inadequate facilities, the necessity for haste, is exceedingly difficult, if not impossible, a fact, by the way, which would be a strong point in favor of emptying the uterus at the patient's home. If immediate evacuation of the uterus is decided upon, medical assistance, the more expert the better, is absolutely essential.

Obstetrical operating of all kinds in private houses can be greatly facilitated by creating in the home conditions as nearly like those of a hospital as possible, and this is easily done. For instance, the use of a kitchen table in place of the bed for an operating table, is a tremendous asset in the success of any obstetrical operation, and is especially so in cases of placenta prævia. The table brings the patient to a convenient operating level and can be moved to accommodate the light—a most important factor.

In regard to the efficient methods in the treatment, we have heard such valuable information from Dr. Harrar.

There are a few points which appeal strongly to me, and at the risk of repetition I want to speak of them briefly, considering principally the condition of complete placenta prævia.

In the first place, the diagnosis is made by vaginal examination, feeling the placenta with the examining finger. One finger can always be passed into the internal os, and if you cannot feel the placenta, you are not dealing with a case of complete placenta prævia.

At the time of the first examination be prepared to go ahead and immediately complete the delivery.

If the internal os admits two fingers, provided the patient has not lost too much blood, and the child is viable, you will get the best result by doing an abdominal Cæsarian section. If this is not feasible, a bipolar version, with slow extraction, sacrificing the child.

Never attempt to force open the internal os by manual dilatation, the lower uterine segment is boggy and eroded by the insertion of the placenta and tears like wet blotting paper. The tear runs up into the body of the uterus, across the uterine artery and leads to severe hæmorrhage, greatly endangering the patient's life.

This is the type of case in which, next to the severe anemia from ante partum hemorrhage, a fatal result is most common, and to my mind this fatal result is invariably due to a ruptured uterus.

If the internal os is practically obliterated and admits the hand, do an internal podalic version.

Surgical cleanliness and ability to do this operation well will effectively lower an obstetrical operator's mortality and morbidity.

It is impossible to devote too much time and care to the instruction of our students in the performance of the operation of internal podalic version. While it is not of great difficulty in multipara, in primipara, especially with large babies, the large fetal mortality as a result of the operation, indicates forcibly the skill required.

If the os is fully dilated, do a rapid delivery and a manual removal of the placenta.

Post operative hemorrhage in this type of case in my experience is not common. Intrauterine douching is always indicated and inspection of the cervix, with immediate repair of laceration is a part of the delivery. With a double hook on each lip of the cervix, and pressure on the uterus from above by an assistant, I have yet to see a cervical laceration which

cannot be sutured from the highest point downward.

Subcutaneous injections of ergot and pituitrin, or of both, should be a part of the routine, and constant watchfulness by the operator himself for post-partum uterine inertia should never be omitted.

DR. EUGENE W. BELKNAP, Syracuse: I have practically done away with packing. Experience with the Voorhees bag has been so very satisfactory that to my mind, in the great majority of cases, it does away with all forms of packing.

DR. ROSS MCPHERSON, New York City: I do not believe that the Voorhees bag is a safe thing to use in the treatment of placenta prævia as it may come out with a sudden pain, and hemorrhage take place with ensuing death to the patient, before a satisfactory means of controlling it can be put into execution. On the other hand, when the patient is packed with gauze, the packing will stay in place until it is taken out; with packing you know where you are every minute, whereas with the rubber bag you do not.

One of the most important things, however, is to understand *how to pack,* and my experience goes to show that in the majority of cases this manœuver is improperly performed. The proper way to pack in hemorrhage cases is to pass the gauze to the *top,* packing it in firmly, filling the lower uterine segment and cervix, then the vagina. The average vagina will hold 30 to 35 yards of 1-inch gauze in strips without much trouble, and if you get it in place properly, you not only control hemorrhage but also cause the cervix to dilate by means of the irritation of the gauze, thus producing the desired effect.

In regard to Cesarean section in the class of cases outlined by the speaker, there is no question but what we get better results, especially for the baby, by abdominal hysterotomy than by the old fashioned methods.

Lastly, I believe that all cases of placenta prævia should be delivered in a hospital. We can have better assistance; surroundings are more convenient and chances for recovery to both mother and child are vastly improved.

THE INCIDENCE OF RENAL INVOLVEMENT IN PULMONARY TUBERCULOSIS.*

By HARRY S. BERNSTEIN, M.D.,
ALBANY, N. Y.

THE presence of micro-organisms in the urine of septicæmic cases has given rise to the view that bacteria pass through kidney substance. Organisms, identical with those recovered from the blood stream, have been obtained by urinary cultures. Examples of this fact have been encountered in post-partum infections due to the colon bacillus and streptococcus as well as in typhoid fever. The absence of albumen and of pus cells in many such urines indicates the non-involvement of renal tissue.

Of late years, pulmonary tuberculosis has been associated with a septicæmic process. The earlier work of Rosenberger[1] in 1909 was confirmed by Mendenhall and Petty.[2] These authors claim to have found acid-fast bacilli, consistent with tubercle bacilli, in smears of venous blood taken from cases of pulmonary tuberculosis. Liebermeister[3] determined the presence of the bacilli in the blood of 60 per cent. of advanced cases of the disease by guinea-pig inoculation. Hilgermann and Lossen[4] obtained positive blood smears in twenty-five per cent. of pulmonary cases, both in the incipient and advanced stages. Ranstrom[5] reported the finding of the tubercle bacillus in the blood of 9 out of 36 cases. The nine positive cases were all in the third stage of the disease. Eight came to autopsy, and these failed to show miliary lesions.

Dailey,[6] however, in his work was unable to prove the above-mentioned claims. His summary is as follows: "Blood from 17 cases of tuberculosis (2 of miliary and 15 of advanced tuberculosis) inoculated into guinea pigs failed in every instance to produce the slightest evidence of the disease. Stained smears of the blood from the 17 cases showed occasionally bodies resembling tubercle bacilli."

The question of a tubercle bacilluria, concomitant with pulmonic disease, was approached by Cunningham.[7] By inoculating guinea pigs with the urines of 66 cases of advanced tuberculosis of the lungs, he found that 6 yielded positive results. Subsequent inoculation did not corroborate the findings in four. Cunningham concludes, therefore, that "it is not common for the bacillus of tuberculosis to be eliminated in the urine in individuals with the usual form of tuberculosis." The possibility, however, of the elimination of tubercule bacilli through a nontuberculous kidney was indicated by Barney and Young.[8] They reported a case of pulmonary tuberculosis, the urine of which gave a positive result upon guinea-pig inoculation. Autopsy revealed only a chronic glomerulonephritis. An analogous case, a nephrectomy, was recorded by Bolognesi. The kidney showed no definite lesions; and yet the urine contained pus cells and acid-fast bacilli. In microscopic sections of kidney tissue, stained appropriately, the bacilli were evident. This observation is advanced by Bolognesi[9] as proof of the passage of tubercle bacilli through the kidneys. The foregoing experiences—that of the alleged finding of tubercle bacilli in the blood stream of tuberculous subjects and of finding them, also, in the urine of apparently nontuberculous kidneys, suggested our experimental work. A larger series of pulmonary cases was taken, with a view to

* Read at the annual meeting of the Medical Society of the State of New York, at Rochester, May 1, 1913.

determine the incidence of a tubercle bacilluria. One hundred cases with pulmonary lesions in all stages were thus selected. Each of them showed the presence of the tubercle bacillus in the sputum.

Technique.—A morning specimen of urine was received from each patient in a sterile Ehrlenmeyer flask. In about three-quarters of the cases it was possible to obtain a catheter specimen. The urine was allowed to stand twenty-four hours. The upper layers were then decanted off into a beaker; and the remainder was centrifuged at the rate of twenty-five hundred revolutions per minute. The decanted portion was submitted to the routine chemical examination, and a microscopic examination was made of the sediment. Smear preparations of the sediment were also stained by the Ziehl-Neelson method. In this process, the decolorization with ninety-five per cent. alcohol was prolonged. Finally the entire centrifugalized sediment was injected subcutaneously into two guinea pigs. One of the animals was killed at the end of four weeks, the other at the end of six weeks. In certain instances, the killing of the second animal was postponed to the end of the eighth week. The organs were then examined grossly and microscopically for the presence of tuberculosis. The following tabulation indicates the grouping of the patients whose urines were examined in the manner described above:

TABLE 1.

GROUPING OF CASES ACCORDING TO THE STAGE OF DISEASE.

	Group A Incipient	Group B Moderately advanced	Group C Far advanced	Total
Males	8	36	38	82
Females ...	3	3	12	18
Total ...	11	39	50	100

TABLE II.

CASES IN WHICH TUBERCLE BACILLI WERE FOUND IN THE URINE.

	Group A Incipient	Group B Moderately advanced	Group C Far advanced	Total
Males	0	4	5	9
Females	0	0	1	1
Total	0	4	6	10

It appeared, therefore, that ten urines of our series (or 10 per cent.) were positive for tuberculosis; that the cases which clinically belonged to the moderately advanced group contributed 4 per cent., and the far advanced group 6 per cent. The minimum age of these patients was 24 years, the maximum 50 years. The minimum duration of the pulmonic process was one year, the maximum 9 years. Four of the 10 positive urines showed the presence of albumen and epithelial cells. One of these contained in addition large numbers of pus cells. Six urines were negative for albumen and contained few cellular elements, but in two of the specimens only a moderate number of pus cells were found in addition.

Tubercle bacilli were seen in one of the smear preparations of the sediment. It is noteworthy that the organisms were passed in a urine which had no albumen and only a rare epithelial cell. It may be added that during the past two years 14 urines of those submitted for diagnostic inoculation, were positive for tuberculosis. In three of the number tubercle bacilli were identified. Our laboratory experience, therefore, indicates that the organisms have been observed in four out of twenty-four urines (or 16.6 per cent.) which subsequently produced tuberculosis in guinea pigs. Our findings are in accord with those of Kuster's and Wagner's[10] whose percentage varies from 10 to 20; but are not as high as Rovsing's[11] who reports the observation of tubercle bacilli in 80.7 per cent. of smears from tuberculous urines.

Control inoculation of urines from our positive series was rendered impossible in five patients owing to death. Two patients refused ureteral catheterization, but second specimens of bladder urines proved positive for tuberculosis. In each of the urines, albumen and cellular elements were absent. The remaining three patients permitted cystoscopy. I am indebted to Dr. John F. Southwell for the following reports:

CASE 18.—Bladder, right and left meatus, normal. Urine, clear. Secretion, spurting normally. Both ureters show obstruction 5 cms. from the meati, due to prostatic enlargement. The urine from each kidney, upon guinea-pig inoculation, was positive for tuberculosis.

CASE 22.—Bladder, mucosa, normal. Ulceration, superficial. Right and left meati, normal. Contraction, normal. Urine, clear. Secretion, spurting normally. Ureters, normal. The sediment from the left kidney contained lymphocytes and tubercle bacilli, and produced tuberculosis in the guinea pig. The sediment from the right kidney showed no organisms and was negative for tuberculosis upon inoculation.

CASE 34. Bladder, normal. Contraction, normal. Urine, clear. Secretion, spurting normally. Left meatus, normal; contraction, absent. Right ureter, length 34 cms; urine flows normal and is turbid. Left ureter, length 34 cms.; flow of urine is absent. The guinea pig, inoculated with the specimen from the right kidney, became tuberculous.

The control inoculations, therefore, furnished definite evidence of the kidneys as the direct source of the bacilluria in three per cent. of the cases, as compared with ten per cent, based on presumptive evidence. It must be emphasized

that no lesions were discernible in the cystoscopy of the three patients. Moreover, none of the ten patients presented subjective symptoms referable to the urinary organs. Fenwick[12] has stated: "Bladder irritability is the sentient expression of a suffering kidney." This irritability was absent. It is to be recalled that six of the ten positive urines had no albumen, and only three had pus cells in numbers.

The question whether the tubercle bacilluria is the result of renal involvement invites solution. The lack of symptoms in the patients, the absence of albumen and of pus cells in the majority of the urines, and the negative bladder findings in three may indicate the noninvolvement of kidney tissue. This cannot be stated with certainty. Corner[13] has reported a case of a nephrectomy in a boy, age ten. The entire kidney was tuberculous and yet the urine was negative. Moreover, the absence of symptoms and of physical signs does not rule out the possibility of an existing pathological process. This holds particularly true of the kidney. In this organ, the lesions may vary from microscopic to macroscopic dimensions. The microscopic lesions may be so few in number as to escape detection. The breaking down of a miliary or conglomerate tubercle and the discharge of its contents into a uriniferous tubule is indicated by the presence of inflammatory cells in the sediment. In this connection, the chance findings by Dr. Mallory are of unusual importance. In sections of kidney, histologically normal, tubercle bacilli were observed within endothelial cells of the glomerular tufts. The tissue reaction, usually associated with tuberculosis, was absent. Examples of this kind lend support to the view of an acquired immunity or increased resistance on the part of the individual. Consequently, the phagocytic power of the endothelial cells for bacteria is increased, and the activity of these cells within the capillaries of the glomeruli may account for the presence of organisms in the urine in a septicæmia. This may explain, therefore, a tubercle bacilluria occuring in pulmonic disease without albumen or exudative cells in the urine.

To control our clinico-pathological findings, resort was made to the post-mortem records of the Bender Hygienic Laboratory. These included 321 cases of pulmonary tuberculosis, grouped as follows:

TABLE III.

Active pulmonary process with negative kidneys	141
Healed pulmonary process with negative kidneys	141
Pulmonary process associated with tuberculous kidneys	10
Acute miliary tuberculosis	29
Total	321

Deducting the cases of acute miliary tuberculosis from the total number leaves 292 cases of pulmonary tuberculosis with 10 tuberculous kidneys or 3.4 per cent. Six positive kidneys were in males. In four the disease was bilateral, in one it was right-sided; and in one other, it was left-sided. The remaining four positive kidneys were in females, in two of which there was bilateral involvement. It was unilateral, right and left respectively, in the other two cases.

Summary.

One hundred urines from cases of pulmonary tuberculosis were examined for the presence of the tubercle bacillus by guinea-pig inoculation.

Ten (or 10 per cent.) produced tuberculosis in guinea pigs.

Symptoms referable to the urinary tract were absent in each case.

Subsequent inoculation in 5 of the cases corroborated the first findings.

Six of the positive urines were negative for albumen.

Three urinary sediments contained pus cells.

Cystoscopy of three cases revealed no pathological condition of the meati. In one case of the latter, the urine from each kidney produced tuberculosis in guinea pigs. In the other two, only one kidney was positive for tuberculosis.

Post-mortem records showed a percentage of 3.4 of kidney involvement in pulmonary tuberculosis.

It is a pleasure to record the assistance of Dr. John F. Southwell and of Mr. John F. Byrnes, undergraduate of the Albany Medical College. My thanks are due Drs. Howard Van Rensselaer and Erastus Corning of the Albany Hospital Tuberculosis Sanatorium, and Dr. H. W. Carey of the Lakeview Sanatorium, through whose kindness this work was made possible.

REFERENCES.

1. Rosenberger, R. C.: *New York Med., Jour.,* 1909. Vol. LXXXIX, p. 1250-1253.

2. Mendenhall and Petty: *Jour. of American Med. Association.* LII, Nov., 1909, p. 867.

3. Liebermeister, G.: *Munchener Medizinische Wochenschrift,* 1908, p. 2155.

4. Hilgermann and Lossen: *Deutsche Medizinische Wochenschrift.* No. 19. May 9, 1912.

5. Ranstrom, P.: *ibid.* No. 38. 1912, p. 1535.

6. Dailey, M. A.: *Boston Med and Surg. Jour.,* 1909. Vol. CLXI, No. 10, pp. 318-319.

7. Cunningham, J. H.: *ibid.* 1911, CLXV, pp. 872-875.

8. Barney, J. D., and Young, E. L.: *ibid,* 1911. Vol. CLXIV, No. 26, pp. 917-919.

9. Bolognesi, G.: *Annales des Maladies Organs Genito-Urinaires.* April, 1912. No. S, pp. 709-721.

10. Quoted in ref. 11.

11. Rovsing, T.: *Jour. of the American Med. Association,* 1912. Vol. LIX, No. 25, pp. 2228-2232.

12. Fenwick, E. H.: *The Practitioner.* Jan, 1913.

13. Corner, E. M.: *Clin. Jour.,* London, 1911. Vol. XXXIX, p. 414.

CO-OPERATION OF STATE MEDICAL SOCIETIES IN PUBLIC HEALTH EDUCATION.*

By ELEANORA S. EVERHARD, M.D.,

DAYTON, OHIO.

IN behalf of the Committee for Public Health Education I wish to express appreciation of the recognition given to the work of the past four years by the invitation to a place on your program.

Almost weekly comes announcement of some new organization or some new effort on the part of laymen either in this country or in Europe to learn what needs to be done and what can be done to meet and better existing conditions.

Whether this awakening so far as hygiene and sanitation are concerned is the effect or the cause of efforts on the part of physicians in behalf of the public is not to be debated at the present time, nor is the question whether this interest is legitimate. The fact which must be reckoned with is: here is the interest—What shall be done with it?

It is not ours to say whether men and women shall learn in regard to hygiene and sanitation or even in regard to things medical. It is ours to say only whether they shall receive information from charlatans alone or from men and women competent to give instruction in medical matters.

Available to the medical profession to-day is information which begins with the cradle and by ordering the life of the infant in its detail may give the child a better start than was given its parents; by watching his eyes, teeth and respiratory tract, he may be guided into a safe childhood; through the school period information suffices to guard him against the formation of bad nerve habits in the classroom or muscular strain in athletics. When he becomes a part of the great business machinery of the world medical information is still sufficient to teach him how to meet the requirements of hygiene upon which his physical vigor depends and to protect him against diseased fellow-workmen. No profound study of altruism would be needed to show the path of duty even if the physician himself were not party to the gain.

Since the days of our forefathers ignorance of the people has stood in the way of medical progress. To-day those who have no knowledge of germ life postpone the time when deaths from tuberculosis, typhoid, and diseases of infants shall be reduced to a minimum.

With more general education in health matters and a more thorough understanding of their relation to the daily life of the individual comes heightened appreciation of the efforts of the physician in behalf of the patient, and a more rational attitude of patient toward physician. That knowledge which is necessary to assist the layman in the prevention of disease enables him also to distinguish between prevention and cure.

He learns that, while scientists may discern causes and devises methods of prevention, only by themselves can the people be saved from their own sanitary sins, and at the same time he learns that when prevention has failed and disease is present the case is no longer one for the layman but for the physician.

Through the work of Pasteur, came to the medical profession the beginning of that knowledge by means of which all infections might be stamped out. Yet in the year 1913, 1,500,000 persons will die of preventable disease. This loss will be due in part to ignorance of the victims, in part to willful disregard for laws of health and in large part to the defencelessness of the innocent in the presence of ignorance and willfulness. For the protection of the health of the community statutory regulations are wise and just; but laws are enacted only at popular demand, and if enacted without the support of public opinion they fail of enforcement. General education of the public will insure better health legislation.

It is neither possible nor desirable to make of each individual his own sanitarian. What we hope to do is to help him to see the need for sanitation and to quicken an appreciation of training in the officer who is to be custodian of the common health. Of what avail is legislation if the local health officer is lacking in either time, knowledge or inclination to enforce the law? Reasons for failure of legislation to protect the health of the people are plain. Almost universally the health officer is paid a salary so small that no competent physician can give the time required without financial sacrifice. Either too little time is given for effective service or the position is sought by those whom experience has taught to expect from their medical practice a precarious existence. Too often the health officer is a political appointee who cannot be expected to enforce the law when his partisans are involved. The average general practitioner is not a trained sanitarian, he has neither time nor inclination to specialize in that branch of medical science. The people must be educated to recognize the value of service rendered before they will either employ physicians fitted to do the work required or be willing to submit to the sanitary regulations which they have themselves made.

Each autumn home-coming hosts of pleasure seekers bring their harvest of typhoid, while the milkman makes his daily contribution of tubercule bacilli because people still labor under the delusion that rural districts are germ free. Rural sanitation is a problem in itself, but certain it is that education will prevent the annual recurrence of epidemic of typhoid in the same locality and will remove opposition to the tuberculin test for cattle.

There is still another field for education which

* Read at the annual meeting of the Medical Society of the State of New York, at Rochester, April 30, 1913.

promises large results. The leaders in business enterprises must learn that scientific management which disregards the hygiene and the health education of the employee can but result in decreased efficiency and financial loss.

To take advantage of awakened interest and to arouse enthusiasm for the study of health subjects, in 1909 the women physician members of the American Medical Association were requested "to take the initiative individually in their respective associations in the organization of educational committees to act through women's clubs, mothers' associations and other similar bodies for the dissemination of accurate information touching the nature and prevention of disease and to elect from among their number a committee to take charge of the same." At the same time "all county, district and other local medical societies 'were requested' to hold annually one or more open meetings to which the public should be invited and which should be devoted to the discussion of the same subjects and to the general hygienic welfare of the people."

The next year the Council on Health and Public Instruction recommended "that the state and county medical societies co-operate with the Committee for Public Health Education Among Women and make the state chairman of the committee a member of the state public health committee, and the county chairman a member of the county public health committee in those counties or states which have standing committees on public health, and in those counties and states in which no such committees exist, the Council on Health and Public Instruction requested that committees be formed especially to co-operate with the members of the Committee for Public Health Education Among Women." In compliance with the request the women physicians organized a committee which they also financed during its first year of work. The other two requests are still awaiting general fulfillment.

Before the end of the second year work was organized in 45 states, 238 counties, Alaska, the Philippines, Hawaii and the Canal Zone. The last annual report showed audiences aggregating little less than 400,000. The report for this year, which is now being received, will show a material increase over those figurees.

It has been the plan to assist in preparing programs and to secure speakers for any body of men, women or children, who are interested enough to extend an invitation. When such interest is lacking the committee seeks to arouse enthusiasm. Audiences have been found in mothers' clubs, literary clubs, church clubs of men and women, Y. W. C. A., Y. M. C. A., civic clubs, farmers' associations, factory clubs of men and women, public schools and among the general public. The effort could not be restricted to "dissemination of information to women's clubs, etc.," because organizations of men have appealed for assistance. The newspapers have in many places been very glad to print popular articles on timely subjects. Operators of moving picture shows are often found willing to co-operate. Sometimes the public have been educated through efforts to secure medical inspection of schools or the removal of the public drinking cup or a plan for restaurant inspection. The committee has sought to avoid multiplicity of organizations by working through existing channels and in line with existing interests when possible.

The Subcommittee on Medical Literature has prepared a list of books containing the names of 257 popular works on hygiene and sanitation. These have been put into the hands of librarians in all libraries not technical and containing 5,000 or more volumes, and, at the request of the State Library Commission, into each library in two states. County committees have worked with local libraries to prepare abbreviated lists for the use of the busy reader.

When this committee was organized many state societies were not interested in education of the people for the prevention of disease. For this reason appointments were made without conference with those societies. But work has always been carried on with one plan in mind as most effective, namely, that embodied in the recommendation that the state chairman of the American Medical Association Committee be a member of a state public health committee and the county chairman a member of a county public health committee, and that they work together for the education of the people.

What is the field for co-operation of the state society? First, through its Committee on Public Health Education it should hold itself responsible for creating sentiment in the county societies in favor of public education just as it should encourage the county societies to assume responsibility for sentiment in each community in favor of sanitation and prevention of disease.

Educated popular sentiment will demand higher standards of medical practice and will create new fields for men and women trained in preventive medicine. Already many schools are offering courses in hygiene and sanitation. The State Medical Society might well emphasize the importance of special study and thus encourage younger physicians to enter this field leaving free to those whose practice is already established the older lines of medicine and surgery.

In summing up, we find available popular interest in health subjects.

This interest guided into right channels may serve to assist men and women to avoid disease. It may serve also to hasten medical progress, to create sentiment needed to secure better health legislation and to provide efficient means for its enforcement. This interest may also be made immeasurably to increase the industrial efficiency of the human machine.

The Committee of the American Medical Association finds its most appropriate field in co-

ordinating the educational work of the several states and making known to all those methods found effective in any. To the State Medical Society remains the privilege of co-operating with that committee by assisting the county societies and through them encouraging the individual physicians thus guarding health interests within the state.

ON THE DESIRABILITY OF GREATER UNIFORMITY IN TESTS FOR HETEROPHORIA.*

By LUCIEN HOWE, M.D.,

BUFFALO, N. Y.

AFTER explaining the title of this paper I desire to call attention, briefly, to the following points:

1. The confusion concerning the relative value of tests for heterophoria.

2. At least one important cause of this confusion.

3. The desirability of uniformity in making tests, or at least explaining the circumstances under which they are made, and

4. That any or all tests for heterophoria are of secondary value as compared with the ability or inability of a given set of muscles to maintain a prolonged effort.

The subject was first announced as "Experiments with Different Tests for Heterophoria." This did not mean any new or wonderful experiments, but it referred, rather, to some measurements which were made a few years ago, when one or two prolific writers first frightened us all into thinking that heterophoria even of a slight degree was something terrible which should be corrected at once by operation. It referred also to such experiments as nearly every practitioner has made before settling into his own routine of muscle tests, and also to such useless experiments as others will make in the future, unless they recognize the effect of the intraocular muscles in tests which are supposed to involve only the extraocular muscles.

The tests for heterophoria which are referred to in this paper, and with which we are all familiar, naturally divide themselves into three groups. In the first group the test depends on the displacement of one or both retinal images up or down. In this group there belongs the single prism, and the phorometers of Stevens with its modifications.

The second group of tests include those which depend upon the blurring of the retinal image of one eye. This group includes the Maddox rod, the strong convex lens, the Cobalt glass, etc.

The third group includes those in which one retinal image is excluded and the eye then tends to swing into the position most natural to it. This includes the cover test and the diploscope of Remy, or its modifications. These are all too well known, of course, to require any description.

In this paper no attempt is made to discuss the merits of these different tests. They can only be mentioned. It can be said, however, that some form of the phorometer is in general the most convenient and perhaps most frequently used. But with this or any other instrument, if we would obtain the most constant results without a cycloplegic, it is necessary to adjust the head of the patient at the proper distance from the prism, and to keep it comfortably fixed in that position, preferably by means of the Helmholtz bit, such as has been adapted to the tropometer, or better to steady the head with the ophthalmic head rest, such as I have described elsewhere. So much for the title of this paper, the tests which are referred to, and the important points in their use.

Having disposed of these preliminaries let us consider, first, the confusion which still exists concerning this subject. It is so evident as to require but little comment. The ophthalmologist not infrequently records some variation in the results obtained with the same tests on the same patient at different times, or occasionally some variations even at the same sitting. With the Maddox rod, for example, we see the vertical streak of light swing first to one side, then to the other, until it remains in one position. This will be referred to again presently.

The second point to which I venture to call attention concerning this threadbare subject is that if we first use a cycloplegic strong enough and often enough to produce complete relaxation of the ciliary muscles, then almost any one of these tests gives more constant or almost perfectly constant results. This is illustrated by a simple and familiar fact. Take again the Maddox rod. At first the vertical streak may show a little exophoria or orthophoria, perhaps esophoria or again it returns to an exophoria. Now the fact is that the rod remains the same, and if the head of the patient has been fixed with care, as just described, it remains in the same position. What causes this change? Apparently the effort of the ciliary muscle, which by associated action affects the lateral recti. And the proof of this is that if the ciliary muscles are first relaxed with a cycloplegic, this swinging of the streak disappears, or is at least much less.

This difference between the static position which is shown when we do not use a cycloplegic and when we do use it, will probably not be appreciated by those whose attention has not been called particularly to the subject. In my own case, before being convinced of this difference, I directed an assistant to go over some sixty-six cases in which various tests for the static position had been made before atropin had been used and after, and also to note the re-

* Read at the annual meeting of the Medical Society of the State of New York, at Rochester, April 29, 1913.

fraction and the vision which could be obtained with the best corrections. These were the experiments which were referred to in the title first given for this paper. In this connection two conclusions only need be stated. The first is, what most practitioners have already observed, that the static position is more constant after the dose of a full cycloplegic than before such a dose.

The second is that the heterophoria shown by a cycloplegic is not always less than without it, but sometimes greater.

Before leaving this point a word should be said concerning the choice of cycloplegics. Most of us rely ordinarily on homatropin, for obvious reasons. But it is too often forgotten that even the larger doses of homatropin actually paralyze the accommodation for only a comparatively few minutes. A certain amount of paralysis, it is true, occurs after the first eighteen to twenty or twenty-five minutes, but the maximum degree is not reached until sometime after that, and the effect then begins to subside quite soon.

Another fact is that some degree of spasm of the ciliary muscle exists in a greater proportion of cases than is usually supposed. When this occurs, the ciliary muscle does not relax at once, even with the larger doses of homatropin, or even with moderate doses of atropin continued two or three days or longer.

Third, if the tests for heterophoria are more constant with a cycloplegic than without it, it follows that if we would have our records or reports of cases exact, it is necessary for us to state, or at least understand by those records, which test for heterophoria is used, and also whether or not the accommodation was at rest. In fact, there seems every reason for making a distinction which was described some years ago, and which is too often forgotten. It is this: When any one or more of the tests for heterophoria are made with the accommodation actually at rest, we obtain what may be properly called the *actual* static condition, or the *actual* static position of the visual axes.

On the other hand, when the accommodation is not at rest, we obtain only what may properly be called the *relative* static condition or *relative* static position of the visual axes, that is to say, the static condition or position *in its relation to* a certain amount of conscious or unconscious action of the ciliary muscle.

Fourth, although it is important for us thus to recognize and to separate in our minds and in our records the relative from the actual static position of the axes, still, it should be borne in mind that a knowledge of the static condition is by no means as important as is a knowledge of the amount of work which a given group of muscles can accomplish before fatigue occurs. Long ago physiologists learned to measure the fatigue of the muscles of the fingers and of other portions of the body, and to make those muscles write their own story of strength or weakness on the revolving drum of an instrument called the ergograph. Within the past year this same ergograph has been modified so that on it the recti muscles can also write their story of fatigue. It is out of place to discuss these tracings here. But a paper on any phase of heterophoria would be incomplete without the statement that the more these tracings are studied, the more do they seem to be of pre-eminent importance in these practical questions relating to the action of the ocular muscles.

The conclusions of this paper are practically as follow:

1. The tests for heterophoria, as these are ordinarily made, do not always give constant results.

2. These results are more constant if they are made when the accommodation is entirely at rest.

3. Our confusion would be much lessened if, in each record of a test for heterophoria, it were stated or at least understood which method was used, and whether or not the accommodation was at rest.

4. The value of data furnished by the static condition of the muscles in a given case is increased if we know also the ability to sustain prolonged strain, or the tendency to rapid fatigue. We can now make these muscles write their own story of fatigue on the ergograph.

THE OPERATIVE TREATMENT OF HIGH MYOPIA.*

By WALTER E. LAMBERT, M.D.,
NEW YORK CITY.

HAVING read a paper on the operative treatment of high myopia at the last meeting of the American Medical Association, I feel some hesitancy in so soon again bringing this subject before you, especially as there is really nothing new to offer. My excuse is that I am able to add five successful results to those already published, which have served to strengthen my conviction that the dangers in this operation have been very much exaggerated, and that we are justified in operating upon many cases in which the conditions are such as would be considered by most authorities to be contra-indicative.

The following conclusions reached by A. Hugh Thomson in a paper on the "Operative Treatment of High Myopia" would seem to voice the general opinion:

1. *Degree of Myopia Suitable for Operation.*—He finds that the average refraction after removal of the lens may be expressed by a formula $\frac{My}{2}+$, a figure varying between 9 and 13, but averaging 10.5, and considers that in cases above −16D it is justifiable to operate, where there are no other contra-indications.

2. *Age.*—The age limits of his cases were 6 and 25 years. Operation is not advisable over

* Read at the annual meeting of the Medical Society of the State of New York, at Rochester, April 29, 1913.

thirty, owing to the less ready absorption of the lens matter after needling, and the greater likelihood of degenerative changes in the fundus.

3. Growth of the long axis of the eye after operation is neither hastened nor delayed.

4. *State of the Fundus.*—An irregularly defined crescent, or irregular areas of choroidal atrophy outside the crescent, or macula changes, or vitreous opacities are contra-indications to operation. He does not consider the operation tends to cause or to prevent choroiditis or macula change.

5. *Condition of the Second Eye.*—The operation should be done on the eye with the higher myopia, where the amount is unequal. It should not be done where the second eye is emmetropic or diseased.

6. *Operative Procedure.*—The author prefers one free needling, followed in nearly all cases by curette evacuation.

7. *Visual Result.*—In 17 cases good results were obtained, 10 having distant sight without a glass equal to or better than previously with a correcting glass, and 7 requiring a low plus glass with regard to near vision, 5 preferred to use the operated eye for all purposes with or without a glass, and 8 the unoperated eye.

8. *Question of Operating on the Second Eye.*—This does not seem advisable in view of possible risks.

9. *Possible Causes of Failure.*—First group.—(1) infection; (2) secondary glaucoma from delayed evacuation or, at a later date, from some obscure cause; (3) cyclitis. Second group.—Macular degeneration, choroiditis and hæmorrhage, all of which may occur in the unoperated eye. Third group.—Detachment of the retina. In reviewing statistics of other observers, the author is of the opinion that the operation does predispose to this condition in the first year, and in a large proportion of the cases where it occurred there was a loss of vitreous, a point against removal of the lens by linear extraction.

J. G. Cath, in a paper entitled "Final Results of the Operation for High Myopia," says that the operation has no influence on the lengthening of the axis, and that the dangers in high myopia are increased, especially when complications occur at the time of or after the operation. Incipient complicated cataract is a contra-indication. The operation is to be recommended only when the myopia is at least —16D, and a double operation is always to be avoided.

Professor Hess, in an article reviewing the operations in Professor Dimmer's clinic since 1891—67 eyes in all—concludes that in only one case could any injurious effect be ascribed to the operation, and that was a case of infection. He considers the operation entirely justifiable.

Geert concludes that:

1. Axis lengthening in aphakic eyes remains progressive after operation.

2. Axis lengthening is as great in the operated eye as in the non-operated eye.

3. Vision in the operated eye remains constant in a smaller number of cases than in the non-operated eye.

4. The serious complications of high grade myopia are more numerous in the operated eyes.

5. Operative complications enhance the chance of deleterious myopic changes.

6. The most favorable age is from 16 to 30.

7. The function of the retina sinks more in aphakic eyes than in non-operated eyes.

I have operated upon 14 eyes in 7 patients:

Case 1.—A female, aged 16 years, with 21D of myopia; vision 20/70 with the correction. The fundi, except for large staphylomata, were healthy. She was operated upon in May, 1906, a needling followed 48 hours after by a linear extraction, and a subsequent discission of the capsule in both eyes. The resultant vision was o. d. 20/30 with $+1.50 \times 90$, o. s. 20/30 with $+1.50 = +1.50 \times 90$, and $+3.00$ added for near. This patient was seen within the past month; her vision has improved to 20/20 and she has pursued her vocation as a stenographer ever since the operation. In this case the only complication was that 24 hours after the needling there was a distinct increase in tension and severe pain which was immediately relieved by the evacuation of the lens. No ill effects resulted.

Case 2.—A female, aged 31 years, first seen in 1904, and operated upon in 1906. During the two years of observation the conditions had grown steadily worse. The vision was 20/200 with -22, o. d., and 20/100 with -20, o. s. There were extensive changes in the fundi, as shown by this drawing made by Dr. Fridenberg, commencing changes in the lens and floating vitreous opacities. Three needlings were required in the right eye and four in the left, at intervals of two or three days before the linear extraction could be made. The recovery was uneventful. Subsequent discission of the capsules was done, resulting in vision of 20/30 o. d, with -2×90, and 20/30 o. s., with $-1.50 = +2.50 \times 165$; with $+3.00$ added she reads Jaeger 1. I have seen this patient within six months; the vision has been maintained, and while using her eyes with care, she reads and sews with great comfort. The astigmatism, it may be observed, in this case was against the rule, whereas in Case 1 it was with the rule. This proves nothing, as I am unable to state what the corneal astigmatism was before the operation. The number of needlings necessary may be accounted for by overcaution in the discission, as I feared to create too great disturbance in an eye in which the conditions were so unfavorable. The age of the patient also would have something to do with it.

Case 3.—A female, aged 26, first seen in March, 1910. Skiascopy showed a myopia of —22D, o. d., and —21D, o. s., with an astigmatism of $1D \times 180$ in both eyes. The vision was

20/70 with the correction. There were floating opacities in the vitreous, more profuse in the right eye, large staphyloma, and a general atrophic choroiditis. Two needlings were required in each eye at intervals of three days, and were followed by linear extraction. Subsequent discission of the capsule was done with DeWecker scissors and the resultant vision was 20/70 with the proper correction. When last seen, about two months ago, the vision was o. d. 20/40 with $-.50 = +2 \times 165$, o. s. 20/40 with $+2 \times 165$; $+3.00$ added for near enables her to read and sew comfortably. She sees so well without glasses that she rarely uses the distant ones. Her only complaint is of the spots in front of her eyes; these, of course, are due to the vitreous opacities which I think have improved somewhat, and I trust will improve still further.

CASE 4.—A female, aged 50, was first seen in January, 1910. She had always been short-sighted, but her vision had recently failed very rapidly, owing apparently to opacities in both lenses which were so dense that only a very poor view of the fundus was obtainable. The vision was reduced to counting fingers. A colleague who had seen her previously informed me that there were vitreous opacities in both eyes and extensive choroidal changes. The patient then disappeared, and I did not see her until the following year. In April, 1911, I made a preliminary iridectomy on each eye, followed three weeks by an ordinary extraction in the left eye. There was considerable amount of soft lens matter, which irrigation failed to remove entirely. A rather dense secondary membrane resulted, upon which I made, four weeks later, a discission with the DeWecker scissors. This did not give a satisfactory opening, but I was then taken seriously ill and was able to do nothing further until November, when a second discission gave a very satisfactory result, the vision being 20/50 with $-1 = -3 \times 90$. In view of the amount of soft lens matter remaining after extraction in the left eye, I decided to do a preliminary capsulotomy in the right eye. Three needlings were done at intervals of two and five days before sufficient change in the lens was produced; two days after the last needling the lens was swollen, the anterior chamber shallow, and the tension slightly elevated; immediate extraction was indicated, but the patient developed a muco-purulent conjunctivitis, which made it unwise to operate if delay were possible. Fortunately no alarming symptoms developed and under treatment the eye was in a condition to be operated upon in a few days. Recovery in this case was rather slow and tedious, although only one discission was needed on the second eye. The patient left New York in January and at that time her vision was 20/70 with $-1 = -6 \times 80$, o. d., and 20/50 with $-1 = -5 \times 90$ o. s. With $+3.50$ added she is able to read and sew fairly well. She has been travelling for pleasure ever since her recovery, and I received a card from her in Jamaica only a few days ago.

CASE 5.—A female, aged 27, whose sight had gradually been growing poorer for some time past. The vision in both eyes was 20/70 with -27. The media was clear and except for large staphyloma the fundi were in good condition. The lens of the left eye was needled November 15, 1911, with practically no result; the second needling, five days later, had very little effect, and a third was done four days later; five days after that a linear extraction was made. The recovery was very slow, the remaining soft lens matter gradually absorbing. Six weeks later a discission of the capsule was made with the Ziegler knife, the resulting vision being 20/50 with $-.50 = -2 \times 115$. Early in May the vision became very much reduced and I found that she had a central choroiditis; at the same time it was discovered that she had a mild form of exophthalmic goitre. Under treatment her general condition improved and the choroiditis seemed to be arrested. Her vision improved to 20/50 again and is now 20/50 + with $-1 = -2 \times 120$. Because of this complication I naturally hesitated to operate upon the second eye, but finally concluded to do so. The result has been most gratifying; two needlings were required, recovery was entirely free from complications, and the final vision obtained was 20/30 with -3.50×60. The discission of the capsule has not been made in this eye as there is a very fair opening; it may, however, seem advisable to enlarge this later.

CASE 6.—A boy of eight years, the youngest of my cases, was wearing -14.00 when I saw him in April, 1912. Skiascopy showed a myopia of -19D; the fundus was in good condition and the vitreous clear. The right eye was operated upon in May, 1912, one needling being followed by a linear extraction. The second eye was operated upon in September, only one needling being required in this eye also. Very little or no reaction followed the surgical proceedings in this case. At present retinoscopy shows a hyperopia of 2D and with the Seitz test chart the vision seems to be 20/50. The child can not read and is decidedly feeble-minded, so that an accurate estimate of the vision is impossible.

CASE 7.—A male, aged 58 years and the oldest of these cases, was operated upon not primarily on account of the high myopia, but because the lenticular changes were already fairly well advanced. It was impossible to estimate the amount of myopia but from the refraction after the extraction I judge it to have been about -15D. The vision in both eyes was fingers at one foot, due to posterior polar cataracts and a general haziness of the lenses. A preliminary iridectomy and a preliminary capsulotomy were followed by a regular extraction in the left eye, and vision of 20/40 with $+4 = +3.50 \times 160$ resulted. The same proceeding was followed in

the right eye except that no preliminary capsulotomy was made, for the reason that the nucleus of the left eye was quite large and I assumed that I would be able to extract the lens in the right eye without a discission. I regret now that I did so as considerable soft lens matter remained, producing an iritis which was troublesome, and prolonging the convalescence. The eye is now quiet, and while the vision is only 3/200 I believe that after a discission it will be as good as that of the left eye.

In all these cases both eyes were operated upon and the results would seem effectively to controvert the general opinion that the second eye should not be attempted. In three of the patients in each eye there were extensive fundus changes with profuse vitreous opacities. In three of the cases, Nos. 2, 4, and 7, cataracts had begun to form, and in cases 4 and 7 had developed to such an extent as to justify an extraction on that account alone. In only three cases, Nos. 1, 5, and 6, were the conditions such as are generally considered to justify the operation—that is to say, the patients were all under the age limit, there were no vitreous opacities, and, except for large staphylomata, no choroidal changes. Curiously enough it was in one of these cases that the only complication occurred which might have been attributed to the operation; that was the appearance, six months after the operation, of a central choroiditis in the first eye of Case 5, causing a decided loss of vision, which was later regained. As she was then discovered to be suffering from a mild form of exophthalmic goitre it seems quite reasonable to think that this may have been a factor in producing the choroiditis.

Two of these cases, Nos. 1 and 2, have been under observation for seven years, during which time the vision has been maintained and no complications of any kind have arisen. While the other cases are much more recent there is every reason to suppose that their final results will be equally satisfactory.

Although I have been so fortunate in all my cases I do not lose sight of the risk attendant upon this operation, nor do I wish to appear to advocate its indiscriminate use. I believe the Fukala method to be the best in all young subjects; in older ones where lenticular changes have begun I have found it best to make a preliminary iridectomy followed by a preliminary capsulotomy and extraction. I need hardly add that the most careful asepsis should be observed, and that great care should be taken in needling not to puncture the posterior capsule. Above all, the patient should be kept under the closest observation in order that any complication may be dealt with promptly.

BIBLIOGRAPHY.

1. A. Hugh Thomson, *Ophthalmic Review*, November, 1910.
2. J. G. Cath, *Archives of Ophthalmology*, XLI, 406.
3. Robert Hesse, *Abstracts of Ophthalmology*, VIII, 92.
4. C. Geert, *Ophthalmology*, VII, 674.

THE CONSERVATIVE TREATMENT OF CHRONIC AURAL SUPPURATION.*

By ROBERT L. LOUGHRAN, M.D.,
NEW YORK CITY.

AN apology is perhaps due for bringing to your attention such a time-worn subject as the one here presented, especially as it is not possible to add anything to what is already well known. And yet the question of the prevention and the satisfactory cure of a chronic suppurative otitis media is ever a vitally interesting one when we come to consider the enormous number of such cases which are daily coming to our clinics for treatment and which are so frequently brought up for discussion in the course of instruction to post-graduate medical students.

Of all the lesions with which we meet in dealing with the diseases of the auditory apparatus, none present greater difficulties or are more liable to successfully resist our best efforts at their amelioration than a chronically discharging ear. The fact that it is a chronic condition with which we have to contend, and that the majority of cases come to us after long periods of neglect and that such neglect must necessarily have resulted in permanent damage to the parts involved and an interference with their normal function, as the organ of hearing, is perhaps the greatest cause for our inability to give a satisfactory prognosis. Even though we are able to obtain a cure as far as the discharge is concerned, yet we must too frequently confess our inability to restore what, while it may not be as essential to life, yet is of the greatest importance from the patient's standpoint, the power of hearing. The impression so frequently held by the laity that the continuation of the discharge is an indication of safety and that its cessation is a danger signal has in the past been too prevalent, and it should be our duty as otologists to impress upon those suffering from any ear disturbance that a discharge from the ear is an evidence of the greatest danger and should be treated with care from its very inception.

A so-called chronic suppurative condition of the middle ear must of necessity follow the existence of an acute stage which was characterized by the exudation of serum into the middle-ear cavity and which for some reason or other failed of resolution after a reasonable period. Probably the most frequent causes of such a failure of resolution are: (1) Insufficient treatment during the acute stage; (2) Failure to recognize the fact that the symptoms pre-

* Read at the annual meeting of the Medical Society of the State of New York, at Rochester, April 30, 1913.

sented at the time of the onset of the lesion were not alone those of an acute otitis media, but of an acute involvement of the mastoid antrum as well; (3) The existence of some secondary focus for reinfection, which while not active in producing lesion in the beginning, yet was sufficient to prevent the restoration of the inflamed area to its normal condition after the acute stage was over; (4) The existence of some constitutional factor which interfered with the physiological process of repair or actually acted as an agent for continued reinfection, such conditions being tuberculosis, syphilis, diabetes, ænemia and general malnutrition.

The proper treatment of an acute suppurative otitis rests entirely, as far as our efforts are concerned, on drainage. When we have an inflammatory condition of the mucous membrane of the middle ear, which has passed from the stage of congestion to that of exudation, we are dealing, for all practical purposes, with an abscess, with an accumulation of purulent fluid which in any other portion of the body would require evacuation, and which in the present enlightened day of surgery would be best treated by a free and complete incision, with the added necessity of the establishing of every effort to promote prompt resolution and restoration of the parts to their normal condition. Neglect of such precautions tends to retard resolution or to the development of a permanent focus of infection and suppuration, which may confine itself to the area originally involved or may extend to the surrounding structures. So it is with an infective process within the middle-ear. The day of a paracentesis of the drum membrane has gone by, and we are now alive to the fact that in dealing with a suppurative otitis, we are dealing with the necessity for the prompt and complete evacuation of an abscess, which, under the best circumstances, is a serious condition and, too, with an abscess cavity whose walls are not smooth and straight, but with one which is made up of various chambers more or less incompletely connected with each other, such chambers being the outer opening of the eustachian tube, an enlarged aditus ad antrum, the attic with its bony ridges and frequently well-developed folds of mucous membrane, the cul-de-sacs formed by the various ligaments and by possible adhesion bands or hypertrophic mucous membrane remaining from some previous infection.

It is essential, therefore, in order to prevent the possible development of a chronically discharging middle-ear to establish at the earliest possible moment complete and efficient drainage by making in the drum membrane the largest and longest opening compatible with safety to the parts involved, and by maintaining throughout the whole of the exudative stage an unobstructed path for the evacuation of the infective secretion through the drum and auditory canal.

The involvement of the mastoid antrum coincident with the acute otitis, but without sufficient evidence to indicate a mastoiditis, may be a very frequent cause of a later chronic suppurative condition. This undoubtedly occurs more frequently than we suspect, especially in children, for the aditus ad antrum being of good size in the early years of life may not be sufficiently walled off during the acute inflammatory stage to prevent its acting as a path of infection from the middle-ear into the well developed antrum. In such cases the fact that sufficient symptoms do not develop to indicate operative interference upon the mastoid bone is due to the fact that the aditus acts as a sufficient drainage path from the antrum into the middle ear and out through the drum membrane, and so prevents further extension into the bony structure of the mastoid itself. If such drainage is sufficient, the infective process within the antrum diminishes as it would were the middle-ear cavity alone involved, and complete resolution takes place in both within a reasonable length of time. If not, the acute suppurative condition passes into a chronic one, the middle-ear inflammation subsiding but the discharge continuing from the fact that the antrum remains as a constant focus of suppuration. This condition may frequently be demonstrated in the course of the radical operation in those cases which, while presenting an occlusion of the antrum, its place being taken by dense laminated bone tissue, the end result of a long continued chronic suppurative process within the mastoid bone, yet presents a patent aditus which will invariably be found to be filled with degenerated mucous membrane and granulation tissue. So much for prevention, which, after all, is a vital element in the discussion of a cure.

The treatment of any chronic suppurative condition must be undertaken with a realization of some uncertainty as to a perfectly satisfactory outcome, and in no condition is this more true than in the case of a chronic aural suppuration where it is necessary to overcome not only the constitutional effects of its prolonged existence, but also the fact that we are dealing with an area which it is very difficult to get at and treat locally except by radical means, for the middle-ear is the most inaccessible of any organ of the body, and the conservative treatment of a lesion within its limits often taxes to the utmost our skill and patience in gaining a satisfactory result.

Discharging ears present themselves in various degrees of involvement. The lesion may confine itself to a hypertrophic and œdematous condition of the mucous membrane of the tube and middle ear, as seen in those cases of shorter duration where the infection was not especially severe in the beginning, but where the efforts at physiological repair were interfered with by insufficient drainage, or it may have extended sufficiently to have resulted in an actual destruction of the mucous membrane and an involvement of the periosteum, with erosion or actual necrosis of the underlying wall and ossicles, such

cases being those of severe infection or ones of long standing. And finally, there may be included along with the middle-ear condition an involvement of the mastoid antrum, this acting as a focus of constant reinfection.

In dealing with those conditions in which no involvement of the periosteum or bone exists, treatment aims at an effort to promote resolution in the œdematous membrane and its return to as near a normal condition as possible and also to so stimulate the drum, that it will be in a condition to heal by the time the discharge has ceased. This necessitates the establishment of complete and efficient drainage from every portion of the infected cavity, for without free drainage, resolution will not take place. The thickened and œdematous drum membrane should be incised without reference to any previously existing perforation, the incision beginning at the lowest point and extending along the margin of the posterior quadrant. The knife should not be withdrawn until it is felt to impinge on the bony ring forming the upper border of Schrapnell's membrane. This includes an incision of the skin of the superior wall of the auditory canal at the point where it joins the membrane. In this way we provide a means of exit for the purulent exudate not only from the region adjacent to the drum, but also for that which may be confined within the attic and the pouches formed by the ligaments in that locality.

Following the establishment of free drainage, effort is next directed to the swollen mucous membrane. Frequent irrigations of an antiseptic as well as an astringent fluid, used hot and in good quantity, helps not only to disinfect the cavity, but by stimulation tends to reduce the œdema of both the mucous membrane and the drum. Probably the agent most useful for this purpose is a 1-5000 solution of the bichloride of mercury. Bland solutions, such as boric acid, normal salt or sterile water do not serve as well on account of their lack of the essential element of astringency and their tendency to promote maceration of the tissues with which they come in contact and so interfere with drainage.

Immediately following each washing away of the accumulated discharge the instillation of astringents such as alcohol, hydrogen peroxide or weak solutions of iodine are of service in promoting contraction in the inflamed tissues and so aid in obtaining the object aimed at. The long-used combination of boric acid gr. 20, alcohol and 1-1000 bichloride solution serves an excellent purpose, and favorable results have been obtained by the use of salusol. The eustachian tube can best be treated by catheterization and inflation of the tube and middle ear with the vapor of iodine. This acts not only to stimulate the mucous membrane of the tube to resolution but also helps to drive out retained secretions which would not be affected by irrigation of the middle-ear cavity. Any retarding influence within the nasopharynx should be removed, such as nasal obstructions, adenoids, etc. With the diminution of the discharge to a minimum, irrigations should be discontinued on account of the tendency of any watery solution to promote maceration.

Another class of cases in which the lesion is confined to the soft tissues is that where the chief symptom is an intermittent discharge, which at times may be profuse, but as a rule is thin and watery. Otoscopic examination shows a clear-cut perforation, involving the whole or a portion of the drum through which may be seen the mucous membrane covering the promontory. It may be of a red or pale yellowish color. Such a condition is one of an atrophic mucous membrane, and the intermittent discharge is not a property of the lining membrane itself but the result of some congestive disturbance within the nasopharyngeal end of the tube, secondary to a congestive condition within the nasal pharynx, such as an acute rhinitis or pharyngitis or an engorgement of the adenoid tissue—the ordinary cold in the head. With the disappearance of the nasal pharyngeal inflammation the discharge ceases. Conservative treatment can be here practiced to its greatest extent. Keeping the cavity clear of secretions and the application of mild astrigents are the only measures indicated as far as the ear is concerned. Stimulation and mechanical interference cannot improve the atrophy. Nor does it seem wise to make any effort at closing the opening in the drum, for the perforation is the safety valve that prevents an active otitis during an exacerbation of the discharge, and its closure would at the best only aim at improving the hearing, which usually is already surprisingly good, but would also introduce the certainty of reincision in case of acute involvement. The atrophic type is the most satisfactory condition of chronic otitis with which we have to deal.

In those conditions then where the mucous membrane can be demonstrated to be the seat of the disturbance, the applications of the principles of drainage, cleanliness and astringency serve a sufficient purpose in effecting a cure as far as the discharge is concerned. The restoration of normal hearing depends upon the amount of damage to which the parts have been subjected, the extent of the destruction of the drum membrane, and the ability of the ossicular chain to take up its function as a conductor of sound.

Where the suppurative process has extended to the periosteum and the bone of the middle-ear cavity is in a condition of erosion and necrosis, the probability of success in conservative treatment to stop the discharge depends upon several factors: The physical condition of patient; the accessibility of the discharging area to local aplication; the extent of involvement; and finally, the question as to whether the lesion is confined to the middle ear. Here the same principles that apply to non-necrotic conditions hold good; drainage, cleanliness and astringency with the aided

necessity of removal of diseased areas of mucous membrane, periosteum, and bone and degenerating granulation tissue, with the hope of so improving conditions as to encourage repair by the development of scar tissue.

Where the necrotic area is localized within the attic, as is often seen in cases where the development of the chronic suppuration has been due more to insufficient drainage than to the severity of the original infection, we are apt to find a tendency toward organization of the granulated tissue and the development of a polypoid condition, which may appear in the drum opening or be large enough to fill the canal. With the removal of the polypoid mass by snare or curette and cauterization of its base, sufficient drainage may be established and resolution take place. In using a snare or curette it is well to keep in mind two points: First, the possibility of the base of the polyp extending into the antrum, in which case inability to remove it entirely would defeat our efforts, and second the fact that the polyp may be the result of a complete destruction of the roof of attic and aditus and its base be the center of a latent pachymeningitis which needs but the stimulus of increased congestion associated with any interference with it to develop an acute exacerbation involving the meninges or brain. A polypus in the middle-ear cavity should be attacked with care and with a realization that serious consequences do follow their removal.

Ossiculectomy, so popular before the advent of the radical operation, has now come to be a procedure of election only in those cases where it can be demonstrated that the lesion is confined to the ossicles, or where it is desired to increase drainage from the attic. It can serve no purpose in improving a condition of necrosis, which includes the walls of cavity, for curetting associated with ossiculectomy is a dangerous procedure. Three cases of facial paralysis have come under the reader's observation within the past two years, where, along with removal of the ossicles, the posterior wall of the middle-ear cavity has been sufficiently curetted in an effort to remove dead bone at that point to open the facial canal and produce irreparable damage to the nerve.

The procedure suggested by Yankeur serves an excellent purpose in these cases where the lesion is confined to the eustachian opening, but is most successful in those cases of an atrophic condition of mucous membrane with large permanent drum perforations.

The success of any conservative procedure within the middle ear, whether it be operative or otherwise, depends entirely on the complete removal of all necrosis, and the ability of the remaining soft tissues to undergo resolution by the development of scar tissue to replace the area destroyed.

There is another condition to be considered in the treatment of aural suppuration in children. Those cases in which the discharge comes not so much from a necrotic lesion within the middle ear cavity, as from a chronic mastoiditis, which has become latent, the antrum being the chief area of involvement. Fifteen such cases have been operated on at the Post Graduate Hospital during the past winter, the simple mastoid operation being performed, care being taken to open up the aditus as completely as possible. The drum was thoroughly incised and every effort made for thorough drainage both from the middle-ear cavity as well as the mastoid cavity. In two cases the necrotic area within the middle ear was sufficiently extensive to prevent any repair whatever and radical operation was later performed. Eight healed entirely, the middle-ear cavity remaining dry. Three showed marked improvement, in that the discharge was only noticeable when there was some congestive disturbance within the nasopharynx.

The advantage of such procedure in children is the possibility of retaining hearing, and its disadvantages can only be the possible necessity of subjecting the patient to a second operation, and the probability of obtaining a less satisfactory cosmetic result in the post-auricular scar, than if primary closure had been made in the first place.

In regard to the use of vaccines, the concensus of opinion seems to be that in those cases of chronic suppuration confined to the soft tissues, the use of an autogenous vaccine is of value. Huevelle has collected a series of 274 cases with a cure in 175, an improvement in 35.

Where necrosis exists the opinion of various authors vary widely. Personal experience with a series of some thirty cases of chronic discharge in children, favorable results were obtained where no necrosis could be demonstrated. In the eight cases where dead bone was manifestly present, two were operated on for acute mastoiditis, and the remaining six showed no evidence of improvement whatever. The use of vaccine is of value as an aid in treatment, provided they are used rationally with reference to the requirements and ability of the blood to profit by their introduction.

Conservative treatment then is indicated in those cases of mild severity where the discharging area is confined to the soft tissues or to localized necrotic areas which are susceptible of local application, where the amount of damage to hearing is not pronounced and where by attention to general physical conditions sufficient resistance may be developed to assist our efforts in overcoming the suppurative condition. With extensive involvement and with symptoms indicating extension to surrounding structures and where deafness is so pronounced as not to be a factor for consideration, the radical removal of all diseased areas by the Stacke operation promises the best results for the relief of the symptoms.

Discussion.

Dr. Clement F. Thiesen, Albany, N. Y.: The most important thing in the treatment of a chronic aural discharge is to aid nature by draining the mastoid antrum, and this is accomplished by keeping the middle ear clear of secretion. Aural polypi and ganulation tissue should be removed and the ear then treated with silver nitrate solution. It must be remembered that spontaneous healing occurs in a fair percentage of the cases when drainage is good, and in the absence of serious symptoms it is safe to try conservative treatment for at least a time. Treatment should be first directed to the prevention of a reinfection of the middle ear and then to the checking of the aural discharges. A prevention of reinfection of the middle ear may be accomplished by the removal of adenoids and diseased tonsils and the proper treatment of suppurative conditions of the accessory nasal sinuses. Adenoids in adults are not an infrequent cause in keeping up the discharges from the ear. Maintenance of free drainage and keeping perforation open as long as there is any discharge is of greatest importance in the treatment. A complete closing of the eustachian tube according to the method advocated by Yankauer will check the discharge in some cases. Filling the external canal with solutions of bichloride after thoroughly drying and allowing solution to remain in the canal for 15 or 20 minutes is of great service in some cases.

Dr. Wendell C. Phillips, New York City: It should be borne in mind that in chronic aural suppuration the lesion is rarely confined to the tympanic cavity proper, and in this discussion I would differentiate in all cases, persistent otorrhea from recurrent attacks. In the latter type, adenoids and tonsils are almost invariably present and their removal may be expected to effect a cure. I would further express a belief that all chronic purulent otorrheas with extensive bone lesions were primarily cases of acute mastoiditis which should have been operated upon. Whenever cholesteatoma is present the radical mastoid operation should be performed. As a rule, extensive polypoid degeneration indicates sufficient gravity of bone lesion to require the radical mastoid operation. There are many cases in whom the bony lesion is confined to the ossicles, the outer attic wall or to the cells in the vicinity of the eustachian orifice, which are amenable to treatment by the intratympanic method. This operation should be more than an ossiculectomy, for the outer attic wall should be cut away and the eustachian orifice curetted either with a Yankauer or other form of curette. Facial paralysis may follow this operation, but it is less likely to occur than in the radical mastoid operation.

Dr. William H. Bates, New York City: Drainage is important. Let me call attention to the value of the congestive treatment of abscesses practiced by Prof. Bier, of Berlin. Von Graefe cured hypopyon with a pressure bandage and without the use of antiseptics or drainage. The speaker described briefly a case of hypopyon keratitis in which this method was employed when the pus was absorbed in twenty-four hours. What caused the absorption of the pus by the bandage? After learning the methods of Prof. Bier it was believed that the benefit was due to the increased congestion from the bandage. A case of hypopyon keratitis was treated by the method of Von Graefe with a pressure bandage, but the bandage was not applied to the eye or eyelids. It was wound tightly as in the first case. The congestion was marked. Chemosis was decided. Twenty-four hours later the pus in the anterior chamber had disappeared. The same principle has been applied to purulent otitis with benefit.

Dr. Sargent F. Snow, Spracuse: I would simply emphasize the points made by Dr. Loughran in his excellent paper, especially the incision of the drum membrane he has described. Such an incision, in my experience has seemed to protect a multitude of my cases from more extensive operative procedures.

I regret that I cannot agree with Dr. Phillips that those cases showing polypi or granulation tissue call for the radical mastoid operation—my own results incline me in the other direction.

My practice is to curette and remove polypoid and granulation tissue and apply to the stump chromic acid fused on a small probe. If the bone is soft, thorough curetting and a 10 per cent. solution of chromic acid is very effective.

Dr. James E. McCambridge, Poughkeepsie: Reports of cases which have not responded to moist and dry local treatment has responded to the use of autogenous vaccine, bacillus pyocyoneus and staphylococcus aureus being the most common organism. One case of fourteen years' standing was healed up in six weeks by the use of an autogenous vaccine.

THE OPERATIVE FINDINGS AND RESULTS IN MASTOIDITIS, ACUTE AND CHRONIC.*

By J. M. INGERSOLL, A.M., M.D.,
CLEVELAND, OHIO.

IT is the purpose of this paper to describe briefly the symptoms, operative findings and results in a few cases of mastoiditis. Naturally such a paper will contain little or nothing which is strikingly new but the consideration of the symptoms and operative findings may help us to recognize similar cases early and, by prompt operation, prevent serious complications.

Case 1.—A boy, one year old. He had had a coryza followed by a purulent discharge from

* Read at the annual meeting of the Medical Society of the State of New York, at Rochester, April 30, 1913.

the right ear for five weeks. The temperature was normal but the discharge from the ear was profuse and the posterior wall of the auditory canal was bulging. On account of the profuse discharge and bulging canal wall, a mastoid operation was done and a large antrum filled with pus was opened. The discharge from the ear ceased in a few days and the mastoid incision was entirely healed in two weeks. The hearing in this ear is now normal. This case illustrates the well-known fact that a profuse purulent discharge from the ear, continuing for more than four weeks, is an almost certain indication of infection of the mastoid antrum. If, in addition to the profuse discharge, there is some swelling of the posterior or superior membranous canal wall, the diagnosis of mastoiditis is positive, for the swelling is caused by the inflammation in the mastoid cells situated between the antrum and the auditory canal.

Case 2.—Male, thirty-five years old. Acute suppurative otitis for six weeks. Profuse purulent discharge with slight bulging of the posterior canal wall and tenderness over the tip of the mastoid. Temperature, normal. Operation. The mastoid cells had practically all been destroyed, making one large cavity extending down to the tip, filled with granulation tissue and pus. The whole tip of the mastoid was necrotic and was removed as a sequestrum. The recovery was uneventful and complete, with normal hearing. This case shows how rapidly the whole mastoid may become inflamed and even partially necrotic without causing very marked symptoms. This patient had remained at home only two days at the beginning of the acute infection in the ear and had not consulted any physician until the day before the operation. The tenderness over the tip of the mastoid indicated an infection in the cells there, but one would naturally expect more evident indications of so extensive an involvement of the bone.

Case 3.—Male, twenty-one years old. Profuse purulent discharge from left ear for six weeks. Granulation tissue projecting through the perforation in the drum membrane. Some swelling and tenderness over the mastoid bone. Temperature 99.8°. Operation. All the mastoid cells were filled with pus and granulation tissue. The sigmoid sinus had been exposed by necrosis and was covered with granulations. There was a small extradural abscess just above the sinus. Recovery was complete in three weeks.

This case also shows how extensive the destruction of the mastoid may be, without causing very decided symptoms. The mastoiditis was self evident but there were no symptoms indicating brain abscess or any involvement of the sinus.

Case 4.—Male, forty years old. Purulent discharge from the ear for seven weeks following an attack of tonsilitis. Temperature 99.6°. The whole membranous canal was inflamed and tender and there was considerable swelling above and anterior to the ear, extending forward as far as the orbit. Posterior to the ear there was very little tenderness or swelling.

The discharge from the ear had been gradually decreasing and it was thought that perhaps the swelling around the ear was due to the external otitis, so that the patient was kept under observation for a few days. Then tenderness over the antrum became manifest and the mastoid was opened. The mastoid cells extended well forward into the posterior root of the zygoma and posteriorly back and around the sinus. They were all filled with granulation tissue and pus, and the cells posterior to the sinus had broken down, causing an extra dural abscess. The wound was packed wide open. On account of its size it filled in slowly, so that it was necessary to dress it for eight weeks. It healed, however, without much depression and the hearing was normal.

In this case the swelling above and anterior to the ear, and in the superior and anterior part of the canal wall was due to the infection in the cells which extended forward into the zygoma and not to an external otitis. It would have been better to have operated when the patient was first seen.

Case 5.—Girl, three years old. She had had a severe coryza for four days and was seen a few hours after she first began to complain of pain in the right ear. The drum membrane was red and bulging, and an incision was made in the posterior inferior quadrant. There was a free serous discharge which became purulent in two days. The temperature ranged between 101° and 103°. Twelve days after the incision in the drum membrane, there was some swelling in the canal wall posteriorly and the sterno-cleido-mastoid muscle was slightly tense with some fixation of the tissue over the tip of the mastoid. The latter two symptoms indicated that the cells in the tip of the mastoid were infected and the mastoid was opened. The temperature came down to normal in three days and for 12 days everything seemed to be progressing favorably. Then the temperature went up to 102°, and a little granulation tissue appeared on the posterior canal wall. Under this tissue necrotic bone could be felt and a second operation was done at once. The posterior canal wall, down to the margin of the annulus tympanicus, the whole tip of the mastoid and part of the covering of the sinus, were removed, as there was some necrosis in all of these structures. Recovery after the second operation was complete in four weeks.

In this case the infection involved the mastoid, in spite of a free and early incision in the drum membrane, and, although the first mastoid operation was as thorough and complete as the indications seemed to warrant, it became necessary to do a modified radical operation. The necrosis which developed after the first opera-

tion was probably due to the severity of the infection (streptococcus) and the low resistance of the patient.

Case 6.—Male, four years old. Chronic foul suppuration in left ear since infancy; middle ear filled with granulations. No tenderness nor swelling over the mastoid. Temperature normal.

Radical mastoid operation. A sequestrum containing most of the mastoid cells and the outer covering of the sinus was removed. The roof of the middle ear and antrum was necrotic, exposing the dura which was covered with granulations. Because the sinus and dura were exposed, the inferior part of the mastoid incision was left open and packed. The ear was dry and healing was complete at the end of two months.

In this case the chronic suppuration had exposed the dura and the sinus, and the wonder is, that the child had not died of meningitis or sinus infection.

Case 7.—Boy, five years old. Profuse, foul, purulent discharge from left ear for fourteen months, following scarlet fever. Middle ear filled with granulations. Temperature 105°. Restlessness, nausea and semiconsciousness, made the diagnosis of meningitis almost certain and the prognosis very unfavorable.

A radical mastoid was done a few hours after the boy was admitted to the hospital. The roof of the middle ear and antrum was necrotic. The dura was inflamed and tense, and so it was uncovered over an area about three centimeters in diameter and incised. There was a little serous discharge through the incision. The day after the operation the boy was slightly better but on the second day he was worse and died on the third day. No autopsy was permitted.

If this boy's ear had been operated upon before the meningeal infection had take place, his life would probably have been saved.

Case 8.—Female, thirty years old. Chronic, bilateral suppurative otitis media. Facial paralysis on the left side, dizziness, nausea, headache and spontaneous nystagmus to the right. After turning to the left, the nystagmus to the right was decidedly increased for 43 seconds. Turning to the right, nystagmus to the left, 20 seconds. Caloric reaction present in the left ear but sluggish. Hearing (acoumeter) left ear, one centimeter, right ear, 18 centimeters. Fistula symptoms absent. Temperature 99.2°. From the above symptoms, the diagnosis of paralabyrinthitis, with some involvement of the facial nerve was made and a radical mastoid operation done. The sigmoid sinus was covered by such a thin, bony cortex that it could be seen when the periostium had been removed. It was so far forward that it was necessary to expose the sinus in order to get working space.

In spite of the negative symptoms, a careful search was made for a labyrinthine fistula but none was found.

After the operation the facial paralysis improved, the spontaneous nystagmus decreased and the temperature went down to normal. On the tenth day the temperature went up to 102°. There was considerable headache and necrotic bone could be felt in the region of the horizontal semicircular canal. The mastoid incision was opened and because a fistula in the horizontal canal was found, a labyrinth operation was done. There was some necrosis of the bone over the facial nerve and a small sequestrum was removed, leaving the facial nerve exposed. At the end of three months this ear was dry but there was still some facial paralysis.

The right mastoid now began to be sensitive, and the patient had some nausea and headache. There was a perforation in the posterior inferior part of the drum membrane through which granulation tissue, covering the promontory, could be seen. The rest of the membrane was in fairly good condition and there seemed to be no necrosis of the ossicles.

On account of the mastoid tenderness, headache and nausea, it seemed necessary to operate upon this ear also in spite of the fact that the left ear was absolutely deaf and that the hearing in this ear might be made less acute. A modified radical mastoid was done. The mastoid antrum was filled by a cholesteatoma but the rest of the mastoid appeared to be eburnized and was left untouched. At the end of seven weeks this ear was dry. It was very gratifying to have the hearing in this ear increase from 18 to 110 centimeters (acoumeter).

In this case the facial nerve was involved before the operation and the slight facial paralysis which remains cannot be attributed to the operation. Both the facial paralysis and the labyrinth infection would have been avoided by an earlier operation.

In nearly all of the above cases radiographs were taken of both ears and in the cases in which only one mastoid was involved the normal ear furnished a standard for comparison. Invariably the diseased mastoid gave a dimmer picture than the normal one, the mastoid cells were indistinct and the cell walls were partly or completely obliterated; whereas in the normal ear the cells were clear-cut and distinct.

Stereoscopic radiographs of the head, taken to show the infected mastoid, were found to be exceedingly valuable helps in making the diagnosis and in determining the position of the sigmoid sinus, the relation of the mastoid cells to it and how far forward the cells extended into the zygoma and also the lower limit of the brain cavity over the middle ear and the antrum.

It is possible in many cases to make a positive diagnosis of exposure of the dura and sinus by studying the stereoscopic radiographs of the mastoid, before such exposure has caused any clinical symptoms. In other words stereoscopic radiographs often enable us to recognize the imminent danger of meningitis, sinus thrombosis and brain abscess before these infections actually

develop and by prompt operation to prevent their development.

In the acute cases the operative findings and the results obtained justify the following conclusions. A profuse purulent discharge from the ear continuing for more than six weeks is almost positive evidence of mastoid infection. If, in addition to this there is some sagging of the posterior canal wall, the evidence of mastoid infection is certain. The sooner a mastoid operation is done the better is the prognosis for rapid recovery with normal hearing.

Elevation of the temperature, if present, helps to confirm the diagnosis, but a normal temperature does not speak against the diagnosis of mastoiditis.

Tenderness over the mastoid antrum or tip or over the root of the zygoma and fixation of the sterno-cleido-mastoid muscles are all confirmatory signs.

In chronic suppurative otitis media, careful, persistent local treatment should be carried out for two months if the condition improves during this time. If it does not improve in two months' time, or if there are any positive indications of involvement of the labyrinth, sinus or brain, then a radical mastoid operation should be done.

It is hardly necessary to state that these conclusions are not original with the author. They are the accepted teachings of all otologists.

Discussion.

DR. WENDELL C. PHILLIPS, New York City: We are indebted to Dr. Ingersoll for bringing before the section a subject which is of interest to all otologists and one which calls for keen discrimination and good judgment.

Typical acute mastoiditis is never difficult to diagnose. It is the atypical cases which are difficult to discriminate. An acute purulent otitis media which persists without abatement beyond the usual period, say three weeks, especially when the flow is profuse, usually denotes an involvement of at least the mastoid antrum. This is especially true in infants and young children, and even though the temperature and mastoid tenderness are absent, the otologist must face the possibility of the case becoming chronic and attended by bone necrosis and loss of hearing. Fever when present is significant, and when occuring during the second week of a profuse otorrhea, its seriousness should be given full consideration. I have operated upon a large number of cases of this type during the past two years, performing the simple mastoid operation, and have been surprised to find how frequently the pus escapes under pressure upon opening the mastoid antrum.

Radiography is helpful as a means of corroborating the diagnosis, and it may be employed as a means of convincing the patient or his friends that the disease really exists. Furthermore, the radiograph portrays the location of the lateral sinus and the extent of the mastoid cells.

TUBERCULOUS AFFECTIONS OF THE EAR.*

By THOMAS H. FARRELL, M.D.,

UTICA, N. Y.

TUBERCULOSIS of the ear is by no means infrequent, though certain forms are rare, as tubercular processes of the external ear. Tuberculous infection of the middle ear is much more frequent; it occurs most often as a secondary infection in patients with advanced phthisis; less often in those suffering from tuberculosis of other organs, as glands, bones or the latent tuberculosis of tonsil and adenoid vegetations.

Primary tuberculosis of the middle ear is rare according to most authors. Urbanstitch and Politzer do not mention it. Lermoyez and Boulay say that it exists without doubt, but only in exceptional cases. Many of the observations published cannot be accepted because the investigation is not accompanied by bacteriological findings.

Rebeling publishes the case of a child of ten months with positive inoculation of the guinea pig, and says he knows of only two other cases; one of Hake and the other of Wanscher Hang.

Grossman, Schwabach and Habermann publish observations with positive tests, and Habermann affirms that the blood can be the carrier to the ear.

Henrici believes that one-fifth of all mastoid cases in childen are tuberculous.

Milligan holds that primary tuberculous otitis media occurs more frequently than is supposed, but that the vast majority of cases occur in infancy and childhood, showing a tendency to diminish after the fourth year. When due to blood infection it may start in the cancellous tissue of the petromastoid; when due to inhalation or ingestion of tuberculous material, in the mucosa of the middle-ear cleft, the latter being more frequent.

Mr. Hunter Tod agrees with Dr. Milligan, while Mr. West holds that the frequency of tuberculous infections is overestimated. He submitted every suspicious case to animal inoculation as being the only conclusive method.

In reviewing the literature on this subject for the last three years one finds only thirteen contributions. In all of these the majority are reports of isolated cases of more or less interest, for example: Marriage[1] reports "a large tubercular polyp removed from the middle ear of an infant by way of the mastoid, with cure." Cipes[2] reports "a case of tuberculosis of both ears, cured by tuberculin" (a rather misleading title).

Dr. Santallo[3] reports a case of tubercular brain abscess following primary tuberculosis of the middle ear and mastoid with secondary infection of the lungs causing death, and elaborate autopsy findings.

Gomez[4] reports a tubercular mastoiditis orig-

* Read at the annual meeting of the Medical Society of the State of New York, at Rochester, April 30, 1913.

inating from a nasal lupus, recovering after operation.

Heinrich[5] reports a case of circumscribed, ganglionic tuberculosis of the lobe of the ear, being a recurrence of one removed five or six years previously.

Lubbers[6] reports a case of primary tuberculosis of the mastoid process with tuberculous sinus phlebitis.

J. Moeller[7] describes a "form of middle-ear tuberculosis hitherto unobserved," which he chooses to call "myringitis tuberculosa diffusa."

Ritter[8] reports a "fully cured middle-ear tuberculosis."

Besides these are valuable contributions by Claus[9], Milligan[10], Sûné y Molist[11] and Lasagna[12].

To Claus we are indebted for the following excellent classification and description of the rare affections of the external ear: (1). Lupus vulgaris. (2). Circumscribed tuberculous nodules of the lobe. (3). Tuberculous perichondritis. (4). The ordinary tuberculosis skin tumor. Lupus, he says, is observed most frequently in the ear entrance; it is either localized or spreads to the surroundings; at other times it may progress even to the concha. The process is very persistent and rebellious. At first the light brown to red nodules lie in the depth of the skin; later they rise toward the surface, forcing away the overlying epidermis; finally retrogade changes occur and isolated spots appear, with remaining atrophic, shining scars. Often the infiltrate breaks down and a lupus ulcer results. These ulcerations have little tendency to heal, burrow much to the bottom and lead to disturbances in the vicinity. As a result of perichondritis the cartilage dies and is thrown off, the whole of the concha may be lost and the cartilaginous canal attacked. The canal may become obliterated. On the ear lobule or the entrance one sees at times following lupus of the cutaneous and subcutaneous connective tissue, resulting elephantiasis. This last form must be differentiated (according to Hang), from nodular tuberculosis, which is especially frequent on the ear lobule. In nearly every case this new growth begins in cartilage or the perforations for earrings, hence women are more frequently afflicted. Clinically, it appears as a hazelnut- or walnut-sized nodular infiltration, covered with little normal cutis, and livid thinned skin. Histologically, it consists of a characteristic, tuberculous infiltration of the subcutaneous fat trabeculæ (or connective tissue). The affection attacks relatively strong persons and does not incline to recur. Hang believes that the benign course is due to a mild virulence of bacterium which besides in this location finds unfavorable nutrition.

Tuberculous perichondritis attacks mostly persons with hereditary tubercular tendencies. It begins preferably behind the tragus, as a diffuse, slightly painful infiltration; spreads to the cartilage and brings about necrosis; later it ruptures spontaneously with resulting fistulæ from which grow exuberant granulations. The neighboring glands are also attacked. Histologically, the affection shows as superficial, round-cell infiltration. Deeper, one finds stainable epithelium cell conglomeration. Central caseation does not seem to appear, although tubercle bacilli appear in the pus very sparingly.

The simple tuberculous ulcer appears similar to the above described nodular tuberculosis through infection of the earring perforations, or it spreads from the neighborhood to the external ear.

The diagnosis may be difficult in the beginning, but it is important, especially in lupus, to make it timely; the best method is by exploratory excision. The prognosis in general is favorable. The treatment consists in operative procedures, removing everything diseased. Lactic acid applications are made to tuberculous ulcerations.

In perichondritis it is possible to incise and curette the granulations and necrotic tissue, and drain with iodoform gauze. Glands are also extirpated. By this procedure it is possible to prevent further recurrence on the ear. Lupus may be treated by the Finsen light also.

In the tuberculous infection of the middle ear all are agreed that the most common route of invasion, in adults at any rate, is by way of the eustachian tube; other routes are by way of the lymph channels, the blood, or through perforations in the membrana tympani.

Herzog, after an examination of 1,907 cases, found tuberculous middle-ear disease in 14 per cent. of phthistic men and 9 per cent. of phthistic women. He believes that the preponderance of the affection in men is due to the fact that men cough, sneeze and breathe harder, and therefore aspirate tuberculous material into the tubes more easily.

In young children the tubercle bacilli do not necessarily come from the lungs. Tuberculous mothers and nurses infect the children by means of used handkerchiefs, by moistening nipples with their saliva, by tasting milk and by kissing. Aerial infection would seem to be a factor when you consider that the majority of cases of tubercular otitis media come from the poorest districts of our large cities, being improperly clad and fed, living in poorly ventilated, overcrowded sleeping rooms where other tuberculous patients may be sleeping.

Another means of dissemination is the mixing of large numbers of children with running ears, in schoolrooms not always well ventilated.

Milligan thinks that the importance of ingestion tuberculosis is underrated and that the lymphoid tissue constituting Waldeyer's ring is a most important portal of entry. He maintains that in infants and young children one of the most frequent avenues of infection is through the pharyngeal and nasopharyngeal mucosa and thence along the subepithelial lymphatics and

conglomeration of adenoid tissue to the middle ear. The bacillus is swallowed with the milk, then the regurgitation of food forces portions of semi-digested milk into the tonsillar crypts, the nasopharyngeal cavity and the neighborhood of the eustachian tube. In three of his cases he found that the little patients were being reared on milk from cows having tuberculous disease of the udder.

Of infection by the blood stream, opinions differ. While some hold that they occur seldom, others hold that in children they occur frequently, as is maintained by Karner and his pupil, Henrici. Barwick examined sixteen temporal bones of persons who had died from general miliary tuberculosis, finding five hematogenous infections. Briegan, who admits the possibility of blood infection, but holds it to be infrequent, gives as his opinion that in the other forms the infective process of the tympanum is already healed. He believes that the hematogenous infection of the bone is a rarity because tuberculosis of the skull bones is seldom seen.

Diagnosis.—Tuberculous infection in other parts of the body may call our attention but cannot prove the nature of the ear malady. The modern tuberculous vaccinations, the Pirquet cutaneous reaction and the ophthalmic reaction only give us notice that somewhere in the body a tuberculous focus is to be found. Injections of old tuberculin give, in all tuberculous ear affections, a positive reaction; their intensity, however, is so incalculable that facial paralysis has been noted following the injections. To verify the diagnosis it is necessary to discover the tubercle bacillus in the discharge, in the tufts of granulation tissue or portions of diseased bone, or to produce experimental tuberculosis in animals by inoculation with products from the diseased ear.

Attention is called to the fact that with a positive lesion the bacilli are not always found even when the tuberculous process has perforated and the bacilli liberated, according Schwabach, in only about one-thinrd of cases.

A. Stecky says it is very difficult to find the bacillus, as in eleven clinical cases it was shown in only one, after being negative in the first examinations and after the mastoid operation was performed.

To prevent confusion of the tubercle bacilli with the smegma bacilli, due to admixture of cerumen and cholesteatoma, differentiation must be made by decoloration with acid alcohol, whereby all bacilli are decolorized, with the exception of tubercle bacilli.

On account of the importance of making an accurate diagnosis as early as possible for therapeutic and prognostic purposes, Lasagna offers a new method which he claims is more certain than searching for the Koch bacillus, and free from the elaborate laboratory requirements for making inoculations of guinea pigs. His method is based on the proteolytic property of pus, studied for the first time by Muller and Joachim, in 1906.

These doctors demonstrated that drops of pus disseminated on Loeffler's plates containing a thick layer of coagulated blood serum, after a stay of twenty-four hours in a thermostat at 50 to 55 degrees, show here and there very small spots of liquefaction corresponding exactly to the places occupied before by the drops of pus. Kolaczech and Muller proved this phenomenon to be due to presence of a proteolytic ferment in the ordinary pus; but they found that in pus from the tubercular process, when no preparation of iodine had been given, the digestive action of the pus on the Loeffler's plates is absent.

Lasagna's technique is as follows: To the serum of blood drawn from the jugular vein of a cow he adds one gram of sodium chloride to every 100, 20 parts of water and 10 parts of glycerine; this mixture disposed in strata of different thicknesses in Petri's capsules or common tubes held obliquely, he puts in a thermostat at a temperature of from 70 to 75 degrees C. and so obtains in the space of three or four hours, a coagulation. This serum will retain a gelatinous consistency and can be kept on hand for the testing of the proteolytic ferment. When the plates are so prepared he puts on the surface some drops of pus taken from the deepest possible part of the ear; he puts them at a constant temperature of 50 degrees C. (not over 55 degrees) for 24 hours. If the pus is without proteolytic power (tubercular) the drops, little by little, dry on the medium and at each place form an easily seen opaque spot. On the contrary, when the pus has proteolytic power we see in the place of the drops of pus a small concave depression containing a semi-liquid substance formed at the expense of the nutritive medium. According to the proteolytic power of the pus, the depth and extent of the excavations vary. Tubercle bacilli in common pyogenes would moderate the proteolytic action.

Both Claus and Sûné y Molist, in noticing this method of Lasagna, consider that it needs extensive proof before acceptance. Sûné y Molist holds that suppurative otitis media, even though accompanied by fungus growths and caries, must show bacillus of Koch, and virulence by inoculation to satisfy the modern scientific diagnosis; but he adds that there is a clinical certainty which satisfies the ordinary otologist.

From a practical standpoint, an acute and chronic form are differentiated. In acute cases tubercles are numerous and break down easily; if on the membrana tympani, perforation takes place, followed by the extension of pale, œdematous and succulent granulations. Two or more tubercles are often deposited in the membrane, giving rise to multiple perforations which soon coalesce. When tubercles are seen on or through the membrane they appear as sharply

defined, pearly gray spots, surrounded by an uninflamed mucosa. Often, perhaps, the already latent, specific process becomes aggravated by the introduction of other bacteria; in this case the specific illness cannot be differentiated from other forms of acute otitis media; most frequently the diagnosis is then made at the necessary operation for mastoiditis.

The chronic type is much more common. The deposition of tubercle bacilli in the mucoperiosteum of the antrotympanic cavity frequently leads at an early stage to infection of the underlying bone and to subsequent carionecrotic changes, often extensive and painless. This leads in time to the exposure of the duramater, the facial nerve or the contents of the internal ear. In no other type of middle ear disease are the ossicles so frequently infected and destroyed because of the extensive destruction of the tympanic mucous membrane.

Bezold believes that there are lesions of the labyrinthine wall in more than one half of the cases of primary middle ear tuberculosis.

Hake considers caries of the footplate of the stapes to be a peculiarly characteristic symptom of tuberculosis.

Tubercular disease is more apt to attack cancellous than compact bone, hence the outer table may be intact when sequestra involve such important structures as the fallopian aqueduct, cochlea, semicircular canals, etc. Early enlargement of the peri-auricular glands is peculiarly characteristic and is often the first definite, objective indication of primary tubercular otitis media. First, the mastoid glands, then the deep glands of the posterior triangle, finally the parotid and retropharyngeal. The infective process spreads to the surrounding glands until large masses are formed. So long as degeneration and breaking down has not taken place they act as a first line of defense, preventing the dissemination of bacilli. The discharge is thin and sanious in the beginning and very apt to give rise to eczema. Later it becomes more copious, creamy and ill smelling, partly from broken down bone and partly from secondary infection with putrefactive organisms.

Infection of the meninges, the result of a direct infection or as a part of a general miliary tuberculosis, is not uncommon. The route of extension is most frequently by way of the internal ear. The occurence of a tuberculous brain abscess is very rare. As regards symptoms, there is no one pathognomonic; however, there is a typical collection such as: (1) painless onset; (2) absence of inflammatory reaction; (3) presence of two or more perforations; (4) granualations replacing the membrane tympani; (5) caries of the promontory; (6) early appearance of enlarged peri-auricular glands; (7) facial paralysis.

The prognosis is more favorable in primary tuberculosis than in secondary. In secondary infection the ear involvement is frequently over shadowed entirely by the general condition—the terminal stage of phthisis.

In primary tuberculosis of the middle ear the death rate in children is as high as fifty per cent. The younger the patient infected, the greater the risk. A tubercular family history adds to the gravity. The greater the area of gland involvement and the earlier the onset of facial paralysis, the worse the prognosis. The prognosis is favorable if the diseased focus can be eradicated by operation, which, therefore, should be extensive.

Treatment.—Treatment is often begun too late, due to the insidiousness of the disease and a failure to recognize its tubercular nature. In acute cases efficient drainage is all important; later, the affected bone may be removed, but at all stages drainage must be maintained.

Mr. Hunter Tod and Dr. Milligan advocate the use of tuberculin before involvement of the glands, facial nerve or mastoid takes place. Levy considers its use of doubtful value. In the hands of Bezold, Schwabach and Zarinko it has proved worthless. Local treatments with antiseptics, etc., are useless. In children, adenoid vegetations and enlarged tonsils should be removed as preliminary to any other treatment. The general treatment is as important in tuberculosis confined to the ear as in all other forms.

BIBLIOGRAPHY.

1. Marriage: "Large Tubercular Polyp Removed from Middle Ear of Infant of Seven Months." *Proceedings Roy. Soc. Med.*, Lond., 1910-11, IV, Otol. Sec., p. 41.
2. Cipes: "Tuberculosis of Both Ears Cured by Tuberculin." *N. Y. Med. Journal,* October 21, 1911, XCIV, 835-837.
3. De Santallo: "Complications Following Primary Tuberculosis of Middle Ear." *Bol. de Laryng. Otol. y Rinel.,* Madrid, p. 10, Jan., 1911.
4. Gomez: "Tuberculosis of the Mastoid." *Rev. Med. Cubana,* Habana, 1912, XX, 67-72.
5. Heinreich: "Circumscribed Tuberculosis of the Lobe of Ear," *Ztschr. f. Ohrenh. u. f. Krankh. d. Luftes,* Bd. 62, Heft. 4, p. 334, 1911. Abstracted in *Laryngoscope,* p. 1055, Nov., 1911.
6. Lubbers: "Ueber einen Fall Von Primarer Tuberkulos des Warzenfortsatzes mit Tuberkulos Sinus Phlebitis." *Beitr. 2 Anat. Physiol., Path. u. Therap. d. Ohres,* Berl., 1911-12, V, 317-321.
7. J. Moeller: "New Form of Middle Ear Tuberculosis." *Ztschr. f. Ohrenh. u. f. Krankh. d. Luftes,* Bd. 64, Heft. 1, p. 4, 1911.
8. Ritter: "Ausgehistte Mittlohrtuberkulos." *Deutsche Med. Wchnschr,* 1911, XXXVII, 1003.
9. Claus: "Die Tuberkulos der Gehörorgans." *Charite Ann.,* Berl., 1911, XXXV, 524-537.
10. Milligan. "Aural Tuberculosis in Children." *Journal Laryngology,* London, 1910, XXV, 506-522. "Discussion in Aural Tuberculosis in Children." *Br. Med. Jour.,* Lond., 1910, II, 1693-1698.
11. Sûné y Molist: "Tubercular Otitis and Otitic Tuberculosis." *Rev. Barcel de Emferm de Oido,* March-April, 1911.
12. Lasanga: "Di un Nuovo Metodo." *Arch. Ital. di Otol.,* Torion, 1910, XXI, 89-113.

Discussion.

Dr. Arthur B. Duel, New York City: I am quite convinced that tubercular processes in the middle ear in infants and young children are

frequently unrecognized and treated ineffectually by local irrigation and applications, during a stage when proper surgical measures might effect a cure. How often do we see infants passed from clinic to clinic, or from aurist to aurist, diagnosed as chronic purulent otitis, without any investigation of the nature of the infecting organism, and perfunctorily placed on routine local treatment for long periods. If such patients remain in the same clinic or under the observation of the same aurist long enough it finally becomes evident that the local treatments have not proven effectual, as it has in many other cases of purulent otitis; that a chronic mastoiditis or labyinthitis or meningitis has supervened.

It is then often too late to save in some instances a functionating ear; in some a functionating facial nerve; in some the life of the patient.

Now there was a stage in most of these cases where the tubercular process was confined to soft structures or such small areas of bone that their removal could have been accomplished, still leaving a functionating ear (though somewhat impaired) certainly largely removing the possibility of a later development of tubercular meningitis.

Tubercular otitis in adults in most instances presents a clinical picture which is easily recognized. In infants, this is often not so. It follows then that proper measures for its recognition should be instituted early in every case of purulent otitis which shows any tendency to chronicity, before irreparable destruction has occurred. A tuberculin test can easily be made. If negative, the case may be temporized with; if positive, the tubercular process may not necessarily be in the ear, but would be suspicious enough to warrant careful inoculation experiments in animals without delay.

The demonstration of a tubercular process in the ear should then be promptly followed by a radical operation in time to preserve a useful function in the ear and probably the life of the patient.

DR. EUGENE E. HINMAN, Albany: The writer of this admirable paper has mentioned several of the accepted avenues of infection in tuberculous affections of the ear. I would like to add one other, infected erosions of the external canal. Many writers call attention to the readiness with which infection invades the ear by way of the eustachian tubes. This may be explained by the loss of fat of the submucous tissues, which ordinarily in health is found in sufficient amount to afford some obstruction, but when the loss of such tissue is marked in the wasting of tuberculosis elsewhere, the tubes become patulous and infections easily gain access.

There is some difference of opinion as to the place of deposit of the infection in these cases. The three most important are the mucosa covering the promontory, that of the antrum or the inner lining of the tympanic membrane.

The writer mentions the necessity of being careful to differentiate between the several acid-fast bacilli to be found in the oral discharges. Observers have reported finding smegma bacillus, leprosy bacillus, Hay bacillus and Lustgartens bacillus, all of which take the stain and probably often because of the presence of butyric acid decomposition the stain is quite fast until immersed in the alcohol bath.

Milligan and others have mentioned facial paralysis as an early symptom of aural tuberculosis, especially in children. This is probably due to the fact that in children the facial canal is so often incomplete or very thin-walled and as bone tuberculosis is such a rapid process a perineuritis soon develops and a paresis or paralysis develops. Severe nerve deafness does not develop commonly in these cases. The extension to the inner ear may be through the fenestra or by an extension of a tubercular osteomyelitis which leads to an early involvement of the acoustic segments. The slowness of the process generally prevents the development of Meniere's symptoms.

Our treatment of tubercular otitis may well be divided into two classes, operable and inoperable. The operable cases may include primary cases, those where the local disease is believed to be an important contributing factor to general disease, and when labyrinthine symptoms are manifesting themselves.

The inoperable class would include those patients who show very rapid advance of a general tuberculosis; in debilitated infants; in those cases where there is extensive facial paralysis and glandular involvement.

Politizer has said as to treatment of these cases: "In all cases of incipient tuberculosis where an acute otitis has existed for six weeks without improvement operation should be undertaken."

DR. CLEMENT T. THEISEN, Albany, N. Y.: Insidious onset of the symptoms is quite characteristic. The appearance of the tympanic membrane is also important. Two or more perforations are frequently seen and the tympanic membrane instead of being reddened in the region of the perforations is somewhat edematous and anemic. There is often no pain and the discharge from the ear is at times the first indication of an ear trouble.

It is important to remove tonsils and adenoids early and have tissue examined for evidence of tuberculosis. Rapid bone destruction occurs particularly in young children, and cases of tubercular meningitis occur in a considerable percentage of cases.

DR. WENDELL C. PHILLIPS, New York City: Chronic aural discharge in infants and young children is prone to be of tuberculous origin. A marked diagnostic symptom of the tuberculous origin of the disease is its painless onset. Of the later symptoms, sequestration of bone and meningitis are common. In one of my cases

operated upon, in which the tegmen was entirely absent, the dura was intensely inflamed and dotted with numerous miliary tubercles. In another infant with an enormous abscess involving the mastoid region and surrounding soft tissues, I removed a sequestrum of the petrous portion of the temporal bone, which upon examination was found to be tuberculous.

Medical Society of the State of New York

PRELIMINARY SCIENTIFIC PROGRAM.

108TH ANNUAL MEETING, TO BE HELD AT HOTEL ASTOR, NEW YORK CITY, APRIL 28, 29, 30, 1914.

ARRANGED BY THE COMMITTEE ON SCIENTIFIC WORK.

Thomas J. Harris, M.D., Chairman,
104 East 40th St., New York City.
Thomas H. Halsted, M.D., Syracuse.
Lucius W. Hotchkiss, M.D., New York City.
Ross McPherson, M.D., New York City.
John O. Polak, M.D., Brooklyn.
Thomas S. Southworth, M.D., New York City.
Charles Stover, M.D., Amsterdam.

BY-LAWS, MEDICAL SOCIETY OF THE STATE OF NEW YORK, CHAPTER XI.

SECTION 1. No address or paper before the Society, except those of the President and orators, shall occupy more than twenty minutes in its delivery, and no member shall speak upon any question before the house for longer than five minutes nor more than once on any subject, except by consent.

SEC. 2. All papers read before the Society by its members shall become the property of the Society. Permission may be given, however, by the House of Delegates or the Committee on Publication to publish such paper in advance of its appearance in the NEW YORK STATE JOURNAL OF MEDICINE.

SECTION ON MEDICINE.

Chairman, Charles Stover, M.D., Amsterdam.
Secretary, George Reese Satterlee, M.D., New York.
Place of Meeting—Hotel Astor.

Tuesday Afternoon, April 28th.

1. Subject to be announced, Albert H. Garvin, M.D., Raybrook.
2. "Clinical Irregularities of the Heart," Alexander Lambert, M.D., New York.
3. "Pulsus Alterans," Hermon C. Gordinier, M.D., Troy.
4. "The Drop Heart," Charles Lyman Greene, M.D., St. Paul, Minn., by invitation.
5. "Percussion vs. the X-ray in the Examination of the Heart," George Cheever Shattuck, M.D., Boston, Mass., by invitation.

Wednesday Morning, April 29th.

6. "A Plea for the Diabetic," Douglas C. Moriarta, M.D., Saratoga Springs.
7. "Some Recent Thoughts on Diabetes and Metabolism," Waldron B. Vanderpoel, M.D., New York.
8. "Nephritis," Martin H. Fisher, M.D., Cincinnati, Ohio, by invitation.
9. "Experimental Study of the Spleen and its Relation to Blood Destruction and Regeneration, Hemolysis and Hemolytic Jaundice," Richard N. Pearce, M.D., Philadelphia, Pa., by invitation.
10. Subject to be announced, Arthur W. M. Ellis, M.D., New York, by invitation.

Thursday Morning, April 30th.

11. "Syringe Canula Transfusion," Edward Lindeman, M.D., New York.
12. "What Dependable Information is it Possible to Secure from Laboratory Examination of Patients with Gastric Symptoms. A Review of 7,000 Gastric Analyses," Frank Smithies, M.D., Chicago, Ill., by invitation.
13. "The Determination of Surgical Conditions of the Stomach," Walter A. Bastedo, M.D., and Leon T. LeWald, M.D., New York.
14. "Modern Methods of Neurological Diagnosis," Charles L. Dana, M.D., New York.
15. "Recent Methods of Treatment in Neurological Cases."

MEDICAL CLINICS.

Wednesday Afternoon, April 29th.

Charles G. Stockton, M.D., Buffalo (by invitation of Harlow Brooks, M.D.), City Hospital, Liver and Digestive Organs.

Lewis A. Conner, M.D., New York, New York Hospital, Kidney.

Alfred Meyer, M.D., and Associates, New York, Mt. Sinai Hospital, Clinical Demonstrations of Interesting Cases.

Rufus I. Cole, M.D., New York, Rockefeller Institute, Heart.

Robert H. Halsey, M.D., New York, Post Graduate Hospital, Heart.

William Van Valzah Hayes, M.D., New York, Polyclinic Hospital, Gastro-intestinal.

Charles L. Dana, M.D., Frederick Peterson, M.D., Pearce Bailey, M.D., Joseph Collins, M.D., New York, Neurological Institute, Neurological Cases.

James Alexander Miller, M.D., New York, Bellevue Hospital, Pulmonary Tuberculosis.

Thursday Afternoon, April 30th.

Harlow Brooks, M.D., New York, Montefiore Home, Ductless Glands, Circulatory System, Arthritis and Their Relation to the Nervous System.

Theodore C. Janeway, M.D., and Warfield T. Longcope, M.D., New York, Presbyterian Hospital, Kidney.

C. N. B. Camac, M.D., New York, City Hospital, Spleen and Lymphatic System.

Leo H. Neuman, M.D., Albany (by invitation of Alexander Lambert, M.D.), Bellevue Hospital, Heart.

Edward Lindeman, M.D., New York, Bellevue Hospital, Blood Transfusion.

Glentworth R. Butler, M.D., Brooklyn, Brooklyn Hospital, Heart.

Dudley D. Roberts, M.D., Brooklyn, Brooklyn Hospital, Gastro-intestinal.

John E. Welch, M.D., New York, Fordham Hospital, Liver and Digestive Organs.

Edward Quintard, M.D., New York, Post Graduate Hospital, Gastro-intestinal.

SECTION ON SURGERY.

Chairman, Lucius W. Hotchkiss, M.D., New York.
Secretary, Gilbert D. Gregor, M.D., Watertown.
Place of Meeting—Hotel Astor.

Tuesday Afternoon, April 28th.

1. "The Present Status of the Cancer Question," Roswell Park, M.D., Buffalo.
2. "The Treatment of Exophthalmic Goitre," John Rogers, M.D., New York.
3. "The Present Status of the Surgery of Spastic Contractures," Alfred S. Taylor, M.D., New York.
4. "The Value of the Various Tests for Determining the Functional Activity of the Kidney before Operation," James N. Vander Veer, M.D., Albany.
5. "Transfusion of Blood, Direct and Indirect. A Consideration of the Technic and Relative Value of Different Methods," John A. Hartwell, M.D., New York.

Wednesday Morning, April 29th.

6. "The Surgery of Cranial Fractures, with a Brief Consideration of the Results, Immediate and Remote, of Fractures of the Vault and Base of the Skull," Charles A. Elsberg, M.D., New York.

7. "The Surgery of Compound Fractures of the Extremities," William L. Estes, M.D., South Bethlehem, Pa., by invitation.

8. "Conservatism in the Operative Treatment of Simple Fractures," George Woolsey, M.D., New York.

9. "Non-operative Treatment of Fractures of the Neck and Upper End of the Femur in Adults," John B. Walker, M.D., New York.

10. "Diagnosis by the X-rays in Case of Fracture, Based on the Records of 10,000 Fractures in Bellevue Hospital," Isaac S. Hirsch, M.D., New York.

Thursday Morning, April 30th.

11. "The Surgical Treatment of Empyema," Charles N. Dowd, M.D., New York.

12. "Acute Osteomyelitis, Surgery of," William L. Wallace, M.D., Syracuse.

13. "A Consideration of Methods and Results in the Surgery of Rectal Carcinoma," Charles H. Peck, M.D., New York.

SURGICAL CLINICS.

Wednesday and Thursday Afternoons, April 29th, 30th.

SECTION ON OBSTETRICS AND GYNECOLOGY.

Chairman, Ross McPherson, M.D., New York.
Secretary, H. Judson Lipes, M.D., Albany.
Place of Meeting—Hotel Astor.

1. "Some Post-Natal Sequelæ of Asphyxia Neonatorum," Walter P. Manton, M.D., Detroit, Mich., by invitation.

2. "Diseases of the Umbilicus," Thomas S. Cullen, M.D., Baltimore, Md., by invitation.

3. "Treatment of Puerperal Sepsis by Means of Intravenous Injections of Magnesium Sulphate," Raleigh R. Huggins, M.D., Pittsburgh, Pa., by invitation.

4. "Infection with the Bacillus Coli Communis Complicating Pregnancy," Edward P. Davis, M.D., Philadelphia, Pa., by invitation.

5. "Sepsis in Obstetrics," William M. Brown, M.D., Rochester.

6. "The Dynamic Principles Underlying the Successful Curve of Procidentia with Cystocele and Rectocele," J. Riddle Goffe, M.D., New York. Discussion by Arnold Sturmdorf, M.D., and George G. Ward, Jr., M.D., New York.

7. "Cystitis Coli in Women," Henry D. Furniss, M.D., New York.

8. Title to be announced, John G. Clark, M.D., Philadelphia, Pa., by invitation.

9. "The Effect on Subsequent Labors of Operations for Uterine Displacement," George W. Kosmak, M.D., New York.

10. "Retrodeviation of the Uterus in the Puerperium," Francis C. Goldsborough, M.D., Buffalo.

11. "Uterine Hemorrhage in Young Girls," Henry C. Coe, M.D., New York.

OBSTETRICAL AND GYNECOLOGICAL CLINICS.

Wednesday and Thursday Afternoons, April 29th, 30th.

New York Polyclinic, Woman's Hospital, Bellevue Hospital, People's Hospital, Mt. Sinai Hospital, Jewish Maternity Hospital, Brooklyn Hospital, Lebanon Hospital, Roosevelt Hospital, Manhattan Maternity Hospital, Beth Israel Hospital, City Hospital, Gouverneur Hospital, Sloane Hospital for Women, New York Lying-in Hospital.

SECTION ON PEDIATRICS.

Chairman, Thomas S. Southworth, M.D., New York.
Secretary, Joseph Roby, M.D., Rochester.
Place of Meeting—Hotel Astor.

1. "Subacute and Chronic Intestinal Infections," Elias H. Bartley, M.D., Brooklyn.

2. "The Health Program of the Physical Training Department, Board of Education, New York City," C. Ward Crampton, M.D., New York.

3. "Record Charts for the New-born," Walter Lester Carr, M.D., New York.

4. "The Causes and Treatment of Eczema in Infancy and Childhood," Rowland G. Freeman, M.D., New York.

5. "Presentation of Cases of Sporadic Cretinism," Charles Herrman, M.D., New York.

6. "Some Manifestations of Influenza in Young Children," L. Emmett Holt, M.D., New York.

7. "Periodic Bronchitis in Children," Charles G. Kerley, M.D., New York.

8. "The Early Diagnosis of Congenital Syphilis," Carl G. Leo-Wolf, M.D., Niagara Falls.

9. "Active Immunization in Diphtheria," William H. Park, M.D., New York.

10. "Antityphoid Vaccination in Childhood," Major F. F. Russell, M.D., U. S. A., by invitation.

11. "Infant Welfare Work in New York State, exclusive of New York City," Henry L. K. Shaw, M.D., Albany.

12. "Further Studies in Gastric Analysis in Infants," DeWitt H. Sherman, M.D., Buffalo.

13. "Causes and Treatment of Chronic Conjunctival Affections in Childhood, including Trachoma," Anna W. Williams, M.D., New York.

14. "The Importance of the Medical Supervision of Older Children," Edward J. Wynkoop, M.D., Syracuse.

15. "The Causes of Adenoid Growths," Frank vander Bogert, M.D., Schenectady.

PEDIATRIC CLINICS.

Wednesday and Thursday Afternoons, April 29th, 30th.

2.30 to 3.30 and 4.00 to 5.00.

Frederic H. Bartlett, M.D., New York Babies' Hospital, O. P. D.

Elias H. Bartley, M.D., Brooklyn, Long Island College Hospital.

Augustus Caillé, New York, Babies' Ward, Post-Graduate Hospital.

Henry D. Chapin, M.D., New York, Post-Graduate Hospital.

Rufus I. Cole, M.D., New York, Rockefeller Institute.

C. Ward Crampton, M.D., New York, Public Schools (Physical Training).

Henry W. Frauenthal, M.D., New York, Hospital Deformities and Joint Diseases.

Rowland G. Freeman, M.D., New York, Children's Ward, Roosevelt Hospital.

Sidney V. Haas, M.D., New York, Lebanon Hospital.

Henry Heiman, M.D., New York, Mt. Sinai Hospital, O. P. D.

Alfred F. Hess, M.D., New York, Hebrew Infant Asylum.

B. Raymond Hoobler, M.D., New York, Bellevue Hospital, O. P. D.

Abraham Jacobi, M.D., New York, German Hospital.

Charles G. Kerley, M. D., New York, N. Y. Nursery and Child's Hospital.

Henry Koplik, M.D., New York, Mt. Sinai Hospital.

William B. Noyes, M.D., New York, Demilt Dispensary.

Matthias Nicoll, Jr., M.D., New York, Willard Parker Hospital.

William H. Park, M.D., New York, Research Laboratories, Department of Health.

Godfrey R. Pisek, M.D., New York Post-Graduate Hospital.

Wisner R. Townsend, M.D., New York, Hospital for Ruptured and Crippled.

E. Mather Sill, M.D., New York, Good Samaritan Dispensary.

SECTION ON EYE, EAR NOSE AND THROAT.

Chairman, Thomas H. Halsted, M.D., Syracuse.
Secretary, Percy Friedenberg, M.D., New York.
Place of Meeting—Hotel Astor.

Tuesday Afternoon, April 28th.

1. "Recent Progress in Ophthalmology," Arnold Knapp, M.D., New York.

2. "Present Status of Squint and Insufficiencies," Herbert Wright Wootton, M.D., New York.

3. "Glaucoma Operations, Old and New," Peter A. Callan, M.D., New York.

4. "Visual Field and Blind Spot," Colman Ward Cutler, M.D., New York.

5. "Ocular Sarcoma with Lantern Demonstrations," Walter B. Weidler, M.D., New York.

Wednesday Morning, April 29th.

Surgery of the Maxillary Sinus.

6. "Intra-nasal Route," Lee Maidment Hurd, M.D., New York.

7. "External Operations," Stephen H. Lutz, M.D., Brooklyn.

Symposium on Nasal Deformities and Fractures.

8. "The Correction of Nasal Deformities by Subcutaneous and Plastic Methods," John O. Roe, M.D., Rochester.

9. "The Correction of Nasal Deformities by Mechanical Replacement and the Transplantation of Bone," William Wesley Carter, M.D., New York.

10. "The Use of Paraffin in Nasal Deformities," Harmon Smith, M.D., New York.

Thursday Morning, April 30th.

11. "Lantern Demonstration of the Recent Advances in Direct Laryngoscopy, Bronchoscopy and Esophagoscopy," Chevalier Jackson, M.D., Pittsburg, Pa., by invitation.

12. "Report on the Recent Developments of Otology," Thomas J. Harris, M.D., New York.

13. "Factors in the Diagnosis of Labyrinthine Suppuration," John D. Richards, M.D., New York.

14. "The Value of More Accurate Knowledge in the Diagnosis of Mastoiditis by the General Practitioner," James F. McCaw, Watertown.

EYE, EAR, NOSE AND THROAT CLINICS.

Wednesday and Thursday Afternoons, April 29th, 30th.

An effort is being made by the Committee for Clinical Demonstration to have every hospital give practical illustrations of each of the papers presented before the Section.

SOCIETY NOTES

The President, Dr. William Francis Campbell, has appointed Dr. Luzerne Coville, of Ithaca, Delegate to the meeting of the Association of American Medical Colleges which will be held in Chicago, February 25, 1914, and Dr. Andrew MacFarlane, of Albany, to represent the Medical Society of the State of New York at the meeting of the National Legislative Committee to be held in Chicago, February 23 and 24, 1914.

Dr. John A. Witherspoon, President of the American Medical Association, will deliver an address before the members of the Medical Society of the County of Kings in Brooklyn on February 17th, and will also speak in Buffalo on February 21st.

Dr. Herman P. Biggs, New York City, has been appointed Commissioner of Health of the State of New York, and has designated as his first deputy, Dr. Linsly R. Williams, New York City; as Chairman of the Bureau of Hygiene, Dr. Henry L. K. Shaw, Albany, and Chairman of the Laboratory Research Bureau, Dr. Augustus B. Wadsworth, New York City.

Dr. Sigismund S. Goldwater has been appointed by Mayor Mitchel, President of the Board of Health of New York City.

COUNTY SOCIETIES

BRONX COUNTY MEDICAL SOCIETY.

A meeting of the physicians, members of the Medical Society of the State of New York, residing in the Bronx, was held at Hunts Point Palace, 163d Street and Southern Boulevard, on January 9, 1914.

Dr. William Francis Campbell, President of the Medical Society of the State of New York, in the chair. Dr. Wisner R. Townsend, Secretary.

The meeting was called to order at 9.15 P. M.

The Chairman said there were only two requisites for those who desired to vote this evening: First, that the voter was a member of the State Society, and second, that he intended to join the Bronx County Medical Society.

The minutes of the last meeting were read and approved. (See January issue of the New York State Journal of Medicine.)

The Chairman called for the report of the Committee on Organization and Incorporation. In the absence of the Chairman, Dr. W. E. Howley, the report was presented by Dr. I. M. Heller. It showed that the Committee had met on December 19th, at the office of the state attorney, Mr. James Taylor Lewis, and that a charter had been prepared. Mr. Lewis explained the charter and the principal points in it. Moved, seconded and carried that the report of the Committee be received.

The Chairman then called for a report from the Committee on Constitution and By-Laws. In the absence of the Chairman, Dr. F. W. Loughran, the report was presented by Dr. M. Darvas. Moved, seconded and carried that the report of the Committee be received.

The Secretary of the State Society then read the proposed By-laws section by section, and they were amended, sections stricken out and additions made, adopted section by section and then adopted as a whole.

The Chairman then called on the Committee of Nominations for its report. This was presented by the Chairman, Dr. William A. Boyd, and was as follows:

For President, Nathan B. Van Etten; First Vice-President, Francis L. Donlon; Second Vice-President, William A. Boyd; Secretary, Herman T. Radin; Financial Secretary, Henry A. Dodin; Treasurer, Edward F. Hurd; Board of Censors, S. Carrington Minor, Frederic W. Loughran, Gustave H. E. Starke, Edward C. Podvin, William E. Howley, Joseph J. Smith, Arthur C. Palmateer; Delegates, Henry Roth, Charles Graef, Milton R. Bookman, W. M. Dunning; Alternates, John E. Virden, Clarence H. Smith, Ernst A. W. Wilkens, J. M. Heller.

Moved and seconded that the report be received. Dr. Rosenbluth moved as an amendment that the report be tabled. This was not entertained; the Chair stating that independent nominations could be made later. The report was then received.

The Chair called for other nominations. Dr. Edward L. Corbett presented the following nominations:

For President, Thomas Hayes Curtin; First Vice-

President, Thomas J. Dunn; Second Vice-President, William A. Boyd; Secretary, Herman Radin; Financial Secretary, Henry A. Dodin; Treasurer, William A. Goodall; Censors, S. Carrington Minor, J. Lewis Amster, Max Zigler, A. E. Munson, Simon Jacobs, J. J. Smith, E. C. Podvin; Delegates, Henry Roth, W. G. Eynon, W. M. Dunning, Cornelius Egan; Alternates, E. A. Wilkins, J. A. Virden, William L. Rost, Edward Broquet.

Dr. Max Nisselson nominated for Censors, Drs. A. Goldman M. Rosenbluth and A. Rostenberg. After the Chairman had asked if there were any further nominations, none appearing, Dr. E. J. Connell moved that the nominations be closed. It was seconded and carried.

The Chair announced as tellers Drs. Flavius Packer and Paul Dolan, and stated that the State Secretary would assist.

There being only one nomination for Second Vice-President, for Secretary and for Financial Secretary, it was moved, seconded and carried that the By-laws be suspended and that the Secretary of the meeting cast one unanimous vote for these officers, the Secretary cast a ballot for Dr. W. A. Boyd for Second Vice-President, for Dr. Herman T. Radin for Secretary and for Dr. Henry A. Dodin for Financial Secretary. The President, upon receipt of the vote declared Dr. W. A. Boyd elected Second Vice-President; Dr. H. T. Radin, Secretary, and Dr. H. A. Dodin, Financial Secretary for the ensuing year.

The tellers reported the following: For President, N. B. Van Etten, 74 votes; T. H. Curtin, 29 votes. Dr. Van Etten was declared elected.

For First Vice-President, F. L. Donlon, 63 votes; T. J. Dunn, 40 votes. Dr. Donlon was declared elected.

For Treasurer, E. F. Hurd, 80 votes; W. A. Goodall, 23 votes. Dr. Hurd was declared elected.

For Board of Censors, S. C. Minor, 88 votes; J. J. Smith, 88; E. C. Podvin, 86; G. E. Starke, 70; W. E. Howley, 59; A. C. Palmateer, 57; J. L. Amster, 47; M. Zigler, 47; F. W. Loughran, 47; A. E. Munson, 42; S. M. Jacobs, 40; A. Rostenberg, 12; M. Rosenbluth, 9; A. Goldman, 9; F. L. Donlon, 1. The President declared Drs. Minor, Smith, Podvin, Starke, Howley, and Palmateer elected.

For Members of the House of Delegates, Henry Roth, 98 votes; W. M. Dunning, 78; M. R. Bookman, 60; W. G. Eynon, 59; C. Graef, 53; C. J. Egan, 47; W. E. Howley, 1. The President declared Drs. Roth, Dunning, Bookman and Eynon elected.

For Alternates to the House of Delegates, J. E. Virden, 97 votes; E. A. Wilkens, 83; C. H. Smith, 61; I. M. Heller, 56; E. A. Broquet, 54; W. L. Rost, 45. The President declared Drs. Virden, Wilkens, Smith, and Heller elected.

The following were present: E. W. Abramowitz, W. B. Allen, C. L. Ambos, A. T. Baker, A. L. Barrett, F. A. Becker, H. W. Bell, I. I. Bernstein, L. P. Bernstein, M. Bernstein, J. F. Bicak, B. S. Bickelhaupt, J. Bondy, W. A. Boyd, E. F. Brennan, E. Broquet, J. J. Burns, F. Cohen, H. Cohen, J. B. Cohen, S. Cohen, W. Cohn, E. J. Connell, E. L. Corbett, N. A. Craw, E. R. Crowe, G. A. Crump, T. H. Curtin, M. Darvas, J. J. Decker, L. M. Dithridge, H. A. Dodin, P. Dolan, F. L. Donlon, T. J. Dunn, W. M. Dunning, M. M. Eckert, C. J. Egan, J. R. Fabricius, G. B. Ferguson, A. Fine, M. B. Freid, W. S. Gardner, F. Garten, A. Goldman, L. F. W. Haas, F. C. Hargrave, I. M. Heller, W. E. Hendry, J. Henschel, W. E. Howley, E. F. Hurd, S. M. Jacobs, B. W. Junge, W. H. Kahrs, W. L. Kantor, M. N. Karash, L. M. Kommel, M. Krakowski, M. Kutscher, A. Lightstone, S. J. Littenberg, J. London, N. Lukin, W. McChristie, I. Miller, S. C. Minor, E. Monaghan, C. Montgomery, A. E. Munson, M. Nisselson, F. Packer, A. C. Palmateer, E. C. Podvin, A. Polon, J. Popper, V. E. Quin, A. Raabe, H. T. Radin, W. A. Randel, P. Riche, J. Riegelman, M. C. Rose, M. D. Rose, M. Rosenbluth, W. L. Rost, A. Rostenberg, Henry Roth, Herman Roth, N. Roth, J. L. Rubinstein, B. L. Schaeffer, Max Scheer, O. J. Scheina, S. Schulhofer, M. J. Silverman, C. H. Smith, J. J. Smith, E. E. Specht, G. H. E. Starke, J. B. Talmage, N. B. Van Etten, J. E. Virden, H. Wahn, W. D. Weil, W. Weinberger, J. Weiss, E. A. W. Wilkens, J. J. Williams, Jr.; H. Wollner, M. Zigler, F. H. Zitz.

The meeting was declared adjourned at 2.30 A. M., January 10, 1914.

MEDICAL SOCIETY OF THE COUNTY OF FRANKLIN.

ANNUAL MEETING, MALONE, TUESDAY, DECEMBER 9, 1913.

The sixty-seventh annual meeting was held in the Court House, Tuesday, December 9, 1913. President Dr. F. F. Finney in the chair.

There were eighteen members present. The following officers were elected for the ensuing year: President, W. H. Harwood, Malone; Vice-President, J. Woods Price, Saranac Lake; Secretary and Treasurer, G. M. Abbott, Saranac Lake; Delegate to State Medical Society, C. C. Trembly, Saranac Lake; Alternate, F. F. Finney, Burke; Delegate to Fourth District Branch, A. H. Garvin, Ray Brook; Alternate, W. H. Harwood, Malone.

The reports of the Secretary and Treasurer were read and accepted as read.

By vote of the Society, Dr. G. H. Oliver was appointed a member of the County Milk Commission to fill the vacancy caused by the death of Dr. Henry Furniss.

The amendment to Section I, Chapter IX, of the By-laws, offered at the last annual meeting, was, by vote of the Society, adopted.

The Secretary read a communication from the Secretary of the Medical Society of the County of New York, calling attention to resolutions passed by the Cortland County Medical Society favoring the publication of the Medical Directory of New York, New Jersey and Connecticut biennially instead of annually. The Medical Society of the County of New York was very much opposed to this change and urged this Society to pass resolutions favoring the continuance of the publication as heretofore. No action was taken.

The Cortland County Society also favored the establishment of a State Department for the prosecution of illegal practitioners in all the various counties in the State. The Medical Society of the County of New York passed resolutions opposing such a movement and urging all County Societies to do the same. After some discussion the following resolution was unanimously passed:

"Resolved, That this Society instruct its delegate to the State Medical Society to vote and use his influence for the establishment of a State Department for the prosecution of illegal practitioners in the various counties in the State."

The Physicians' Fee Bill was slightly revised as follows:

Ordinary call within one mile, $1.50 to $3.
Night call, 8 P. M. to 8 A. M., $2 to $6.
Same to take effect January 1, 1914.
Meeting adjourned for dinner.

AFTERNOON SESSION, 3 P. M.

The following papers were read.

"Blood Pressure in General Practice," F. F. Finney, M.D., Burke.

"Pneumonia," W. H. Harwood, M.D., Malone.

"Asepsis," P. F. Dolphin, M.D., Malone.

Discussed by Drs. Van Dyke and Harrigan.

"Exophthalmic Goitre," S. W. Outwater, M.D., Saranac Lake.

Discussed by Drs. Grant and Oliver.

MEDICAL SOCIETY OF THE COUNTY OF GENESEE.

ANNUAL MEETING, HELD AT BATAVIA, ON WEDNESDAY, JANUARY 7, 1914.

A resolution was passed endorsing in all respects the action taken by the Medical Society of the County of Cortland in regard to the prosecution of illegal practitioners of medicine through the New York State Medical Society and as to the biennial publication by the State Society of the Medical Directory of New York, New Jersey and Connecticut.

A resolution was also passed that the publishers of the Directory be asked to give an accounting of the expense of publishing the Directory and also the profits from its publication and distribution.

Dr. S. E. Page was appointed as a corresponding member of the State Reservation Commission at Saratoga Springs.

Dr. W. D. Johnson presented a case of Varicose Veins of the Elbow and Forearm Due to an Injury of the Joint in Childhood, and which Caused a Neuritis of Ulnar Nerve.

Dr. H. M. Spofford presented a paper, "Anesthetic Shock, and Can We Lessen the Condition?"

SCHOHARIE COUNTY MEDICAL SOCIETY.

ANNUAL MEETING, COBLESKILL, TUESDAY, DECEMBER 9, 1913.

The following officers were elected for the ensuing year: President, C. L. Olendorf, Cobleskill; Vice-President, A. R. Warner, Gallupville; Secretary, H. LeR. Odell, Sharon Springs; Treasurer, LeR. Becker, Cobleskill; Delegate to State Society, H. J. Wright, Schoharie; Alternate to State Society, E. S. Simpkins, Middleburgh; Delegate to Third District Branch, Christopher S. Best, Middleburgh; Alternate to Third District Branch, Willard T. Rivenburgh, Middleburgh.

The following resolution was unanimously adopted: "That the Schoharie County Medical Society endorses the high standard of the State Board of Health and believes that the health of the public is a matter of vital concern to every citizen regardless of party. *Resolved*, That we heartily approve of the splendid work of our Health Commissioner and urge upon Governor Glynn the reappointment of Dr. Eugene H. Porter to his present high office."

SCIENTIFIC SESSION.

"Accessory Nasal Sinuses," Joseph I. Dowling, M.D., Albany.

"Endometritis, Its Surgical and Medical Boundary Lines," A. B. Van Loon, M.D., Albany.

"Relation of Privileged Communications and the Physician's Duty to the Public," Andrew MacFarlane, M.D., Albany.

"Venesection and Cerebral Hæmorrhage," Andrew MacFarlane, M.D., Albany.

"Electro Therapeutics," W. G. Lewi, M.D., Albany.

"Report of a Case," C. S. Best, M.D., Middleburgh.

OTSEGO COUNTY MEDICAL SOCIETY.

ANNUAL MEETING, ONEONTA, TUESDAY, DECEMBER 9, 1913.

The annual meeting was held at the Court House. The minutes of the last meeting were read. The following officers were elected for the ensuing year: President, Dr. L. T. Genung, Worcester; Vice-President, F. J. Atwell, Cooperstown; Secretary, Dr. M. Latcher, Oneonta; Treasurer, Dr. F. L. Winsor, Laurens.

SCIENTIFIC SESSION.

"Acute Lobar Pneumonia," W. S. Cooke, M.D., Otego.

"Treatment of Acute Lobar Pneumonia," G. H. Brinkman, M.D., Oneonta.

An exhaustive discussion led by Julian C. Smith, M.D.

"A Talk on Medical Jurisprudence with Reference to Cases of Tort and Malpractice," Judge A. L. Kellogg.

A lunch was served at the Windsor Hotel to the members and guests.

MEDICAL SOCIETY OF THE COUNTY OF TIOGA.

ANNUAL MEETING, OWEGO, TUESDAY, DECEMBER 2, 1913.

The President, Dr. W. A. Moulton, was in the chair.

Nine members present. The minutes of the last meeting were read. The following officers were elected for the ensuing year: President, C. W. Chidester, Newark Valley; Vice-President, W. L. Ayer, Owego; Secretary, C. J. V. Redding, Owego; Treasurer, J. M. Barrett, Owego; Delegate to State Society, C. L. Stiles, Owego; Alternate, W. A. Moulton, Candor; Delegate to Sixth District Branch, H. L. Knapp, Newark Valley; Alternate, G. M. Cady, Owego.

Dr. W. A. Moulton read an article in regard to the Red Cross Service in Cases of Emergency in the Towns of the Society, and appointed the following Committee: Drs. Redding, Chidester, Leonard, Cady and Washburn. The Secretary was instructed to communicate with the Chairman of the American Red Cross and notify them of the action of the Society.

Dr. G. M. Cady reported a very interesting case of exophthalmic goitre which had been entirely cured by injection of hot water into the thyroid gland.

Dr. Capron reported a case of general paresis.

Dr. C. J. V. Redding reported a severe case of chicken-pox in an adult.

Dr. W. L. Ayer spoke at length of chicken-pox in general, bringing out some excellent points.

Dr. W. A. Moulton reported a case of rabies in his practice, and Dr. G. M. Cady spoke of the same case.

Dr. J. M. Barrett spoke of a case of scarlet fever in his practice which had recurred after a few days.

Dr. Capron and Dr. Cady gave some very interesting talks in regard to a demonstration and lecture which had been given at Elmira, by Dr. Howard Kelly, of Baltimore.

MEDICAL SOCIETY OF THE COUNTY OF WYOMING.

ANNUAL MEETING, CASTILE, JANUARY 13, 1914.

SCIENTIFIC SESSION.

"Recognition of Nervousness and its Causes. A Study in Diagnosis," Edward B. Angell, M.D., Rochester.

"The Diagnosis of a Few Abdominal Conditions from the Standpoint of the Surgeon," George T. Moseley, M.D., Buffalo.

"Rheumatism, Some Points in Diagnosis," Virgil C. Kinney, M.D., Wellsville.

"Medical Inspection of Schools," Franklin W. Barrows, M.D., Buffalo.

After the meeting the members present were entertained at dinner by Dr. Green, at the Sanitarium.

MADISON COUNTY MEDICAL SOCIETY.

ANNUAL MEETING AT ONEIDA, OCTOBER 14, 1913.

The following officers were elected for the ensuing year: President, William T. Tanner, Oneida; Vice-President, A. K. Thomas, West Eaton; Secretary, George W. Miles, Oneida; Treasurer, C. H. Perry, Oneida. George W. Miles was elected delegate to the State Society.

"A Study of the Cleft Palate," Herbert O. Brust, M.D., Crouse-Irving Hospital, Syracuse.

"What is Life?" Address of the retiring President, S. J. Wilson, M.D., Oneida.

A general discussion followed by Otto Pfaff, M.D.; G. W. Miles, M.D.; E. H. Carpenter, M.D., and A. K. Thomas, M.D.

It was decided to hold the May meeting at Canastota, the program to be furnished by the members residing in that place.

LEGISLATIVE NOTES.

TO THE MEMBERS.

Your attention is called to bill number 35, "regulating the sale of habit-forming drugs" and referred to the Committee on Public Health of the Senate. It is urged upon every member to read this bill and send a protest to his representatives in the Senate and Assembly against its passage.

Attention is also called to bills number 3, for the "supervision of animal experimentation within the State" and number 182, "to create a commission to investigate and report upon the condition of the practice of animal and human experimentation." Both of these bills have been referred to the Judiciary Committee of the Senate.

Every member is requested to bring what influence he can to bear in opposing these bills, and to notify the undersigned what has been done.

LEWIS K. NEFF,
Chairman Committee on Legislation.

STANDING COMMITTEES OF THE SENATE FOR 1914.

On Judiciary.—J. F. Murtaugh, Elmira; W. B. Carswell, 121 St. Marks Avenue, Brooklyn; J. D. McClelland, 43 Barrow Street, New York City; H. W. Pollock, 541 West 113th Street, New York City; A. J. Griffin, 891 Cauldwell Avenue, New York City; H. H. Torborg, 1043 Liberty Avenue, Brooklyn; G. A. Blauvelt, Monsey; J. A. Foley, 261 Broadway, New York City; H. P. Velte, 265 Hewes Street, Brooklyn; H. P. Coats, Saranac Lake; R. W. Thomas, Hamilton; J. H. Walters, 935 University Bldg., Syracuse; T. H. Bussey, Perry; E. R. Brown, Watertown.

On Codes.—A. J. Griffin, 891 Cauldwell Avenue, New York City; H. H. Torborg, 1043 Liberty Avenue, Brooklyn; W. B. Carswell, 121 St. Marks Avenue, Brooklyn; W. R. Herrick, 115 Broadway, New York City; G. H. Wende, 2256 Bailey Avenue, Buffalo; H. P. Velte, 265 Hewes Street, Brooklyn; H. P. Coats, Saranac Lake; G. F. Thompson, Middleport; G. W. Simpson, New York City.

On Public Health.—J. Seeley, Woodhull; W. D. Peckham, 333½ Genesee Street, Utica; A. J. Griffin, 891 Cauldwell Avenue, New York City; J. Davidson, 638 East 227th Street, New York City; J. W. McKnight, Castleton; A. J. Palmer, Milton.

On Rules.—J. T. Murtaugh, Elmira; T. H. Cullen, 135 William Street, Brooklyn; S. J. Ramsperger, 232 Emslie Street, Buffalo; C. D. Sullivan, 51 Chambers, New York City; E. R. Brown, Watertown.

STANDING COMMITTEES OF THE ASSEMBLY FOR 1914.

On Judiciary.—C. W. Phillips, Monroe County; J. L. Sullivan, Chautauqua County; H. Conkling, New York County; J. Knight, Wyoming County; C. O. Pratt, Washington County; F. W. Cristman, Herkimer County; G. L. Bockes, Otsego County; C. J. Fuess, Oneida County; M. Goldberg, New York County; P. J. McGrath, New York County; C. D. Van Name, Richmond County; A. F. Murray, New York County; S. Sufrin, New York County.

On Affairs of Cities.—A. W. Hoff, Kings County; J. G. Malone, Albany County; C. T. Horton, Erie County; C. W. Phillips, Monroe County; F. R. Stoddard, Jr., New York County; J. Buecheler, Onondaga County; C. C. Lockwood, Kings County; G. Blakely, Westchester County; A. Ellenbogen, New York County; M. G. McCue, New York County; D. F. Farrell, Kings County; R. F. Hearn, Erie County; W. Thayer, Erie County.

On Rules.—T. C. Sweet, Oswego County; H. J. Hinman, Albany County; F. B. Thorn, Erie County; H. E. H. Brereton, Warren County; A. E. Smith, New York County; T. B. Caughlan, New York County, M. Schaap, New York County.

On Public Health.—G. T. Seelye, Saratoga County; J. G. Jones, Jefferson County; N. F. Webb, Cortland County; H. L. Grant, Lewis County; A. W. Fairbank, Clinton County; G. H. Chase, Greene County; S. R. Green, Kings County; J. W. Preswick, Tompkins County; C. J. Fuess, Oneida County; J. C. Campbell, New York County; A. P. Squire, Schenectady County; P. J. McGarry, Queens County; H. C. Karpen, Kings County.

BILLS INTRODUCED INTO THE LEGISLATURE.

STATE OF NEW YORK.

No. 35.—Int. 35.

IN SENATE.

January 19, 1914.

Introduced by Mr. Boylan—read twice and ordered printed, and when printed to be committed to the Committee on Public Health.

AN ACT.

To amend the public health law, in relation to certain habit-forming drugs.

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

Section 1. An act in relation to the public health, constituting chapter forty-five of the consolidated laws, is hereby amended by adding a new article, to be known as article eighteen, entitled "habit-forming drugs."

a. No pharmacist, druggist, apothecary or other person shall fill prescriptions containing opium, morphia, voca leaves, cocaine, alpha and beta eucaine, chloral canabia, their salts, derivatives or preparations, except upon the written order of a physician as hereinafter provided.

b. The state commissioner of public health shall prepare and furnish to all local health boards or officers official prescription blanks, serially numbered in duplicate, bound in book form with carbon or transfer paper between the duplicate pages, upon which must be written the date, the name of the person to whom the prescription is issued, the prescription in full and the name of the person issuing the prescription; each blank must have printed thereon the seal of the State of New York. It shall be the duty of the local officer or board

to furnish to all local physicians a sufficient quantity of the aforesaid official prescription blanks, upon which must be written all prescriptions containing any of the drugs enumerated in subdivision "a" of this section; the official prescription blanks in book form shall be sent to each duly licensed physician in sufficient quantities upon his or her written demand and a record kept of the amount of such prescription blanks sent to each physician and their serial number.

It shall be unlawful for any person doing business in which drugs, medicines or poisons are retailed, or physicians' prescriptions are compounded or dispensed, to sell at retail any of the drugs or preparations of any of them mentioned in subdivision "a" of this section without first receiving from the purchaser an official prescription blank, properly filled out and signed by a duly licensed physician. Such prescription blank so received shall be filled out at the time of receiving the same for the full quantity prescribed and no prescription so received shall be filled more than ten days after the date upon which said prescription be dated. Such prescription (from which no copy shall be taken by any person) shall be retained by the person who dispenses the same and shall be filled but once; such official prescription blank shall be kept in a separate file or book and an entry make in a book kept for that purpose, stating the date of same, the name and address of the purchaser and the name of the person making such sale. Any person who sells, furnishes or disposes of any of the drugs mentioned in subdivision "a" of this section upon a written official prescription by a duly registered physician shall, at the time of dispensing the same, give to the person to whom any of the drugs enumerated in subdivision "a" of this section is sold or furnished a certificate stating the name and address of the person selling or furnishing the same, the name and address of the physician upon whose prescription such drug or drugs is sold or furnished, the date of sale, and the amount and identity of the drug sold; it shall be the duty of the commissioner of health to furnish to any person or corporation doing business in which drugs, medicines or poisons are retailed or physicians' prescriptions are compounded or dispensed, official certificates, serially numbered, bound in book form, with carbon or transfer paper between the duplicate pages, to be issued by such person or corporation to the person to whom any of the drugs enumerated in subdivision "a" of this section are sold or furnished.

c. The state commissioner of health shall prepare and furnish to all local boards of health or officers official order blanks, serially numbered in duplicate, bound in book form, with carbon or transfer paper between the duplicate pages. The said official order shall be furnished by the local health board or officer to any local, duly licensed dentist, pharmacist, druggist or veterinarian, upon which must be written all orders for the purchase of any of the drugs enumerated in subdivision "a" of this section for the use of such dentist, druggist or veterinarian. Such order shall be of a different color than the official prescription blank provided in subdivision "b" of this section. It shall be unlawful for any person to sell, furnish or dispense to any physician, druggist, veterinarian or dentist any of the drugs enumerated in subdivision "a" of this section without first receiving from such physician, druggist, veterinarian or dentist an official order blank as provided in this subdivision, which official order shall be retained by the person or corporation who sells, furnishes or dispenses any of the drugs enumerated in subdivision "a" of this section, and such official order shall be kept in a separate file or book and an entry made or caused to be made in a book kept for that purpose, stating the date of sale, the name and address of the purchaser and the name of the person making such sale.

d. All physicians, druggists, veterinarians and dentists shall keep on record the name and address of each person to whom such physician, dentist or veterinarian administers or disposes in any way whatsoever any of the drugs enumerated in subdivision "a" of this section, and the quantity so administered, disposed of or given away. Such record shall be preserved for four years and shall always be open for inspection by the proper authorities. Any violation of this subdivision is hereby declared to be a misdemeanor.

e. Whenever a physician has prescribed the use of, or administers, or gives to be taken, one or any of the drugs enumerated in subdivision "a" of this section, daily, for the period of three weeks, or issues a prescription for a quantity of any such drugs, or gives to be taken a quantity of any drug, sufficient for a period of three weeks, such physician shall not continue to prescribe or give such drug to any person without first consulting with a physician designated by the board of health, or with another physician, and obtaining the consent of either to the further use of any such drug, and also making a report in writing to the health officer of the city, town or village, in which such physician resides, on a form to be prepared and furnished by the state commissioner of health and furnished to all local boards of health. Such report shall contain the name, age, sex, color, occupation, place where employed and address of every person so treated.

f. It is unlawful for any person to sell at retail or to furnish to any person other than a duly licensed physician, dentist or veterinarian, an instrument commonly known as a hypodermic syringe or an instrument commonly known as a hypodermic needle, without first receiving from the purchaser an official perscription blank, as provided for in subdivision "b" of this section. Every person who disposes of or sells at retail, or furnishes or gives away to any person, either of the above instruments, upon the written order of a duly licensed physician or veterinarian, shall, before delivering the same, enter in a book kept for that purpose the date of the sale, the name and address of the purchaser, and a description of the instrument sold, disposed of, furnished or given away. Any person or persons who sell, dispose of or give away an instrument commonly known as a hypodermic syringe, or an instrument commonly known as a hypodermic needle, except in the manner prescribed in this section, shall be guilty of a misdemeanor.

g. It shall be the duty of the public officers having in charge the control of county or city hospitals to provide separate quarters for the treatment of all persons addicted to the use of habit-forming drugs. It shall be the duty of all local boards of health to furnish without charge to any person addicted to the use of any habit-forming drug a prescription as provided for in section "b" of this act for such a sufficient quantity of any such drug as is necessary in the opinion of a physician of any such board of health. The commissioner of health may prescribe such regulations under which such drugs are to be prescribed and dispensed by physicians of the local board of health.

h. Whenever a complaint shall be made to any magistrate that any person is addicted to the use of any habit-forming drug, such magistrate, after due notice and hearing, if satisfied that the complaint is founded and that the person is addicted to the use of a habit-forming drug, may commit such person to a county or city hospital or to any other hospital wherein separate habit-forming drugs is maintained. Such persons shall be deemed to be committed until discharged. In making such commitment the magistrate shall make such provision as he may deem proper. Whenever the chief medical officer of such institution shall certify to any magistrate that any person so committed has been sufficiently treated or give any other reason which is deemed adequate and sufficient, he may discharge the person so committed. Every person committed under the provisions of this section shall observe all the rules and regulations of such hospital or institution. Any person so committed who refuses or neglects to obey the rules or regulations of the institution may by the direction of the chief medical officer of the institution be placed apart from the other patients and restrained from leaving the institution.

Any such person who willfully violates the rules and regulations of the institution or repeatedly conducts himself in a disorderly manner may be taken before a magistrate by the order of the chief medical officer of the institution. The chief medical officer may enter a complaint against such person for disorderly conduct and the magistrate, after a hearing and upon due evidence of such disorderly conduct, may commit such person for a period of not to exceed six months to any institution to which persons convicted of disorderly conduct or vagrancy may be committed, and such institution shall keep such persons separate and apart from the other inmates, provided that nothing in this section shall be construed to prohibit any person committed to any institution under its provisions from appealing to any court having jurisdiction, for a review of the evidence in which this commitment was made.

i. Any license heretofore issued to any physician, dentist, veterinarian, pharmacist or registered nurse, may be revoked by the proper officers or boards having power to issue license, to any of the foregoing, upon proof that the licensee is addicted to the use of any habit-forming drug or drugs, after giving such licensee reasonable notice and opportunity to be heard.

j. Whenever any physician, dentist, veterinarian, pharmacist or registered nurse is convicted in a court having jurisdiction of any of the violations of this article, any officer or board having power to issue licenses to any such physician, veterinarian, pharmacist or registered nurse may, after giving such licensee reasonable notice and opportunity to be heard, revoke the same.

k. Any violation of any of the provisions of this article shall be deemed a misdemeanor, except where otherwise provided by any special law or statute.

Sec. 2. This act shall take effect October first, nineteen hundred and fourteen.

STATE OF NEW YORK.

No. 3.—Int. 3.

IN SENATE.

January 7, 1914.

Introduced by Mr. Boylan—read twice and ordered printed, and when printed to be committed to the Committee on the Judiciary.

AN ACT

To prevent cruelty by conferring upon the Board of Regents of the University of the State of New York the power of supervision of experiments on living animals.

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

Section 1. On the first day of June, nineteen hundred and fourteen, and annually thereafter, the Board of Regents of the University of the State of New York shall designate and appoint such number of persons to represent said board as shall, in the judgment and discretion of said board, be necessary for the proper supervision of animal experimentation within this state. Any corporation formed under the laws of this state, one of the objects of which is to prevent cruelty in animal experimentation, may certify to the board of regents a list of names of persons whom such corporation deems suitable for appointment as such representatives, and the board of regents shall make all designations hereunder from the list of names so certified by such corporations.

No person so designated and appointed by said board as a representative thereof shall receive any compensation from the state for his or her services. The said board of regents shall furnish to each person so designated and appointed to represent said board a certificate under the seal of said board, and which said certificate shall contain the name and address of the person so appointed, the statement that such person is a representative of said board for the purpose of supervising experiments upon living animals performed within the state of New York, the date of such appointment and duration thereof.

Sec. 2. Every place where experiments upon living animals are conducted shall at all times be open to and subject to entry and inspection by any represetnative of said board of regents designated and appointed in accordance with the provisions of section one of this act.

Sec. 3. Any person who excludes or assists either directly or indirectly in excluding any representative of the said board of regents from a place which he or she is empowered by this act to enter, or who prevents or attempts to prevent such representative from exercising the powers of inspection conferred on him or her by this act, or who being in such place, refuses to disclose his true name and residence to any such representative, is guilty of a misdemeanor, and shall be punished by imprisonment for not less than sixty days or more than one year, or by a fine of not less than one hundred dollars nor more than five hundred dollars, or by both such fine and imprisonment.

Sec. 4. This act shall take effect on the first day of June, nineteen hundred and fourteen.

IN SENATE.

No. 182.—Int. 182.

January 27, 1914.

Introduced by Mr. Herrick—read twice and ordered printed, and when printed to be committed to the Committee on the Judiciary.

AN ACT

To create a commission to investigate and report upon the condition of the practice of human and animal experimentation in the State of New York, to show what regulations are necessary to prevent cruelty to human beings or animals; and likewise to prevent any abuse of or interference with the private rights of human beings in our charitable institutions and elsewhere by experimentation upon them without their authority and consent.

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

Section 1. The governor is hereby empowered and directed to appoint a commission which shall consist of seven members, two of whom shall be physicians or persons experienced in the practice of vivisection and residing within this state, two of whom shall be active members of some organization within this state having for its purposes the prevention of cruelty but who shall not be physicians and the remaining three members of which commission shall be lawyers residing within this state.

Sec. 2. Such commission shall fully investigate and report upon: (a) The present condition and extent of the practice of experimentation upon human beings without their consent; especially upon children and other patients in hospitals, public institutions or elsewhere within this state by inoculation or by any other form of treatment or tests not undertaken for the direct benefit of the individuals experimented upon and not having relation to their individual necessities. It shall also report what further laws are necessary to protect such persons from any injury or any interference with their personal rights by such practice or by the abuse thereof.

(b) It shall investigate and report upon the condition and extent of the practice of experimentation upon living animals in this state and upon the amount of avoidable cruelty or suffering involved therein; and shall also make a full inquiry into the condition of the law of this state for the protection, regulation and license of scientific investigation or research of this character by competent experts. It shall also consider the condition and effectiveness of the law for the prevention of abuse in such practice. It shall inquire what further legislation may be needed to prevent unnecessary suffering of animals through such practice or through its abuse and, also, properly to license and limit legitimate scientific experimentation to experts of approved competency.

Sec. 3. For the purposes of this investigation the said commission is hereby authorized and empowered to subpœna witnesses; to send for persons or papers, to administer oaths and to examine witnesses and papers respecting all matters pertaining to this subject. It shall be authorized to employ necessary clerical or other assistants. This commission shall serve without compensation, and shall make a full and final report to the governor, including such recommendations for legislation as in its judgment seem proper, within one year after its appointment.

Sec. 4. This act shall take effect immediately.

JANUARY 7 TO 23, 1914.

IN SENATE.

Amending the Penal Law, by adding new section 1747a, prohibiting the sale of bichloride of mercury, except upon the prescription of a duly registered physician. By Mr. Blauvelt. To Codes Committee. Printed No. 5. Int. 5.

Adding new article 18, entitled "Habit Forming Drugs," to the Public Health Law, regulating the sale of such drugs. By Mr. Boylan. To Public Health Committee. Printed No. 35. Int. 35.

Amending sections 336, 337 and 338, Public Health Law, by prohibiting any cold storage warehouseman to have in his possession any food unless it is apparently pure, and making it unlawful for any person or corporation to offer for storage any impure articles of food, and extending the powers of the commissioner of health relative to cold storage warehouses. (Same as A. 37.) By Mr. Blauvelt. To Public Health Committee. Printed No. 55. Int. 55.

Amending section 340, Rochester city charter, by providing that the power conferred on the public health council to adopt the Sanitary Code must not be exercised by the Commissioner of Public Health, but is vested in the common council. (Same as A. 101.) By Mr. Argetsinger. To Cities Committee. Printed No. 114. Int. 114.

Amending sections 2-b and 38, Public Health Law, by providing that no provision of the Sanitary Code shall relate to cities of the first class. At present New York City is excluded from operation of the Sanitary Code. (Same as A. 102.) By Mr. Argetsinger. To Public Health Committee. Printed No. 115. Int. 115.

Appropriating $100,000 to the State Institute for the State Institute for the Study of Malignant Diseases at Buffalo, for procuring radium for experimental treatment of cancer cases. By Mr. Malone. To Finance Committee. Printed No. 164. Int. 164.

Amending sections 250 to 258, inclusive, Public Health Law, relative to the practicing of nursing. A nurse, to take a regents examination, must submit satisfactory evidence that he or she is more than 21 years old, a resident of the state, of good moral character and holds a diploma from a nurses' training school in connection with a hospital or sanitarium giving at least a two years' course and registered by the regents as maintaining proper standards, and who has preliminary education required by the rules of the regents. By Mr. Seeley. To Public Health Committee. Printed No. 207. Int. 207.

IN ASSEMBLY.

Amending sections 336, 337 and 338, Public Health Law, by prohibiting any cold storage warehouseman to have in his possession any food unless it is apparently pure, and making it unlawful for any person or corporation to offer for storage any impure articles of food, and extending the powers of the commissioner of health relative to cold storage warehouses. (Same as S. 55.) By Mr. Adler. To Public Health Committee. Printed No. 36. Int. 37.

Authorizing William James Morton, of New York City, to continue the practice of medicine notwithstanding his conviction in March, 1913, upon indictments charging violations of postal service regulations. By Mr. Stoddard. To Judiciary Committee. Printed No. 105. Int. 106.

Amending section 2-b and 38, Public Health Law, by providing that no provision of the Sanitary Code shall relate to cities of the first class. At present New York City only is excluded from the operation of the Sanitary Code. (Same as S. 115.) By Mr. Phillips. To Public Health Committee. Printed No. 101. Int. 101.

To amend the Public Health Law, in relation to working hours and sleeping apartments in grocery or provision stores. By Mr. Kerrigan. To Public Health Committee. Printed No. 123. Int. 124.

Adding new section 109, State Charities Law, and repealing sections 109 and 114 relative to the admission, detention and discharge of patients in the Craig Colony for Epileptics. (Same as S. 209.) By Mr. Magee. To Social Welfare Committee. Printed No. 266. Int. 266.

For preventing the manufacture or sale of adulterated or misbranded or poisonous or deleterious foods, drugs, medicines and liquor, and for regulating traffic therein and providing for appointment by the governor of a commissioner of foods and drugs and his assistants to define their powers and duties, and repealing all acts relating to the production, manufacture and sale of foods, drugs, medicine and liquors in conflict herewith, except Cold Storage Law. By Mr. Nelson. To Public Health Committee. Printed No. 279. Int. 279.

Amending subdivision 11, section 107, State Charities Law, by removing the restrictions that autopsies on patients at Craig Colony for Epileptics must be made not later than 12 hours after death and be confined exclusively to the brain. (Same as S. 208.) By Mr. Magee to Social Welfare Committee. Printed No. 268. Int. 268.

BOOKS RECEIVED.

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

DEFECTIVE OCULAR MOVEMENTS AND THEIR DIAGNOSIS. By E. &. M. LANDOLT (Paris), translated by ALFRED ROEMMELE, M.B., Ch.B., and ELMORE W. BREWERTON, F.R.C.S. London. Henry Frowde. Hodder & Stoughton, Warwick Sq., E. C. Oxford University Press, 35 West 32d Street, New York. 1913.

MANUAL OF SURGERY. By ALEXIS THOMPSON, Prof. of Surgery, University Edinburgh, Surg. Edinburgh Royal Infirmary, and ALEXANDER MILES, Surg. Edinburgh Royal Infirmary. Vol. 3. Operative Surgery. Second edition, with 255 illustrations. Edinburgh, Glasgow and London. Henry Frowde and Hodder & Stoughton., Oxford University Press, 35 West 32d Street, New York. 1913. Price, $3.50.

DISEASES OF THE HEART. By JAMES MACKENZIE, M.D., F.R.C.P., LL.D., Ab. & Ed. F. R. C. P. I. (Hon.) Physician, London Hospital, Cardiac Department; Consulting Physician, Victoria Hospital, Burnley. Third edition. London. Henry Frowde, Hodder & Stoughton, Warwick Square, E. C. Oxford University Press, 35 West 32d Street, New York. 1913.

CLINICAL DIAGNOSIS AND URINALYSIS. By JAMES R. ARNEILL, A.B., M.D., Professor Medicine and Clinical Medicine in University Colorado, Physician Denver County Hospital and St. Joseph, St. Luke's Hospitals, Denver. New (second) edition, revised and enlarged. 12mo., 270 pages, with 83 engravings and a colored plate. Cloth, $1.00 net. The Medical Epitome Series. Lea & Febiger, publishers, Philadelphia and New York. 1914.

PROSTITUTION IN EUROPE. By ABRAHAM FLEXNER. Introduction by JOHN D. ROCKEFELLER, JR., Chairman Bureau of Social Hygiene. New York: Century Co., 1914.

A TREATISE ON DISEASES OF THE SKIN. For the Use of Advanced Students and Practitioners. By HENRY W. STELWAGON, M.D., Ph.D., Professor Dermatology, Jefferson Medical College, Phila. Seventh edition, thoroughly revised. Octavo of 1,250 pages with 334 text illustrations and 33 full-page colored and half-tone plates. Philadelphia and London. W. B. Saunders Company, 1913. Cloth, $6.00 net; half morocco, $7.50 net.

STATE BOARD QUESTIONS AND ANSWERS. By R. MAX GOEPP, M.D., Professor Clinical Medicine, Philadelphia Polyclinic. Third edition, thoroughly revised. Octavo volume of 717 pages. Philadelphia and London: W. B. Saunders, 1913. Cloth, $4.00 net; half morocco, $5.50 net.

ANATOMY AND PHYSIOLOGY—A TEXT-BOOK FOR NURSES. By JOHN FORSYTH LITTLE, M.D., Assistant Demonstrator Anatomy, Jefferson Medical College, Philadelphia. 12mo., 483 pages, with 149 engravings and 4 plates. Cloth, $1.75 net. The Nurses' Text-Book Series. Lea & Febiger, publishers, Philadelphia and New York, 1914.

THE ELEMENTS OF BANDAGING AND THE TREATMENT OF FRACTURES AND DISLOCATIONS. By WILLIAM RANKIN, M.A., M.B., Ch.B., Dispensary Surgeon, Western Infirmary, Glasgow, Extra Honorary Assistant Surgeon, R.H.S.C., Glasgow, with 68 original illustrations. London. Henry Frowde, Hodder & Stoughton, Warwick Square, E. C. Oxford University Press, 35 West 32d Street, New York. 1913.

PRACTICAL PRESCRIBING WITH CLINICAL NOTES. By ARTHUR H. PRICHARD, M.R.C.S., L.R.C.P., R.N. (Rtd.), Late House Physician, Brompton Hospital, and Resident Surgeon, R. N. Hospital, Gosport. London. Henry Frowde, Hodder & Stoughton, Warwick Square, E. C. Oxford University Press, 35 West 32d Street, New York. 1913.

OXFORD MEDICAL PUBLICATIONS. THE PRACTITIONER'S PRACTICAL PRESCRIBER AND EPITOME OF SYMPTOMATIC TREATMENT. By D. M. MACDONALD, M.D., Medical Officer of Health, Leven, Fife. London. Henry Frowde, Hodder & Stoughton, Warwick Square, E. C. Oxford University Press, 35 West 32d Street, New York. 1913.

DENTAL ELECTRO-THERAPEUTICS. By ERNEST STURRIDGE, L.D.S., Eng., D.D.S., Fellow of the Royal Society of Medicine, Member of the British Dental Association, London, Eng. 12mo, 318 pages, with 154 engravings. Cloth, $2.75 net. Lea & Febiger, Philadelphia and New York, 1914.

IN MEMORIAM.

Dr. Douglas Ayres, of Fort Plain, Montgomery County, N. Y., died of myocarditis November 20, 1913. He had been ill for the past two years, seriously since last March, but not taking his bed until the Monday preceding his death.

The medical history of the County of Montgomery for the past century is contemporaneous with the Ayres family that has had a representative in the active practice of medicine and surgery in the county since the year 1820. The subject of this sketch was a lineal descendant of Capt. John Ayres who settled at Ipswich, Mass., in 1648, and his great grandfather, Jabez Ayres, was a soldier of the Revolution, stationed in the winter of 1778 at Bound Brook, N. J. Illustrative of the medical education of the period, it is of passing interest to note that the father of Dr. Douglas Ayres was Alexander Ayres, born in Montgomery County in 1811, teaching school at the age of nineteen in Little Falls and East Creek; beginning the study of medicine in 1833 with an uncle, Daniel Ayres, who followed his profession at East Creek and Amsterdam; attending two courses of lectures at Fairfield, Herkimer County, and finally graduating at the Medical College of Castleton, Vt. It is recorded that the Medical Society of Montgomery licensed him to practice surgery. He finally settled at Fort Plain and continued an active career until his death in 1886. He was a member of county and state societies and one of the founders of the New York State Medical Association.

With these honorable antecedents, Dr. Douglas Ayres was born at East Creek, August 20, 1842. He was educated in a select school at Greene, Chenango County, where he remained two years. He was then for two years more at the old Fort Plain Seminary. For the next three years he studied at Fairfield Academy. He began the study of medicine with his father at Fort Plain, entered the Albany Medical College in 1861, and graduated there in 1865. He commenced the practice of medicine the same year in Fort Plain, but in 1870 formed a partnership with his father that continued until the death of the latter, at the age of 75, in 1886. Like his father, he was a member of the New York State Medical Association, from its inception and served as president in 1897-1898.

He one time stated that he had pretty nearly traveled over the United States while attending the annual meetings of the American Medical Association. He was equally dutiful in regard to state and county societies.

Dr. Ayres was senior warden of the local Episcopal church. For twenty years he was on the Board of Education at Fort Plain, and its president at the time of his death. He was made a mason in 1866, and long served as a trustee. He was a Democrat of the old school.

Dr. Ayres was married in 1898 to Miss Anna Marston, of Minneapolis, Minn., who with a son Douglas, aged 11 years, survives. On the day of his birth, he was enrolled by his father at St. Paul's Church. It was a characteristic act, no doubt, foreshadowing an elaborate scheme for the thorough education of his son.

Dr. Ayres was a splendid type of the family physician, who ministered to one community for forty-eight consecutive years in deep sympathy with its sorrows and its joys, consulted in its domestic and civic life, assuming the duties of a citizen with a quiet dignity and self-effacement that commanded the respect of all. His was a professional career, directed by a refinement of medical ethics, that cast no shadow along his path, and a fellowship that brought strength and confidence to those about him.

The Medical Society of the County of Montgomery while it deplores the loss it has suffered by the death of Dr. Douglas Ayres, and expresses its sympathy with his family in its bereavement, at the same time places on the records of the society an appreciation of the high character and valuable services of one of its members.

In his life he was one worthy of emulation by those who remain, as a citizen who rendered service to the public, as a physician who maintained his interest in the progress of his profession, recognizing and practicing its highest ethical standards, as a Christian gentleman, who practiced what he preached while he bore his honors with dignity and modesty. In return he brought honor to those with whom he was associated.

C. E. CONGDON, M.D.
CHARLES STOVER, M.D.
F. V. BROWNELL, M.D.

DEATHS.

ALLISTER MACDONALD BELL, M.D., Pittsford, Vermont, died January 28, 1914.

J. HARVIE DEW, M.D., New York City, died January 26, 1914.

EDWARD PAYSON FOWLER, M.D., Pelham Manor, died January 29, 1914.

CHARLES E. SMITH, M.D., Whitesboro, died January 25, 1914.

EDWARD CHARLES SPITZKA, M.D., New York City, died January 13, 1914.

NEW YORK STATE JOURNAL OF MEDICINE

A Journal Devoted to the Interests of the Medical Society of the State of New York

JOHN COWELL MAC EVITT, M.D., Editor

Business and Editorial Offices: 17 West 43d Street, New York, U. S. A.
Address Journals sent in Exchange to 1313 Bedford Avenue, Brooklyn, N. Y., U. S. A.

Vol. XIV. MARCH, 1914 No. 3

EDITORIAL DEPARTMENT

THE EDITORIAL POLICY OF THE JOURNAL IN ITS RELATIONSHIP TO THE COMMITTEE ON PUBLICATION.

THE editorship is an elective office, the power of election resting with the Council, nineteen in number, consisting of the officers of the State Society, the Chairman of the Standing Committees and the Presidents of the District Branches. The term of office is for one year, and can be terminated at any time at the discretion of the Council or inclination of the editor. There is no salary attached to the position, but an honorarium, the amount of which is determined by the Publication Committee.

The Publication Committee consists of five members who are elected by the Council to serve one year. The editor is eligible for election to this Committee, whose duty it is to look after the business and financial management of the JOURNAL. The supervision of the Editorial Department rests with the editor, subject to a wise provision hereafter to be mentioned.

The present incumbent of the editorial chair takes pleasure in extending the courtesy of the editorial columns to the subscribers of the JOURNAL with the sincere wish that this privilege will be unreservedly accepted. This particularly applies to men engaged in special work whose comments on their investigations would be authorative and of paramount importance. Topics of general interest which escape the notice of the editor could be especially well described by others. Variety of thought, expression and style will aid in destroying even an unconscious attempt at the assumption of individuality. Contributed editorials will be signed by the author's name in full or by his or her initials, as he or she may elect.

The JOURNAL also invites your criticism, as favorable or unfavorable, it will be inspirational to do better. In accordance with our present policy, when consistent with the writer's theme, special prominence will be given to American Surgery and Medicine, not, however, to the exclusion of catholicity of opinion.

So many American Medical Journals find inspiration in the achievements of foreigners and yet by comparison how meagre the praise

of anything American, do we find in the foreign publications. This policy may seem to you to indicate a want of liberality. We are not lacking in admiration for the marvelous achievements in medicine the world over, but we do want recognition and credit for that which is indigenous. It is unnecessary for us to say that we write to be read—to be read with pleasure and understood with ease. When your brain is fatigued with the profundity of the literature in other journals, we would like to feel that you could turn to your own and find subjects of personal application, discussed colloquially. It is exceptional when a scientific subject treated editorially is more than a concrete compilation of facts or theories of others by the editor, you are as capable as we to form your own deductions. The JOURNAL'S pleasure in most instances will be that of a commentator.

TRANSACTIONS OF THE MEETINGS OF THE STATE, COUNTY AND DISTRICT BRANCH SOCIETIES.

REPORTS of the Transactions of the meetings of the State, County and District Branch Societies, serve an excellent purpose in keeping them in touch with each other. To many they may appear uninteresting, but do not for a moment imagine that these reports are not eagerly read by others. Let even some trivial mistake occur in some one report, and within a day or two the editor is delicately reminded of the error.

It is not in a sense of censorious criticism that we offer the suggestion that secretaries of the County Societies send to the JOURNAL a more complete report of their Transactions. There are always matters of vital importance coming up for discussion either at the Council meetings or in these of the Society where animated debates take place. If the secretaries in their reports to the JOURNAL would refer to the subject matter and the salient points of the discussion, it would in our opinion enhance the prestige of the Society and stimulate the activities of its members. Some secretaries perform their duties in a perfunctory manner, others most conscientiously.

It has been advocated that the position of *Editor* be created, to be made elective or appointive, to each County Society for the purpose of contributing to the JOURNAL more exhaustive reports than those customarily contributed. An efficient secretary devoted to the interest of the Society he represents could well perform this duty. The importance of the position of secretary and the qualifications it demands should be well considered in selecting candidates for this honorable but arduous office.

THE JOURNAL'S BOOK REVIEWS.

AN endeavor has been made to make this department one of interest to our readers. Book-reviewing is an art requiring a knowledge of the subject treated, a keen sense of analysis, an apt power of presentation and the faculty of concretely assembling the chief points of an exposition. As soon as possible after a book is received it is placed in the hands of a reviewer eminently qualified to impartially criticize it from the viewpoint of a specialist. We are of the opinion that the character of our reviews merit your approbation. The corps of our reviewers still permits of augmentation, so that any member of the Society who feels himself qualified will be welcomed as a recruit. To those gentlemen who have in the past willingly given their aid, the JOURNAL desires to express its appreciation and looks forward to a continuation of their valuable aid.

Finally, editorials dealing with the policies of the State Society are submitted by the editor to the Committee on Publication for approval, those on scientific and general subjects are at the disposition of the editor. Working in perfect harmony, imbued with the same ambition, the editor and Committee on Publica-

tion are striving to make the NEW YORK STATE JOURNAL OF MEDICINE a worthy representative of American Medical Journalism.

This brings to a close the series of short disquisitions on the subject of "Your Journal." They were written in the hope of inciting your personal interest in its success by pointing out how intimately such an issue depends upon your good will and hearty co-operation. A co-operation to be fructified by your contributions to its columns.

THE APPROACHING ANNUAL MEETING OF THE MEDICAL SOCIETY OF THE STATE OF NEW YORK.

THE 108th Annual Meeting of the Medical Society of the State of New York will be held at the Hotel Astor, New York City, April 28th, 29th and 30th. The next issue of the STATE JOURNAL will contain the completed scientific program. The meeting bids fair to be of unusual interest. The richness of the city in hospitals and clinical material requires no comment. With this in mind the Committee has planned for a meeting which will be to a large degree clinical. With the idea of making the clinics still more valuable, they will be, as far as possible, illustrative of the papers read at the literary sessions. The Committee has striven to select timely topics and not those which are wont to be met with but rarely and by only a small number of the profession.

Among these we would call attention, in the Section of Medicine, to the paper by Dr. George Cheever Shattuck, of Boston, on "Percussion versus the X-ray in Examination of the Heart," to those on diabetes by Dr. Moriarta and Dr. Vanderpoel, and to the paper by Dr. Charles L. Dana on "The Work of a Modern Neurological Hospital and Dispensary." A special feature of the Surgical Section is the symposium upon "Fractures," by Dr. Elsberg, Dr. Estes, Dr. Woolsey, Dr. Walker and Dr. Hirsch. In the Section on Obstetrics and Gynecology the paper on "Sepsis in Obstetrics," by Dr. William M. Brown, of Rochester, and that of Dr. John G. Clark, of Philadelphia, on "The Action of Gonococcus on the Endometrium," and in the Section on Pediatrics the papers by Dr. L. Emmett Holt on "Some Manifestations of Influenza in Young Children," "Periodic Bronchitis in Children," by Dr. Kerley, and "Active Immunization in Diphtheria," by Dr. William H. Park, deserve particular emphasis. Finally, in the Section on the Eye, Ear, Nose and Throat, the symposium on "Nasal Deformities and Fractures," by Drs. John O. Roe, William Wesley Carter, Harmon Smith, will appeal to every specialist doing work in that line, as well as the papers of Dr. Chevalier Q. Jackson, of Pittsburg, on "Bronchoscopy" and Dr. John D. Richards on "Factors in the Diagnosis of Labyrinthine Suppuration." All of these papers, together with that on the "Surgery of the Antrum," will be illustrated clinically in the various special and general hospitals in the city.

To render the meeting still more valuable to visitors from out-of-town, special clinics are being arranged for on Friday and Saturday of the week of the meeting.

Second in importance to the clinical feature of the meeting, in the opinion of the Committee, has been the desirability of abundant time for discussion of the papers to be read. To this end, the number of papers has been materially lessened over previous years. Many valuable papers in consequence have had to be declined. The writers of all papers will be held strictly to the time limit of twenty minutes in the reading. Any one desiring to discuss a particular paper will be given an opportunity upon application in writing before or at the time of the meeting, to the Secretary of the Section.

The headquarters of the society at the Hotel Astor are most centrally located, and the spaciousness of the hotel offers the great advantage of having all the sections meet under one roof. A map indicating the various hospitals of the city will be supplied at the time of the meeting, and everything will be done by the Committee on Arrangements for the comfort of those attending the meeting.

THOMAS J. HARRIS,
Chairman Committee on Society Work

Original Articles

THE ELEVATED HEAD AND TRUNK POSITION IN THE TREATMENT OF SURGICAL LESIONS OF THE ABDOMEN.

By RUSSELL S. FOWLER, M.D., F.A.C.S.,
BROOKLYN, N. Y.

FROM a study of over three hundred cases of diffuse septic peritonitis caused by appendicitis, personally observed, and the study of other series of cases operated upon by different surgeons, the following conclusion is obvious, that factors other than the variety of operative procedure, particularly the element of time, enter largely into the recovery of such cases.

In Torek's [1] 21 cases with 3 deaths, published in 1904, the abdomen was opened widely and practically evisceration practiced with cleansing of every available portion of the peritoneal cavity, and this followed by complete closure. This procedure, except for the absence of drainage, was practiced by us in 30 cases from 1895 to 1899 with a mortality of 75 per cent. Bode's [2] series of five cases with no deaths treated by continuous irrigation by a tube through the mesentery of the small intestine showed in our hands in three cases a mortality of 100 per cent. We used antistreptococcic serum. We used single tube drainage; continuous irrigation through two tubes introduced into the pelvis; we washed out thoroughly and drained in manifold ways. In other words, all the various procedures emanating from different sources up to 1899 were tried by us without influencing our mortality. The only treatment which we had not employed was the elevated pelvic posture of J. G. Clark and the reason why we did not use this was because we could not bring ourselves to throw practically directly into the circulation whatever infection was remaining in the peritoneal cavity. All methods at our hands showed the disastrous mortality of about 75 per cent. In 1899 I began using the elevated head and trunk position with inhalation of oxygen, with a view of controlling anæsthetic vomiting, to relieve pressure against the diaphragm and for the promotion of normal peristalsis. It happened that one of the cases so treated was a case of diffuse septic peritonitis.[3] This case was an exceptionally bad one, yet the post-operative course pursued was so remarkably mild considering the character of the case that Dr. George R. Fowler, in whose service at the Brooklyn Hospital the case was, ascribed the result in part at least to the position in which the patient had been placed. Accordingly all subsequent cases of diffuse septic peritonitis had employed in their after treatment the elevated head and trunk position. Th results of employing this treatment compared to our previous results were startling.

The first series of cases, 11 cases with one death, made a very favorable showing. The next series, comprising all cases so treated up to the date of the reading of the paper, 100 in number,[4] showed a mortality of 33 per cent. The third report [5] (including 45 cases in addition to those previously reported) showed a mortality percentage of 38 per cent., six additional cases dying on the table. The fourth report [6] showed fifteen additional cases, all operated within twenty-four hours, with no deaths. The fifth report [7] of 188 personally operated cases showed a mortality percentage of 26½ per cent. In this paper an attempt was made to show the relative ratio of the various additions to the original treatment, and a table prepared showing the recoveries classified according to period of operation, which latter showed conclusively that time was the most important element. A careful study of the different adjuncts to the elevated head and trunk treatment, feeding by mouth or not feeding, saline by rectum or no saline, washing out the abdomen or not washing out, shows that the position is the main essential making for success. In septic cases the position is used before, during and after operation. The sixth report [8] showed the mortality of diffuse septic peritonitis in children to be less than in adults, 32 cases with two deaths. At the present writing the last 100 cases personally operated upon, irrespective of the period of the disease, show a mortality percentage of but 7 per cent. The increasingly improved statistics are due to earlier operating.

The Rationale of the Elevated Head and Trunk Position.—The peritoneum is an enormous lymph-sac and inflammation of this membrane is therefore a lymphangitis. The peritoneal absorbents are represented by lymphatics in the structure of the peritoneum. These lymph-channels are large and numerous in the neighborhood of the diaphragm, with comparatively large openings, or stomata; in the intestinal area the lymph-trunks and stomata are less numerous, while in the pelvic area the larger lymph-channels and stomata are absent.

Inflammation of the peritoneum is exclusively of septic origin and may be due to direct infection *e. g.,* contact of the germ with the peritoneum, or to indirect infection from the presence of the toxins which invade the peritoneum through the circulation. Inflammation of the peritoneum in the diaphragmatic area, other things being equal, is far more dangerous than that in the intestinal area, on account of the presence of the large absorbent trunks and the slowness with which these are sealed by infection and thrombo-lymphangitis. The next most dangerous area is the intestinal area, where the lymph channels, though neither so large nor so numerous as in the region of the diaphragm, are still sufficient in size to permit absorption of septic material and its rapid dissemination in the

system at large. In the pelvis the peritoneum is rich in capillary lymphatics, but the larger lymph-channels and stomata are absent (Byron Robinson). Hence infection and inflammation of the lymphatics of the pelvic peritoneum quickly occlude the capillary lymphatics and absorption through these is prevented, the septic process remaining more distinctly localized; the peritoneum in the intestinal area, on the other hand, with its larger and less easily occluded lymph-channels, when inflamed, furnishes septic products which are quickly fed to the system at large, with the effect of producing death in many instances. A like result follows infection and inflammation of the diaphragmatic area, only with still more deadly rapidity.

The treatment of peritonitis is based on our knowledge of the septic origin of the disease, and the recognition of the fact that its chief danger consists in the absorption of the toxic products of the septic processes rather than in a spread of the inflammation itself. Measures to provide for the safe elimination of these products, therefore, form the most rational therapeutic indications.

Infection of the lymph-channels causes lymphangitis, and this in turn leads to the formation of lymph thrombi and consequent obliteration. In localities where the lymph channels are large, absorption occurs before the lymph channels can be obliterated, and the organism becomes overwhelmed. In the case of the smaller lymph-channels and the capillary network of absorbents such as exist in the pelvic peritoneum, the obliterating process takes place with comparative rapidity and the safety of the organism is correspondingly assured.

The indications for treatment, therefore, are first, measures to remove the septic material from the peritoneal cavity; second, methods to favor the passage of whatever of this material there is still remaining, or which may subsequently occur, away from the dangerous diaphragmatic and intestinal areas and into the cavity of the pelvis, where the anatomic and physiologic conditions are such as to render its presence comparatively harmless, thereby to provide for the escape of the infectious products therefrom.

In carrying out the first of these indications the rapid removal of the infectious focus is essential. This must be done as rapidly as possible and with little disturbance of the peritoneum in order to avoid causing more rapid absorption.

The second indication is fulfilled by taking advantage of the force of gravity. There is normally a force in the peritoneal cavity which carries fluids and foreign particles toward the diaphragm, regardless of posture, though gravity may greatly favor or retard the current.* To further the force of gravity and to counteract the force exerted by the diaphragm in attracting infectious material to its own neighborhood, the plan of placing the patient in the elevated head and trunk position, in order to facilitate the passage of fluids from the abdominal areas to the pelvis, is of value. The head of the bed is raised so that its plane is from 12 to 24 inches above the horizontal. The patient is prevented from slipping down in the bed by a large folded pillow placed beneath the flexed knees and resting against the thighs and buttocks. The pillow is prevented from slipping by a strong bandage passed through the folded portion and secured to the frame of the bed at its sides. The elevated head and trunk position offers the additional advantages of assisting materially in relieving the nausea and vomiting, and of favoring peristalsis and the relief of distention by the passage of flatus.

Thirdly, drainage is provided for by a large glass tube carried to the deeper portion of the pelvic cavity and a strip of gauze or wicking in the tube placed therein for the purpose of favoring the escape of the contents by capillarity. The tube is aspirated every few hours with a pipet or a small syringe having a short piece of rubber tubing attached and the drainage strip renewed. To avoid undue pressure the projecting end of the tube should not be included in the binder which secures the dressings of the abdominal wound, but should be dressed separately.

Arising out of the use of this position in diffuse septic peritonitis it has been found useful in other conditions and has been used in several thousand cases of other abdominal lesions.

In the after treatment of operations upon the upper abdomen the use of the elevated head and trunk position insures a simpler after course than if the patient is kept flat. There is distinctly less reaction; the stomach empties itself more easily into the intestine, respiration is easier, pulmonary complications are not so frequent. The patient is very much more comfortable.

After operations in elderly people too weak to be sat up in bed its use has lessened post-operative and hypostatic pneumonia.

In the treatment of fracture of the neck of the femur in elderly people its use has seemed to be followed by more rapid union, while pneumonia, formerly a common complication of such fractures, is now rarely seen.

In pelvic infections it has taken the place of the older methods by operation in the early stages of inflammation.

In no case in our experience has phlebitis of the lower limbs resulted. Nor has a single case of dilatation of the stomach and duodenum been observed.

Summary.—The indications for the employment of the elevated head and trunk position are: First, to lessen the rapidity of the absorption of septic products by retarding the normal intra-peritoneal wave toward the diaphragm. Second, to relieve diaphragmatic pressure and favor normal respiration. Third, to promote

* J. G. Clark.

normal peristalsis, both stomach and intestinal. Fourth, to localize or prevent the spread of infective processes in the pelvis.

1. F. Torek, *Med. Record,* December 1, 1906.

2. Bode, *Centrallblat f. chirurgie,* No. 2, 1900.

3. George R. Fowler, *Med. Record,* April 14 and June 16, 1900.

4. Russell S. Fowler, Transactions of M. S., N. Y., January, 1904. *Med. News,* May 28, 1894.

5. Russell S. Fowler. "The Treatment of Diffuse Septic Peritonitis Following Appendicitis: A Report of 145 Cases treated by the Elevated Head and Trunk Position." *N. Y. State Journ. of Med.,* October, 1907.

6. Russell S. Fowler. "The Treatment of Diffuse Septic Peritonitis from Appendicitis in the First 24 Hours." *Surg. Gynec. and Obs.* November, 1909.

7. Russell S. Fowler. "Diffuse Septic Peritonitis from Appendicitis; Statistics of 194 Cases." *Journ. of A. M. A.,* November 4, 1911.

8. Russell S. Fowler. "Appendicitis in Childhood." *Am. Journ. of Diseases of Children,* August, 1912.

CHRONIC STENOSIS OF THE LARYNX.*

By THOMAS J. HARRIS, M.D.,

NEW YORK CITY.

CHRONIC stenosis of the larynx has been, and is to-day, one of the most difficult, if not the most difficult affection of that organ which we are called upon to treat. The perplexing problems presented by it demand all the patience, skill and ingenuity which the laryngologist has at his command. Leopold von Schroetter, the eminent professor of laryngologist in Vienna, was the first of modern laryngology to undertake the solution of these difficulties. To his inestimable services in this direction is due much of the knowledge which we today possess. Many years afterward, in this country, the late lamented Joseph O'Dwyer made a notable contribution to the subject. In recent years the brilliant labors of John Rogers, of New York, and Jackson, of Pittsburg, have tended to still further remove many of the difficulties that were left, while in Germany von Schroetter's most distinguished pupil, Thost, of Hamburg, in his recent book on "Verengerungen der obere Luftwege," has discussed the subject in a most comprehensive way and given the remarkable results of his work of a quarter of a century.

In its genesis, clinical history, and termination, the following case is a good illustration of what we are wont to meet with in chronic laryngeal stenosis:

Last November a child of five was admitted to my service in the New York Post-Graduate Hospital, with a history of diphtheria two years previously, with intubation at the Worcester (Mass.) Hospital. All attempts to remove the tube were followed by immediate suffocation requiring reintubation. At the end of five weeks tracheotomy was performed for relief of the stenosis. The tracheotomy tube was worn for seven weeks and the wound then allowed to heal after reinsertion of the O'Dwyer tube, which had been worn continuously with the exception of a very brief interval every three weeks when it was removed for cleansing. The case was seen by Dr. Rogers several months previously, and further operative treatment advised against. The child was slightly undeveloped for six years, with a healed tracheotomy wound. Could talk in hoarse whisper, and was admitted to the hospital for observation. On the 2nd of December the tube was removed and an attempt was made by me to examine the larynx, but immediate obstruction to the breathing necessitated its hasty replacement. A six-year-old tube was inserted. This remained in position during the rest of that day and night and during the following day, but on the second night it was coughed up and in spite of its speedy replacement by the house surgeon, as well as a reopening of the old tracheotomy wound, it was impossible to re-establish breathing.

This case is only one of many that occur in every contagious disease hospital; indeed, one of my assistants has informed me that in a service at the Willard Parker he had seen seven such fatalities. I propose to consider the subject in the time at my disposal from the standpoint of etiology, pathology, diagnosis, prognosis and treatment.

Etiology.—Jackson has made the following comprehensive classification of causes of laryngeal stenosis:

1. Panic.
2. Spasmodic.
3. Paralytic.
4. Ankylotic (arytenoid).
5. Neoplastic.
6. Hyperplastic.
7. Cicatricial (a) Loss of cartilage. (b) Loss of Muscular tissue. (c) Fibrous.

For our purpose, however, it can be said that the direct or exciting cause of most cases of chronic stenosis of the larynx and adjacent parts, is either *tracheotomy* or *intubation.* Of the conditions demanding one or the other of these procedures, diphtheria is the one most met with. Indeed, it probably represents as many cases as all other causes combined. Occasionally a post-typhoid ulcer occurs, as well as rarely cases after measles, scarlet fever, and whooping-cough. Cases of stenosis, the result of tuberculosis, are encountered at times, and we are all acquainted with this condition, the result of syphilis. Finally scleroma, goiter and trauma, accidental or intentional, are infrequent causes.

To those of you who have not given the matter thought, the statement that tracheotomy and intubation are the common producing factors in stenosis, may seem surprising.

Let us speak first in regard to *tracheotomy.*

* Read before the Philadelphia Laryngological Society, February 17, 1914.

As Jackson, in a recent article before the American Laryngological Association, states, the properly performed tracheotomy and properly cared-for tracheotomy wound should be free from evil consequences. Experience shows that such is not wont to be the case. The evil of tracheotomy is the result usually of one of two things—either haste in its performance giving rise to a poorly performed operation, or absence of proper care to the wound in the days which ensue. The average tracheotomy is apt to be performed too late, and on account of urgent need of air, has to be done without proper attention to details. It is usually not a tracheotomy, in the proper sense of the term, but a crico-tracheotomy. Because of the urgent haste called for, the trachea is opened in the most accessible portion, which is through the cricoid and the trachea at its upper end. The dire consequences of operating in this locality we shall refer to presently.

Thost is undoubtedly correct in his opinion that of the two regions of approach, the lower tracheotomy, in spite of the greater difficulties of performance, is to be recommended. Better than either of these is the method which was recommended by Bosworth years ago, and more recently by a German, of raising the deep fascia lying on the tracheal rings by means of a groove director slipped under it through an incision over the thyroid, and in this way by pushing down the isthmus of the thyroid gland, doing what is virtually a median tracheotomy. In this connection, let me say that the advice of Jackson and others in favor of local anæsthesia rather than general is to be heartily recommended. In the last two tracheotomies we have performed, respiration stopped during the anæsthesia, and the life of the patient was saved with difficulty. Only less serious in its consequence than the position and nature of the tracheal incision, is the construction of the canula and lack of attention to the tracheotomy wound. In this country we are not such offenders in regard to the construction of the canula as on the continent. The canula with an excessive curve will invariably produce a spur on the posterior wall of the trachea. The ideal canula should be of slight curve. Care in the selection of the size and of its introduction are important. Thost advocates excision of the tracheal rings sufficient to permit of its being introduced without drawing the edges of the cartilage apart. It is well always in the introduction to use an obdurator in order to avoid traumatism of the mucous membrane and of the rings. The double tube is always to be recommended. The outer tube should be removed at frequent intervals and the wound cleansed and touched with a 20 per cent. solution of argyrol where granulation tissue is in evidence. In this way much of the difficulty resulting from the tracheotomy will be avoided.

Intubation.—While it is generally recognized that tracheotomy is a common cause of stenosis, the profession is not so generally agreed on the subject of intubation. Indeed, while it is the common feeling that intubation is an unalloyed benefit for such cases, yet it is probably true that in America we have been too enthusiastic in our belief in the unqualified efficiency of the O'Dwyer tube. Here again it is a fair question whether a proper sized tube, properly introduced, will cause a stenosis. O'Dwyer before he died recognized that the intubation tube is retained not by the cords, but by a reactionary swelling within the cricoid ring. While it is without question true that the trauma of the improperly introduced intubation tube produces the worst stenosis, it seems probable that the effect of the tube upon the mucous membrane of the larynx at its narrowest point within the cricoid ring is sufficient to produce the pathological changes giving rise to the stenosis.

Pathological Anatomy.—When a post-diphtheretic chronic tube case presents itself, what is the condition usually present? This depends to a large degree whether tracheotomy or intubation has been performed, or both. Where tracheotomy alone has been performed the larynx theoretically should be unaffected. The usually hastily and improperly performed tracheotomy, however, has, as we previously stated, been apt to involve the cricoid. In this way the support of the larynx is much interfered with. In fact, any opening of the tracheal tract must tend to cause a collapse in that important structure, inasmuch as nature has regulated the resistance to the outer air to a very delicate degree. Beside the removal of the cartilagenous support and subsequent collapse, the tracheotomy tube as usually introduced has the tendency to push the upper edges of the wound backward and upward. Or there may be an overriding of the edges of the cut tracheal rings. If the incision has been made to one side of the median line, there is apt to be an inversion of the cut edges. In addition, a spur formation will be met with on the posterior wall, while in the wound itself, unless constant vigilance is exercised, granulations will form, often demanding the greatest care to prevent asphyxiation when the tube is temporarily removed. At times, too, in the case of papilloma of the larynx the neoplasm will grow downward and tend to occlude the tracheal opening. Most of the cases that present themselves to us, however, have worn not merely a tracheotomy tube but an intubation tube as well, and, in consequence, the pathological picture is a complex one.

In addition to changes in the trachea, even to the point of stenosis at times, there develops an actual obstruction in the larynx itself. Up to recently just what this was, had not been definitely recognized. Rogers, by his careful study of such cases, anti-mortem and post-mortem, has in recent years cleared this up. We now know that the common explanation that the suffocation which ensues immediately or soon after the removal of an intubation tube is due

either to granulations or to œdema of the larynx, is not correct. Some of these cases are undoubtedly due to an abductor paralysis, usually the result of wearing too large a tube. Others proceed from an actual spasm of the muscles, while in still others, *fright* is the chief cause. But in the majority of cases one of two conditions is present, either *chronic hypertrophic subglottic, or supraglottic laryngitis,* or second, *cicatricial tissue,* the result of this or of the decubitus ulcer which when existent is most often situated inside the cricoid ring. Stenosis due to chronic hypertrophic laryngitis will give one of several clinical pictures. The first one is illustrated in the case reported a few minutes ago. Here instant asphyxiation ensued upon the removal of the tube. The post-mortem examination of this case showed the larynx completely closed by the formation of hypertrophic tissue in the process of undergoing fibrous organization. Such asphyxiation can, however, be the result not of complete obstruction, but rather of fright or apprehension. The patient can breathe much easier through a tracheotomy tube than through the larynx, and immediately becomes apprehensive that he cannot breathe with the tube removed.

Often the picture is quite different. The removal of the tube causes at first no interference to breathing. Jackson has studied such cases by the direct method and has been able to recognize at first the pink cords standing well apart without obstruction in the glottis, and then observed the gradual development in the course of a few minutes of masses of tissue on each side of the larynx below the cords, until the larynx became completely occluded. Where an intubation tube with too large a head has been worn, this hypertrophy may be found also, or only at the upper end of the larynx near the epiglottis. Paralysis of the abductors undoubtedly does occur, but its frequency compared with hypertrophic laryngitis, is such as to render it almost negligible.

Diagnosis.—The determination of the exact condition, or conditions, present in a case of chronic stenosis, requires unlimited time and patience. No possible help should be overlooked. The past history, especially in regard to the producing cause, is important. While this may be clear in an adult, in the children that are often brought into the hospital, it is not so easy to elicit. Information in tracheotomized cases in regard to the circumstances under which the tracheotomy was performed, and whether it was a high or low operation, is of value. The direct inspection of the larynx and trachea, externally, will often reveal cicatricial contractions, or some other desirable information. In all cases an attempt to examine the larynx with the mirror should be made. General anæsthesia is not usually required. Indeed, in the practice of Thost and Jackson even cocaine is not employed. It is the experience of the former that the larynx of a tracheotomized child is usually tolerant to instruments. Often the depression of the tongue with a suitable tongue depressor will afford in the young child a good view. Where this is not possible, palpation with the finger will give much information. In place of the indirect method, or even as an additional aid where it can be accomplished, direct examination by means of the tube spatula is to be recommended. The child should be prepared for the examination as for intubation, and held by an assistant. More recently Mayer has used with success the suspension laryngoscopy, for examination and treatment in such cases. In addition to the examination of the larynx, an inspection of tracheal fistula and of the trachea itself by means of small mirrors, or by a short bronchoscopic tube, is often desirable. Thost has employed with benefit the Roentgen ray for determination of the character of the cartilagenous deformity, and the position that the intubation tube has occupied. Upon the whole, though, the early predictions of von Schroetter as to the value of the X-ray in these cases has not yet been justified.

Prognosis.—The prognosis of cases of chronic stenosis is not an encouraging one. Many of them succumb sooner or later as the result of auto-extubation or from some intercurrent affection, such as pneumonia. They are apt to occur in the children of the poor who are often at the onset of the attack badly nourished. Few of our hospitals are equipped for the treatment of such cases and few hospital internes are skilled enough to give the cases the proper treatment.

Treatment.—No affection of the upper air passage requires so much time, skill, ingenuity and patience in its treatment as that of chronic stenosis of the larynx. As the Germans say, "Gedult und noch mehr Gedult," is ever the essential thing. Patience and more patience is required if we are ever to succeed in curing our case. As a good example of the time required in the treatment of such a case with the complications apt to occur, we desire to give the history of a child under the care of ourself and Dr. Rogers a few years ago. Here a permanent cure was effected only at the end of two years. This was not one of the usual post-diphtheretic cases, but, instead, it belonged to the second most common class, namely, non-malignant neoplasm of the larynx, but the treatment varied in no essential degree from that of a post-diphtheretic case. This case was reported before the American Laryngological Association in 1905:

The child was three years old and admitted to the hospital for obstruction to breathing. An emergency tracheotomy was immediately performed. An examination of the larynx showed a new growth obstructing the lumen. A piece was removed and was reported by the pathologist to be that of an angiomatous fibroma. A laryngo-fissure was performed and the growth removed. Infection, however, took place in the

wound, and a cicatricial stenosis resulted, necessitating the continued wearing of the tracheotomy tube. Four months later with the assistance of Dr. Rogers I dilated the larynx under ether, by means of urethral sounds carried in through the tracheal fistula, and introduced a large swelled-neck tube. This was later coughed up and the house surgeon had to reopen the tracheotomy wound in haste with the child in almost a dying condition. In November the larynx was again dilated and a T tube introduced. This was worn continuously for two months and then removed. The tracheal wound was allowed to close and a tracheal canula introduced. The subsequent treatment of the case was in the hands of Dr. Rogers. From November to the May following she had two attacks of bronchial pneumonia, necessitating a reopening of the wound in the neck. On May 1st, 1905, there was still a moderate degree of dyspnea. An extra long tube was then inserted, with the hope of overcoming any cicatrices situated low down. The case continued to do well under Dr. Rogers' care, but it was necessary, subsequent to the report of 1905, to reopen the larynx for the purpose of removing a return of the growth, which this time proved to be a papilloma. The tube was worn for a further period of time, finally being removed at the end of eighteen months to two years. The exact date at this moment I cannot supply. I have seen the child from time to time since then and there has been no recurrence of the stenosis. In spite of the injury to the larynx, as a result of the several operations, the voice although hoarse is surprisingly strong.

The classical work of von Schroetter is today as important as when he first brought it forth, and while brilliant work has been done by others, noticeably Rogers, Jackson, Thost, Chiari and Sargnon, Schroetter must always be regarded as the father of the treatment of chronic stenosis of the larynx. In this, as in many other departments of medicine, the confusion of tongues that took place at the fall of the Tower of Babel, has worked incalculable harm. Different languages and the wide separation of the ocean has caused our German colleagues to fail to appreciate what we have been doing for these cases, and still more so is it true that we in this generation at least, have failed to acquaint ourselves with the methods, technique and success, of the German School. The choice of treatment depends to a large degree upon the condition present, whether a tracheotomy has been performed, as is usually the case, or whether intubation has been practiced, or both; secondly, upon the pathological condition present, whether it is one of pure hypertrophic subglottic laryngitis, or whether the later stage of cicatricial formation has taken place with adhesions or bindings down within the larynx.

In a general way it may be said that the treatment fails in one of two classes: Surgical and non-surgical. With the exception of the French school, who have so enthusiastically recommended laryngostomy, workers in this line are agreed that surgical measures, especially extra laryngitist measures are not to be used as a routine procedure, but rather as a last resort. Of this we shall speak further in a moment. The non-surgical measures consist in one or another way of gradual dilatation, preceded where cicatricial bands exist, by an endo-laryngeal separation, either with the concealed knife or the galvano cautery. Dilatation carried on in this way in the hands of such men as we have mentioned, has produced surprising results. Which method is the best it is difficult to say. The personal factor enters largely into this. In any case, a long period of time must elapse. In many of the cases which have been reported, years have gone by before a cure could be effected. Rogers' dictum that a year should intervene after the tube has been removed before it can be definitely stated that a cure is the result, is correct.

We come now to the consideration of the several methods of dilatation. The original method employed by von Schroetter, was that by means of a set of graduated hard rubber dilators. These are 25 cm. long, gradually increasing in size as the scale is ascended. Schroetter tested the shape of these tubes for a long time and finally found that a triangular tube with smooth rounded edges was the proper form. These are introduced through the mouth and can be used where no tracheotomy fistula exists. They are to be employed daily, at first for a few seconds, then for fifteen minutes to half an hour and later allowed to stay in position for several hours. One of the advantages of the tubes is that the patient himself can learn to introduce them. In the hands of von Schroetter and others they have repeatedly effected cures. It became, however, soon evident to him that occasional dilatation even for long periods of time was not the ideal thing. He accordingly devised, to be employed where a tracheal fistula existed, a set of 24 solid metal tubes, each tube being ½ cm. in diameter larger than the preceding. These tubes are also introduced through the mouth, but by an arrangement by which they are fastened to the tracheal canula, remain permanently in position. In this country they seem to be little or not at all known. In fact, when the Schroetter tube is spoken of, the hard rubber dilating tube is generally referred to. Because of this, or for other reasons, the hollow intubation tube of O'Dwyer was eagerly seized upon as a method of producing the systematic dilatation desired. O'Dwyer himself did much valuable work in this direction, but his follower, Rogers, of New York, with the most commendable ingenuity, skill and patience, has perfected his methods. These are so important that we desire to refer to them in some detail.

Rogers lays considerable stress upon the frequency of abductor spasm. In agreement with others, he believes that granulations are com-

paratively rare, and when found are usually around the tracheal fistula, or around the epiglottis, and can be easily contended with. The essential feature of Rogers' work consists in a modification of the O'Dwyer tube, in such a way as to more thoroughly exert pressure upon the swollen or cicatricial tissue, which is wont to extend from above the cords downward below the cricoid. By such pressure carefully adjusted, he has been able to cure the most intractable cases. The hypertrophic form is distinguished from the cicatricial form by the ease with which the larynx can be opened with the intubation tube and the promptness with which the larynx closes on the removal of the tube. He is in the habit in such cases of carefully testing the obstruction, under a general anæsthesia if necessary, by means of the ordinary O'Dwyer tubes, and when he has found the largest tube that can with some force be admitted, substitutes for it what he designates as his "special" tube. This is a tube of the usual length but with its neck, or the narrow portion at the lower end, at least 1/32nd of an inch larger in its transverse diameter, and the swell, or retaining portion immediately above it, at least 3/32nds of an inch larger than the neck. In case of complete stenosis it will be necessary to have it 4/32nds or even 5/32nds of an inch larger in order to prevent the dreaded auto-extubation. These tubes are usually of rubber and are to be worn for from a month to six weeks when they should be removed and cleansed. At times it will be necessary to substitute for the rubber tubes, tubes of composite metal. Rogers cannot explain the advantage obtained by these metal tubes, unless it is due to their electrolytic action. As a result of his extensive experience in these cases, Rogers has come to the conclusion that even a tube with the increased swell is not perfectly safe, and recommends for all cases apt to extubate themselves, the wearing of a plugged or clamped tube. The plugged tube is not original with Rogers. Indeed, it is not clear who first made use of the principle involved, which consists of a tube introduced through the larynx and retained in position by a plug screwed or clamped in through the tracheal wound. This obviates all danger of the patient coughing the tube out, and of the danger to life resulting. For children under ten years old a clamped tube is necessary, as it is impossible to make a proper plug in the smaller sizes. One of the two pieces should be of rubber, as otherwise an accurate adjustment is not possible and a deposit inside of the tube takes place. The cicatricial form of stenosis is more difficult to treat at first, but it is not as liable as the hypertrophic form to a relapse. There is in these cases often extensive or even complete obstruction of the larynx. If a tracheotomy tube has been worn after the intubation, there may be a stricture at the upper side of the fistula or even below, which will require dilatation, as well as a possible obstruction from a spur on the posterior wall of the trachea.

As in the case of Bernice Walcott just referred to, Rogers is in the habit of dilating these strictures with the urethral female bougies from the tracheal fistula, and when the larynx has been sufficiently enlarged, introducing a permanent T tube. In certain cases he has excised the cicatrix, but with indifferent results. Both the special and the T tubes must be worn for a number of months. From time to time the larynx should be tested in regard to a re-established patency. When finally such a patency has been secured, often only the first step in the cure has been effected. The tendency is to too hastily pronounce a cure, remove the tube, and then be compelled to repeat the treatment all over again. Such cases are very apt to do well for a short time, hours, days, or sometimes even weeks. It is too often the tendency for them to gradually close. It would be a mistake to allow them to leave the hospital or otherwise to be out of constant observation, as abductor spasm may at any time occur, requiring instant replacement of the intubation tube, or opening of the tracheal fistula in case that is closed. The wise plan is to introduce a smaller tube and let that be worn for a number of weeks, and then to remove it. Where it is found that the larynx is gradually contracting, it will be necessary to replace the larger tube and have it worn for another period of time. There is considerable difference of opinion in regard to the abductor spasm. It is without question the result of the prolonged wearing of a large tube and the resultant disuse of the abductor muscles.

The average duration of treatment varies from six months to a year, although in certain cases it will extend over a much longer time. Rogers' statistics of 1905 showed that he had treated 22 cases "with 3 deaths, 1 from nephritis and pneumonia and 2 from asphyxia; there were 3 failures to cure, 2 relapses after many months of apparent cure, and still under treatment; 4 apparently cured but under observation and still wearing intubation tubes; 10 cures, that is, without sign of relapse for at least a year." This represents then, in percentage, a fatality of 14 per cent. and 55 per cent. of cures.

The serious loss to science caused by the variety of tongues previously referred to, is forcibly illustrated by our inacquaintance in this country with the third chief method of treatment, namely, that with Thost's dilators. As extensive and successful as his work has been, it appears to be almost entirely unknown in America. For that reason we shall take the liberty of discussing his methods at some length.

While Thost has not failed to make use of the methods of treatment inaugurated by his great chief, von Schroetter, and has on occasion also employed the O'Dwyer tube, his treatment has been peculiarly that by means of a retaining tube introduced through the tracheal fistula.

His results secured in this way have been more than good. In a series of 50 cases which he reports, he has been able to secure 76 per cent. of cures, or, excluding a case of tuberculosis, one of sarcoma and one of carcinoma, which of necessity could have only a fatal termination, his percentage of cures was 86 per cent. More accurately, his results are as follows: Fifty cases were treated with his dilator; 38 were cured; 3 were still under treatment; 2 discontinued treatment (one child on account of a severe coxitis), and 7 died. Of the 3 cases still under treatment, 2 in his opinion are sure to get well, and the third, a posticus paralysis from tabes, does not permit of a cure. Among the advantages which he claims for his method are the following: First, the ability to introduce the dilators without general anæsthesia, even in the most unruly children; second, the security with which they remain in position, so much so that the child can leave the hospital. They occasion no difficulty in eating and drinking. Indeed, the children can go to school. Third, no special supervision is required of them, because no accident can occur. Fourth, the pressure exerted by them is pronounced. Fifth, the method is entirely free from blood, and in the majority of cases can be carried out without any operative procedure. Sixth, no retaining threads as in the tubes of Schroetter are required, causing, as they often do, irritation in the mouth, or of being swallowed. Seventh, there is no attachment to the tracheal canula required. Eighth, the tube is entirely separate from the canula and therefore there is no tendency for mucus or crusts to gather as is the case with the Schroetter tubes. Ninth, inasmuch as the larynx is completely filled by the tube, neither mucus nor saliva can pass into the upper air passages. Thost particularly lays weight upon the certainty with which the tubes remain in position. In only one case in his series was it ejected. It was our privilege to visit recently the Emerdingen Hospital in Hamburg, where his work is performed, and the results that he secures there are deserving of far wider knowledge than at present obtains.

In addition to these several methods of dilatation, the comparative merits of which we shall speak in a moment, the plan pursued by O'Dwyer of putting a gelatin coating on the tube is to be recommended as one of the best ways of bringing medicine in contact with the hypertrophic tissue. In the cicatricial stage fibrolysin has been used to advantage, and, as we have already stated, the application of the galvano cautery is at times an admirable method of attacking either the hypertrophic tissue or a cicatricial band.

The last method of treatment is the surgical. To this we have already made some allusion. Cases will arise where it will be necessary to split the larynx for the purpose of excision of the cicatrix, or for the removal of a benign neoplasm, usually a papilloma. It is recommended that where this is done, if possible, the thyroid cartilage should be left attached in one point in order to protect the cords. All surgical procedures have the tendency of wounding the cords, and in that way, of impairing the voice.

Next to be mentioned after laryngo-fissure are those surgical procedures performed endolaryngeally. These include cutting of webs and the removal of papillomata by means of forceps. This in the adult can be done by the indirect method. For children, however, the direct method is peculiarly fitted. Jackson is of the opinion that by repeated removal of the papilloma with the laryngeal speculum it is possible finally to effect a cure. In place of the direct speculum in the last two years the suspension laryngoscopy of Killian has been used with marked benefit for papilloma of the larynx. Harmon Smith, among others has made use of fulguration, and we have at present under our care a case of papilloma in a child of six which we are treating with radium. While in the adult we have been able to secure good results, it is too early to speak definitely in regard to the child, but the case is so instructive in several particulars that we desire to briefly refer to it. Treatment by radium has the advantage of not injuring the cords, which is almost invariably the case when cutting instruments are used.

The child was admitted to the Post-Graduate Hospital last spring, with the history that his throat had been operated upon and a growth removed the preceding winter. The child was aphonic but had no difficulty in breathing. Examination showed a large papilloma attached to the left vocal cord. It was decided to try radium in the case. The little patient was very amenable to treatment and permitted the introduction of the radium 150 m. g., directly into the larynx by means of the laryngeal mirror, but the size of the celluloid retainer, together with the laryngeal growth, so completely obstructed the breathing, that it was impossible to keep it in more than a minute or less at a time; in all about 20 minutes. Some improvement followed the use of the radium and the child was discharged from the hospital to the outdoor clinic. During the summer increased difficulty showed itself in the breathing, and he was readmitted to the hospital and several treatments by fulguration made by my assistant, Dr. Forbes. When I returned in the fall the condition in the larynx appeared unaltered. The child was breathing with some difficulty. I determined now to do a tracheotomy and in that way be able to introduce the radium for a proper length of time. The tracheotomy was performed in November. Sudden cessation of breathing compelled the abandonment of the dissection and the necessity of opening the wind-pipe as speedily as possible. This was done through the cricoid and the upper ring of the trachea. Considerable reaction followed which gradually disappeared. In January I was first able to reapply the radium. This I attempted to do under local anæsthesia, but

found in spite of Thost's assertion to the contrary, that the irritability of the throat was so great that it was impossible to do it. The child was accordingly anæsthetized, the anæsthesia being induced by the rectum and the radium, in the strength of 1,500,000 radio activity, applied for 30 minutes. Since then, three weeks ago, at the time of this writing, the condition of the child's larynx has improved. At present the child is able to breathe through the larynx with the tube closed, sufficiently to blow out a candle. A further report of the case will be made later.

We know now that destruction of the cords will not cause permanent loss of voice. So much so, that where stenosis exists from a paralysis or an anchylosis, it is entirely justifiable to excise one or both of the cords with the confident hope that the voice will be re-established from the cicatricial bands which form! In addition to the slight surgical procedure of laryngo-fissure, within the last few years the French school have warmly advocated the operation known as laryngostomy. It is not our purpose to describe this operation which is now well known, further than to say that it consists of a splitting of the thyroid and the removal of all the cicatricial bands, raising of any depressions in the cartilage, and then the gradual dilatation of the larynx by means of soft rubber tubes left in situ for a considerable period of time and gradually increased in size. The results of Sargnon, who has done the operation more often than anyone else, are as follows: In 16 cases reported, there were 3 deaths, or 18 per cent.; 10 cured in whole or part, *i. e.,* without fistula, 60.2 per cent. An exact estimate of the relative merits of the several methods of treatment employed, namely, those of Thost, Schroetter, O'Dwyer and Rogers, and laryngostomy, is difficult. Here, as in all other treatments, the personal element enters largely. In spite of the enthusiasm of our French confreres, and also of my esteemed friend, Dr. Chevalier Jackson, who, in his recent contribution has spoken most enthusiastically of the operation, it is our judgment that it should be reserved for extreme cases, where it has not been possible to effect a cure after a faithful employment of all of the various non-surgical methods of dilatation. The 3 fatalities in 16 cases shows the operation is not unattended with danger. It is not to be forgotten that the operation itself does not effect a cure, and that as in every other method, the essential thing is dilatation. It is recommended that the fistula be not closed for a long time after proper dilatation has been secured. The percentage of cures and the duration of time is not better than in the results secured by other methods. When we come to compare the several non-surgical methods of dilatation, it is still more difficult to arrive at a just conclusion. The Thost method presupposes a tracheal fistula. While it is usually the case, in certain instances no tracheotomy has been performed. This leaves the employment only of a Rogers' tube or of the Schroetter dilating tubes. For adults suffering from cicatricial formation the result of lues, the Schroetter hard rubber dilating tube is the ideal thing. The patient becomes so adept that he is able in time to introduce it himself. Repeatedly by this method cures have been effected.

There is no question, however, but permanent dilatation is the important thing. If no tracheal fistula exists, the intubation tube is our only method of procedure. Usually, however, if such an opening is not present, it will be desirable to make one. The von Schroetter metal tube which is attached to the canula has the disadvantage of leaving a space in the post-tracheal wall where granulations are apt to form. There is a certain amount of danger in a child wearing even a special tube, unless it is fastened through the tracheal wound. The comparative merits of the intubation tube versus the dilators of Thost can only be determined by their employment in an unbiased way in a considerable series of cases. So far as we know, up to the present time, this has not been done. In addition to the advantages claimed for his dilators, Thost believes that the solid bougie has special merit over a hollow tube. We propose to give them a fair trial in the next suitable case that we have, and trust that many of our hearers will do the same. Whichever method is employed, in order that a cure may be effected there will be demanded the highest degree of skill and patience.

THE INTRAVENOUS USE OF PARALDEHYDE.*

By G. KIRBY COLLIER, M.D.,

SONYEA, N. Y.

THERE appeared in the *Annals of Surgery* for January, 1913, a very interesting report by Noel and Souttar of the use of Paraldehyde intravenously, and believing that such a use of this drug would prove valuable in the treatment of certain mental and nervous states, the writer has endeavored to follow out the methods used by Noel and Souttar, with some modifications, chiefly in dosage, owing to the types of patients and the conditions met with.

Paraldehyde is described as a clear colorless fluid, having a peculiar etherial odor and a disagreeable pungent taste, and is prepared by heating acetic aldehyde with a small quantity of hydrochloric acid or with zinc chloride. It has a specific gravity of .998 and boils at about 225 F. It is soluble in eight parts of cool water, but less readily in hot water. It is freely soluble in ether and is usually administered in doses of half a dram to two drams in some suitable menstruum to disguise the taste and odor. Its peculiar disagreeable odor and taste has pre-

* Read at the annual meeting of the Seventh District Branch of the Medical Society of the State of New York, at Sonyea, September 25, 1913.

vented the more extensive use of this drug, and any method of administration that will overcome these disagreeable features will, I am sure, cause us to administer paraldehyde more frequently. And again, the very large dosage required to effect any result when given by mouth militates against its use.

Paraldehyde has no depressing effects upon the heart and lungs and is reasonably safe, and unlike many drugs of this class there is no period of excitement proceeding its sporific effect. Not only the cerebral, but also the whole lower nervous system is affected. It diminishes the excitability of the spinal cord and the irritability of the motor and sensory nerves. In the literature, we find few recorded cases of paraldehyde poisoning. Mackenzie [1] reports the case of a woman who took by mistake three and a half ounces. A deep stupor followed and not until 41 hours after the drug had been taken was she able to understand and reply to simple questions. Peterson [2] reports the case of a woman who took ounce doses nightly for months without any apparent untoward effects. Elkins [3] reports the case of a man who took sixteen ounces a week. This patient rapidly became emaciated and presented cardiac and muscular weakness with delusions of persecution and mental failure.

Our results with the intravenous use of paraldehyde do not differ materially from those obtained by Noel and Souttar, but we went a step further, and endeavored to find if this plan of administration would be of any great value in the treatment of the acute confused states met with in epilepsy and other nervous and mental disorders. I think it is recognized today by all that we have no aid at our command more satisfactory in the treatment of these conditions than the judicious use of hydrotherapy, but even with this method of treatment we occasionally meet with unfavorable results. It was thought that if we could administer paraldehyde intravenously prior to any hydrotherapeutic or other measures instead of using chloral or hyoscine or other powerful depressants we would be making a great step in advance in dealing with these mental states.

We endeavored to use paraldehyde intravenously in no particular group of cases at the Colony and have taken such cases as become mentally confused following seizures, status epileptus, epileptic furor and for minor surgical operations. In none of our cases has it been necessary to resort to other methods of medication or treatment to produce the desired result.

Our method of administering paraldehyde is as follows: A definite amount of paraldehyde, varying in our cases from 7 to 22 cc. of paraldehyde was first mixed with an equal amount of ether and this solution then diluted with 150 cc. of cool sterile water or a cool one per cent. sodium chloride solution. Care was always taken to see that this solution was kept cool, the flask being surrounded with ice while preparations were being made. It was found in this way that the paraldehyde was better held in solution.

The flask containing the solution is briskly shaken and through the cork two glass tubes passed. To one of these was attached a rubber tube, at the distal end of which was a fine needle for puncture of the vein. The second tube is curved upon itself, the external limb extending below the bottom of the flask to permit of the entrance of air. Short pieces of glass tubing are placed in the rubber tube so that the solution can be inspected and in order to prevent the injection of air into the vein. The flask being inverted, a constant flow of the paraldehyde solution is obtained, which is regulated by the aid of a screw stop-cork. Puncture was made in our cases into the median bascilic vein, and in only two was it necessary to expose the vein for puncture, the needle being inserted into the vein through the skin without any difficulty.

We will not attempt to report in detail all of our cases but will cite only a few to show what can be accomplished with paraldehyde used intravenously.

Case I.—J. K. This patient had tetanic status. He was constantly convulsing from about 3 p. m. until 5:30 p. m. At 5:30 p. m., he was given paraldehyde intravenously, 7 cc. being injected into the right median bascilic vein. In 30 seconds after needle puncture was made the odor of paraldehyde was noted on his breath and in three and one-half minutes after needle puncture patient became quiet and ceased convulsing. Was put to bed and slept quietly all night until the next morning, when he became somewhat elated for a short time, about one-half hour. He remained in bed and in a short time he went to sleep again, sleeping most of the day and awakening in the evening. Appeared in his usual condition at this time. Thirty hours after injection was made the odor of paraldehyde on his breath was very pronounced.

Case No. II.—F. McP. Paraldehyde was prepared in the usual manner 10 cc. being used . An injection was made into the right median bascilic vein. Within 10 seconds after needle puncture paraldehyde was being excreted from the lungs as evidenced by odor of the drug on patient's breath. Later patient became drowsy. Five minutes after injection or needle puncture an incision about 6 inches in length was made in forearm and an abscess opened without causing any apparent pain. Patient slept for two hours following injection, and 24 hours after the odor of paraldehyde was well recognized on his breath.

Case No. III.—B. C. This patient was given 12 cc. of paraldehyde prepared in the manner described above. Fifteen seconds after puncture was made the odor of paraldehyde was noted

on the breath and 3 minutes later an infected wound of the foot was curetted and packed without causing any apparent pain. This patient slept for 12 hours. No headache or other unfavorable symptoms followed the use of paraldehyde intravenously in any of our cases.

Case No. IV.—E. S. A young woman having serial epileptic seizures and being mentally confused. Given 15 cc. of paraldehyde prepared in the usual manner, injection being made into the median bascilic vein. In 10 seconds after beginning injection paraldehyde was noted on the breath and in 4 minutes patient was asleep.

Case No. V.—M. G. Serial seizures—22 cc. of paraldehyde used, followed in 4 minutes by sleep and cessation of attacks.

Case No. VI.—P. B. Eight cc. of paraldehyde used. Three minutes after injection was begun—abscess opened and curetted.

Case No. VII.—F. W. Given 7 cc. of paraldehyde in the usual manner. In 10 minutes patient was asleep and a dislocation of the right thumb was reduced. Patient slept for only one hour and upon awakening was allowed up and in his usual condition.

REFERENCES.

1. Mackenzie, *Brit. Med. Journal,* Dec. 12, 1891.
2. Peterson, *Med. Record,* Dec. 10, 1892.
3. Elkins, *Quart. Journal of Inebriety,* Oct., 1894.

A CONSIDERATION OF PAST AND PRESENT RELATIONS BETWEEN THE PUBLIC AND THE MEDICAL PROFESSION, AND THE MUTUAL OBLIGATIONS THEREBY ENGENDERED.*

By E. B. KAPLE, M.D.,
ELBRIDGE, N. Y.

AMONG the duties of the President of this society, as prescribed by its constitution, is the presentation of a President's Address.

It is in response to this constitutional obligation, rather than to any desire to inflict upon you the penalty thereby imposed, that I submit the following consideration of some of the relations that have existed and do now exist between the past and the present day medical profession and public, with the *mutual* obligations thereby engendered.

The date of my birth may not be generally known to you, hence I will confess to having slightly less than two decades of practical experience upon which to base my conclusions. I venture the assertion, however, that no previous twenty year period has to so great a degree changed the relations above referred to.

I well recall the time when my father was a country practitioner and one of the class now quite generally considered as obsolete—a family physician. Indeed I began practice under identical conditions, and in a community where my father and his worthy predecessors had made the position of "our family doctor" one that it was an honor to fill. In attempting to fill it I feel that I gained a valuable insight into the requirements of those days as compared with the present.

The laboratory refinements to today were in their infancy, indeed were practically unused outside of the larger centers. Clinical observation, trained by experience, was the basis of practically every diagnosis. Colon bacillus infection was not differentiated from typhoid fever, nor follicular tonsillitis from diphtheria, while even appendicitis was seldom diagnosed except in case of abscess, when the death certificate usually read "peritonitis." "Cholera infantum," "cholera morbus," "billiousness," and "rheumatism" were refined diagnoses. The trained nurse in the private home, outside of wealthy families in large places affording hospitals, was an almost sure indication of the hopelessness of the outlook. To consider the moving of a patient into the hospital occasioned the same cheerful acquiescense on the part of friends and relatives as would be expected from the consideration of the funeral arrangements. To tell of having been operated by a surgeon from the city, and to have recovered, was much like the discussion of the resurrection. The first patient to have the services of a trained nurse and a city surgeon, in the community in which I began practice, I believe to have been my first case of appendicitis, and one of our esteemed members was the operator. It was a pus case, and yet, well do I recall my elation when the surgeon assured the family that it was exceptional to diagnose a case so early, and this notwithstanding she had been under my observation for *several days.* The city surgeon could establish an enviable reputation in a rural community in those days even by his failures, as evidenced by two other operations at about this same time; one for strangulated hernia followed by death, the other the same condition followed by recurrence of the rupture within three months. Yet when we, with Dr. Burch giving the anesthetic, and without even the aid of a nurse before, during, or after, operated a complete inguinal hernia with perfect and permanent cure, it occasioned but little comment, no glory, and less money. Nevertheless these were the times when the word of the family doctor was law with his people; when they consulted him for advice on all occasions and in all kinds of troubles even outside the realm of medicine; when he was their true and trusted friend; when he was often paid a too small monetary compen-

* Read before the Onondaga Medical Society, at Syracuse, December 14, 1913.

sation just as now, though this was often counterbalanced by equivalents in the form of potatoes, apples, butter, oats, hay, straw, pork, even cider, but above all else by a spirit of unflinching loyalty, supreme confidence, and true friendship.

Those were days when the children went to school, walking from a half to five miles, often through storm and snow drifts, arriving at 9 A. M., staying till 4 P. M., carried and ate their cold dinners, and walked home under similar conditions. If sick, they stayed at home or went to school as the parents decided was best. Health officers there were, whose duties were ended when they either put up a sign of diphtheria, smallpox, or scarlet fever, or else relied upon the attending physician to do it for them, but they were paid by the town in accordance with the actual work which they did as health officers.

Individuals too poor to pay a physician, if deserving, were usually cared for by the family doctor until the burden became too great, when an order from the poormaster was obtainable, the doctor was selected by the patient, and paid for from the town funds at the same rate as would be charged for a similar service for one not a public charge, while never to my knowledge did such a bill, if honest, fail to be audited and paid.

Seldom did the country practitioner attend other than an occasional county society meeting, and still more rarely did he attend a state or national meeting. Post graduate study or attendance at hospital clinics, was an almost unheard of practice for an established rural physician, and if enjoyed was an almost invariable prelude to his removal to a larger place.

The clinical thermometer, with perhaps a stethoscope, medicines, a few books, and a pocket case of instruments, constituted the principal equipment aside from the horse and vehicle.

Telephones, automobiles, state roads, electric roads, daily papers, periodicals, rural delivery, and other present day means of communication were not then available for the accumulation and assimilation by either the physician or his people, of desirable or undesirable knowledge, medical, scientific, or otherwise.

The various and varied cults, pseudo-scientists, pathists, isms, osophists, suggestions and suggestionists, et cetera, had not the widespread opportunities to obfuscate small, untrained, or crooked minds, and the family doctor was supreme. Such supremacy was the principal reward, as a rule, of a sincere, unselfish, and effective service for his people.

How does all this compare with present day conditions? I here quote from an article by the president of our state society, Dr. Campbell: "The practice of medicine is not what it used to be because the human need is not what it used to be. In the memory of those of us who began the practice of medicine but two decades ago, the change is most striking. The writer, after he was graduated, was called upon to relieve an established physician, and made from twenty-five to thirty calls and saw from fifteen to twenty patients in the office daily. This was twenty-five years ago."

These were the conditions and the obligations which the old family physician met. Are we meeting our obligations to the public? Can we meet the obligations which the present day conditions place upon us, and even if we can, do we receive the reward that such an accomplishment deserves?

The family physician of the past, as I have attempted truthfully to portray him, except it be in some sparsely settled community or one so situated as to prevent easy communication with large centers, no longer exists—can no longer exist.

I venture to assert that he has been gradually evolved into a more capable, a more scientific, and potentially at least, a more effective aid to the maintenance of the public health.

To every evolutionary change there is attached a bill of costs, whether it be a progressive or retrogressive change. In the evolution of the family physician of two or more decades ago to the modern physician, who has settled this bill of costs?

I feel that the answer must be that we, the average medical men of today, are paying this cost, for while we have been made potentially more effective in the protecting of the public health, yet present conditions to a considerable degree prevent the conversion of this potential effectiveness into its highest possible actuality. Insofar as the public will permit, however, this conversion is consummated, so that the public receives the full benefit that it will accept, and yet our reward is no greater in dollars than was that of the old family physician, while to us is denied a large part of his gladly accorded prerogatives—loyalty, confidence, intimate friendship, and leadership. We are tried and if we fail to deliver the goods which the public has been taught to believe itself entitled to, we are discarded with no thought that this same public can be at fault and that we may have delivered as much as they have permitted us. The public is today getting about what it *thinks* it needs from the medical profession, and we are paying a large part of the cost.

It is not my intent nor my desire to pose as an extreme pessimist, and in the face of the much heralded sacredness and glory of the profession of medicine (not necessarily the practice) I feel that such assertions as I have made need more than mere words to make them effective. Perhaps just a simple description of the average present day general prac-

titioner and his relations to the public will best illustrate my reasons for such assertions.

Let us first consider the commercial aspect. Our predecessors of a few years ago were required to spend one year with a medical præceptor (as often as otherwise this requirement was a "dead letter"), and two sessions of a few months each in a duly accredited (?) medical college, the total expense of which, aside from time, would exceed but little that of the freshman medical college year of today. Not only this but the preliminary requirements were such as would permit the present day grammar school student to take a vacation while making them. Today a college degree as preparatory to medical training is not only being advocated but is far from being exceptional, while four full college years with State examinations is required as final proof of fitness. I was recently informed by a young man about to enter first year's training in your medical college, that he could by no possible means cut his necessary expenses for the year below six hundred dollars. A year of hospital training following graduation is now almost the rule where it was formerly the marked exception.

With this increased investment of time and money, should there not be a corresponding increase in returns?

The present day physician locates in an average village of from five hundred to a few thousand inhabitants within comparative easy access to some larger city. (Having no personal acquaintance with the conditions of a city general practice, I shall not attempt to consider that.) Instead of the few necessities of equipment considered sufficient by the now obsolete practitioner, he must meet the requirements of a posted and discriminating public, by installing an outfit of instruments that a few years ago would have been considered no disgrace to a well equipped hospital; with a cabinet and sterilizer for same; with an operating or examining table or chair; with various forms of apparatus for so-called physical therapy; with more or less equipment for certain special work that every well equipped general practitioner must be able to perform. He should acquire some system for keeping and filing his case records. For diagnostic purposes he must at least possess a microscope and such accessories as will enable him to do practical work, a centrifuge, a blood counting apparatus, and even a sphygmomanometer being now essential. His reception room must be well furnished, with a supply of suitable periodicals or entertaining reading matter therein. The horse has become too slow for this discriminating public, hence both the horse and automobile are necessary.

The public has been educated in its demands, or at least its demands have changed. It expects prompt service, early diagnosis, and results from treatment such as the public health papers have taught it to expect.

The specialist in the city, made so easily accessible by means of these same convenient telephones, electric cars, automobiles, state roads, etc., is ready to take up the work that the public is informed they are so much better qualified to do, while he incidentally takes such a perfectly proper amount of the public's money that the general practitioner gets but little cash remuneration, as well as a mighty small allowance of gratitude for having pursuaded his patient to let his life be saved by the specialist.

All these modern transportation facilities have made it possible for the rural inhabitant with even moderate means to enjoy the advantages of the city theatres, musicales, lectures, etc. Rural delivery permits the daily newspapers and periodicals to reach him almost as soon and as generally as is true of the city inhabitant.

The present day physician must be able to "keep the pace" of the so-called "better class" in his community, to do which he must, regardless of his income, partake of the pleasures of these theatres, etc., must subscribe liberally not only for medical books that become obsolute within three years from their date of issue, but to works on general and special topics of the day, in order that he may keep up to the demands of the educated public, his associates. He must keep up his end of the ever higher standard in all things or be superseded.

Like him the old family physician had to "deliver the goods," but unlike his goods of former times, the present day medical man must carry a larger supply, of better quality, and at a higher price in time, labor, and money.

The present day practice of medicine is ninety per cent. a pure commercial transaction on the part of the public. Their demands are specific, they often know, and always think they know, what their medical attendant should deliver, and failure to meet that demand justifies their change to the other man. The personal loyalty, personal friendship, personal confidence, of the old family physician days is gone, or going fast.

These conditions are generally true of the individual public, but what shall we say of the demands of the public as a whole.

Public health departments, state and municipal, are today making demands upon the time and labor of the medical profession, in the way of public school inspection, prevention of disease by quarantine and disinfection, inspection of general sanitary conditions, registration and statistical reports, that is neither expected of nor would be granted by any other profession.

The present public health law, notwithstanding efforts to improve it, today practically pre-

scribes the compensation of the town or small village health officer, yet there is no limit to the amount of work he may be called upon to perform. It therefore assumes practically a contract practice with a ridiculous compensation in view of the possible time and labor involved, and yet because of the idea prevalent and *fostered by the medical profession,* of the sacredness and glory of *the practice* of medicine, the public assumes that this profession is *alone* obligated to these tasks.

In nearly all towns and city districts, those people who are too poor to afford medical aid (and usually regardless of whether deserving or otherwise), such aid is furnished by the poor authorities by sending some medical attendant whom they have hired by contract to do an indefinite amount of service for a definite fee. I have yet to meet the first physician who would admit the justness of this method, yet the financial consideration in this sacred and glorious profession of ours is usually so urgent as to practically compel the acceptance of the terms offered. The result of such a system is often the depriving of deserving people of any voice whatever in the selection of their medical attendant, as well as too frequently an inferior service on the part of such attendant as they get.

Do not misunderstand me. I am not attempting to "wash our soiled linen" in public, but I am trying to show some of the "soiled linen" in the public demands upon us.

The result of most of these conditions has been the making of better physicians in general. The trouble is not so much in the demands themselves as in the *fact* that the compensation for compliance therewith is not relatively nor actually commensurate.

Regardless of what may be said of the *profession* of medicine, I repeat my former assertion that the *practice* of medicine is today, by the public, made a commercial proposition.

As a rule, in a commercial transaction, the public is willing to pay a fair price when it realizes that it is getting a fair return for its investment, but so long as we as a profession assume the liability that our profession is by virtue of itself obligated to donate fifty per cent. of its labor to the public, just so long should we expect the public to assent to the assumption.

Drop that assumption, and educate the public to the truth that *it is impossible to meet the obligations to them that the rapid advance in medical knowledge has placed us under, until our compensation shall be such as will enable us to take advantage of these many and increasing aids in diagnosis, treatment, and above all, the prevention of disease.*

The expert who gives advice as to what to do and who to hire to place a sinking industry upon a new system and a profitable basis, is paid handsomely for so doing. He diagnoses the malady, prescribes the treatment, and tells who can best carry out that treatment. The general practitioner diagnoses the malady, he prescribes the treatment, and he advises as to the specialist who can best carry out that treatment. In this case, the specialist is paid handsomely, while the practitioner receives gratitude—perhaps.

I here quote from an extract in the *New York Medical Record,* on "the co-ordination of the specialties": "After all, if unity and co-ordination are to be continuously realized in the profession at large, someone must be found there particularly standing for them. There never has been, is not, and never will be other than one such agent. He is the family doctor. No matter what may be his crudities, weaknesses, and inconsistencies, he is the only material we have out of which to make a sovereign. And it is he who must save the day if medicine is to remain a profession instead of becoming an association or confederation or congeries of trades, and if order and symmetry are to prevail therein. If such be his high destiny let him get himself ready for it. The trouble with him has been that he has not apprehended his proper mission, or the real basis of his strength, worth, and dignity. He has been trying to do detail work in all quarters, when it is his business chiefly to oversee. He has been panting along after the specialists and succeeding merely in playing second fiddle to them, when it is his prerogative to marshall and command them. He has well nigh split his 'one small head' in his endeavor to be an authority in every thing, when from the very nature of the case, he can be an authority on nothing but humanity."

That is true, or rather it has been true, though the family doctor is fast waking up to the point where he can see this high destiny before him, but he is asking how can he get himself ready for this "high destiny" which conditions are forcing upon him, and which for the sake not only of the public but of the medical profession as well, he must do, unless the profession shall educate the public to a sufficient "hard coin" realization of the value of his services as shall make it possible for him to fulfill his destiny. One man can never accomplish this task of education. Many men might. *The medical profession can.*

In conclusion then, my contention is that the practice of medicine is commercialized, and with the medical profession at the small end of the enterprise.

A campaign of education of the public to the possibilities of medicine *has taught* the public much that has been good for it to know, and among other things, what it has a right to expect and demand from its medical attendants.

A campaign of education *should be waged* to educate this same public relative to the com-

pensation that is not only a fair return for the services demanded, but *is an absolute essential for the delivery of such services.*

CERTIFIED MILK OF THE MEDICAL SOCIETY OF THE COUNTY OF WESTCHESTER.*

By BERTRAND FRANCIS DRAKE, B.S., M.D.,
NEW ROCHELLE, N. Y.

THERE are at present three dairies producing certified milk under the supervision of the Milk Commission of the Medical Society of the County of Westchester, in the order of their application for certification as follows: (1) Bonnie Brae Farm, of Mr. A. D. Davis, situated in the Berkshires between Great Barrington and Sheffield, Mass., under contract to the Borden's Condensed Milk Co., New York; (2) Mahopac Farms, at Baldwin Place, N. Y., 4½ miles from Lake Mahopac, owned by the Willow Brook Dairy Co., Mount Vernon, N. Y., and (3) Chatham Dairy, on the outskirts of Chatham, N. Y., belonging to the Borden's Condensed Milk Co., and designated as Station A.

All three of these dairies are modelled very closely after Mr. Frank Stewart's "Brookside Dairy," near Newburgh, N. Y., that has served for several years as the standard in Equipment and Methods for the Milk Commission of the Medical Society of the County of New York.

Before taking up a description of these dairies, and the inspection work of the Milk Commission, a definition and brief history of Certified Milk should be given.

Certified Milk may be defined as milk that is produced under a legal contract between a medical milk commission and a dairyman, and conforming to its requirements. Milk to be certified must be clean and wholesome, and obtained from healthy cows, free from tuberculosis; kept in sanitary quarters, and given wholesome food and pure water. It is drawn from clean cows, by clean, healthy attendants, into clean receptacles, in a clean atmosphere, and it is handled in a clean manner, cooled quickly, and put into clean vessels, placed in cold storage, and iced in transportation when necessary.

The word CERTIFIED was registered in the U. S. Patent Office, October 16, 1904, under Registry No. 25368, to protect from being degraded by dairymen.†

Historically medical milk commissions and the production of certified milk in the United States may be said to have been started in 1890 by the Medical Society of New Jersey, when an appeal was made to the State for scientific supervision of all dairies within its limits, but this failed because of lack of funds. In 1892 the Milk Commission of the Practitioners Club of Newark, N. J., comprising physicians of Newark, Orange and Montclair, was organized, and April 13, 1893, adopted the title "Certified Milk" Medical Commission of Essex County, N. J. Dr. Henry L. Coit, Chairman, is justly honored as the Father of Certified Milk in this country.

The objects of this commission as set forth are of interest. "To establish correct clinical standards of purity for cow's milk, to become responsible for a periodical inspection of the dairies under its patronage; to provide for chemical and bacteriological examinations of the products, and the frequent scrutiny of the stock by competent veterinarians; to promote only professional and public interests."

The following were the three general requirements or standards for the milk: (1) An absence of a large number of micro-organisms, and the entire freedom of the milk from pathogenic varieties; (2) unvarying resistence to early fermentative changes in the milk, so that it may be kept under ordinary conditions without extraordinary care; (3) a constant nutritive value of known chemical composition, and a uniform relation between the percentage of fats, proteids, and carbohydrates.

In February, 1907, a national movement was started that resulted in the formation of the American Association of Medical Milk Commissions, June 3, 1907.

At a stated meeting of the Medical Society of the County of Westchester, held Tuesday evening, May 17, 1910, at White Plains, President G. A. Peck, M.D., New Rochelle; the Program consisted of a symposium on the summer care and treatment of infants and young children: (1) Certification of Milk, Dr. Henry L. Coit, Newark, N. J. (2) Modification of Milk, Dr. Henry D. Chapin, New York. (3) Treatment of Summer Diarrhœa, Dr. Charles G. Kerley, New York. As a result of this meeting, a milk commission was appointed, consisting of eight members, as follows: Drs. R. C. Eddy, Chairman, New Rochelle; C. C. Guion, New Rochelle; F. W. Shipman, Mount Vernon; S. F. Leo, Yonkers; S. B. Pray, Secretary, New Rochelle; C. W. Walker, Rye; J. W. Smith, Bronxville, and E. W. Weber, White Plains.

At the annual meeting of the Society, November 15, 1910, the Chairman of the Milk Commission, reported the appointments of Dr. B. F. Drake, of New Rochelle, as inspector of farms, and Dr. R. R. Morrison, of White Plains, as veterinarian. Subsequently Dr. E. T. Morrison, of New Rochelle, was appointed bacteriologist and chemist.

* Read at annual meeting of the First District Branch of the Medical Society of the State of New York, at Yonkers, October 9, 1913.

† Legalization of the term "Certified Milk" in the State of New York. "No person shall sell or exchange, as and for, Certified Milk, any milk which does not conform to the regulations prescribed by, and bear the certification of, a milk commission appointed by a county medical society organized under, and chartered by the Medical Society of the State of New York, and which has not been pronounced by such authority to be free from antiseptics, added preservatives, and pathogenic bacteria, or bacteria in excessive numbers. All milk sold as Certified Milk shall be conspicuously marked with the name of the commission certifying it."

Many milk commissions prefer not to have any contracts with their producers, claiming it is unnecessary. The producers understanding that if their milk does not come up to the requirements, they cannot sell it. Where there is no contract with the dairyman, it is customary for the commission to issue a circular of information concerning the production standards and general requirements of Certified Milk, as embodied in the following "Circular of Information concerning the Requirements of the Milk Commission of the Medical Society of the County of Westchester for 'Certified Milk,'" that resembles very closely that of the Requirements of the Milk Commission of the Medical Society of the County of New York for Certified Milk.

The Milk Commission, appointed by the Medical Society of the County of Westchester to aid in improving the milk supply of Westchester County, invites the cooperation of the milk dealers and farmers in attaining that end.

The sale of pure milk is of advantage to those furnishing it as well as to those who use it. The Milk Commission has undertaken to assist both the consumer and producer by fixing a standard of cleanliness and quality to which it can certify, and by giving information concerning measures needful for obtaining that degree of purity.

The most practicable standard for the estimation of cleanliness in the handling and care of milk is its relative freedom from bacteria.

The Commission has fixed upon a maximum of 30,000 *germs of all kinds per cubic centimetre of milk** which must not be exceeded to obtain the indorsement of the Commission. This standard must be attained solely by measures directed towards scrupulous cleanliness, proper cooling, and prompt delivery.

The milk certified by the Commission must contain not less than four per cent. of butter fat on the average, and have all other characteristics of pure, wholesome milk.

Milk must not be sold as certified beyond the day on which it reaches any city or village in Westchester County. No milk may be shipped as certified which will be delivered more than 36 hours after production.

Dealers.—In order that dealers who incur the expense and take the precautions necessary to furnish a truly clean and wholesome milk may have some suitable means of bringing these facts before the public, the Commission offers them the right to use caps on their milk jars stamped with the words: "Certified by the Milk Commission of the Medical Society of the County of Westchester." The dealers are given the right to use these certificates when their milk is obtained under the conditions required by the Commission and conforms to its standards.

In accordance with a law passed at the last legislature, the word "Certified" may be used on the cap only when accompanied by the name of the Society which certifies it.

The tin sealed cap, authorized by the Commission, must be used on all the certified milk passing through the hands of dealers selling milk other than the certified. These caps are sent by the makers only to the farm where the milk is bottled.

The name of the farm from which the milk comes must appear on either the paper cap or the tin cap.

Each bottle must be dated on the date of bottling, or date to be sold.

The Milk Commission looks to the dealers for its fee for milk examination as provided in Section II.

The dealers are to furnish deep, covered boxes for the certified milk.

The required conditions are as follows:

1. The Barnyard.—The barnyard should be free from manure and well drained, so that it may not harbor stagnant water. The manure which collects each day should not be piled close to the barn, but should be taken several hundred feet away. If these rules are observed, not only will the barnyard be free from objectionable smell, which is an injury to the milk, but the number of flies in summer will be considerably diminished.

These flies are an element of danger, for they are fond of both filth and milk, and are liable to get into the milk after having soiled their bodies and legs in recently visited filth, thus carrying it into the milk.

Flies also irritate cows, and by making them nervous reduce the amount of their milk.

2. The Stable.—In the stable the principles of cleanliness must be strictly observed. The room in which the cows are milked should have no storage loft above it; where this is not feasible the floor of the loft should be tight, to prevent the sifting of dust into the stable beneath.

The stables should be well ventilated, lighted and drained, and should have tight floors, preferably of cement, never of dirt.

They should be whitewashed inside at least twice a year, unless the walls are painted or are of smooth cement finish which can be washed frequently.

The air should always be fresh and without bad odor. A sufficient number of lanterns should be provided to enable the necessary work to be properly done during the dark hours. The manure should be removed twice daily, except when the cows are outside in the fields the entire time between the morning and afternoon milkings. The manure gutter must be kept in a sanitary condition. All sweeping of dry floors must be completed before grooming of cows is begun. All sweeping must be completed before the last washing of udders is begun.

There should be an adequate supply of water, warm and cold, and the necessary wash-basins, soap and towels.

3. Water Supply.—The whole premises used for dairy purposes, as well as the barn, must have a supply of water absolutely free from any dangers of pollution with animal matter and sufficiently abundant for all purposes and easy of access.

4. The Cows.—No cows will be allowed in the herd furnishing certified milk except those which have successfully passed a tuberculin test. All must be tested at least once a year, by a veterinarian approved by the Milk Commission. All tuberculin tests must be arranged through the Milk Commission, or with the approval of the Milk Commission, and must be so planned that the representative of the Milk Commission may be present throughout, and be accommodated at or near the farm, in the same way as the doctor who makes the test, if the Commission so desires.

The farmer for whom the test is made must make sure that a chart of each test is furnished to the Milk Commission to keep on file within a week after the test, whether it be a private or State test. The Milk Commission reserves the right to decide what cows shall be kept in the herd.

Any animal suspected of being in bad health must be promptly removed from the herd and her milk rejected. No cow whose udder is imperfect shall be allowed in the certified herd, nor shall the milk from an udder in any way diseased be put in the certified milk, as long as any disease exists. Do not allow the cows to be excited by hard driving, abuse, loud talking, or any unnecessary disturbance.

Feed.—Do not allow any strongly flavored food, like garlic, to be eaten by the cows.

* The standard for cream in all cases where it is certified is 25,000 per cubic centimetre.

When ensilage is fed, it must be given in only one feeding daily, and that after the morning milking, and the full ration shall consist of not more than 20 pounds daily for the average sized cow. When fed in the fall small amounts must be given and the increase to the full ration must be gradual.

Corn stalks must not be fed until after the corn has blossomed, and the first feedings must be in small amounts and the increase must be gradual.

If fed otherwise, ensilage and corn stalks are liable to cause the milk to affect children seriously.

Cleaning.—Groom the entire body of the cow daily. Before each milking wash the udder with a cloth used only for the udders, and wipe it with a clean, dry towel. Never leave the udder wet, and be sure that the water and towel used are clean. The tail should be kept clean by frequent washing. If the hair on the flanks, tail and udder is clipped close, and the brush on the tail is cut short, it will be much easier to keep the cow clean.

The cows must be kept standing after the cleaning until the milking is finished. This may be done by a chain or rope under the neck.

5. THE MILKERS.—The milker must be personally clean. He should neither have nor come in contact with any contagious disease while employed in handling the milk. In case of any illness in the person or family of any employe in the dairy, such employe must absent himself from the dairy until a physician certifies that it is safe for him to return.

In order that the Milk Commission may be informed as to the health of the employes at the certified farms, the Commission has had postal cards printed, to be supplied to the farms, and to be filled out and returned each week, by the owner, manager, or physician of the farm, certifying that none are handling the milk who are in contact with any contagious disease.

Before milking, the hands should be washed in warm water with soap and nail brush and well dried with a clean towel. On no account should the hands be wet during milking.

The milkers should have light-colored, washable suits, including caps, and not less than two clean suits weekly. The garments should be kept in a clean place, protected from dust, when not in use.

Iron milking stools are recommended, and they should be kept clean.

Milkers should do their work quietly and at the same hour morning and evening. Jerking the teat increases materially the bacterial contamination of the milk and should be forbidden.

6. HELPERS OTHER THAN MILKERS.—All persons engaged in the stable and dairy should be reliable and intelligent. Children under twelve should not be allowed in the stable or dairy during milking, since in their ignorance they may do harm, and from their liability to contagious diseases they are more apt than older persons to transmit them through the milk.

7. SMALL ANIMALS.—Cats and dogs must be excluded from the stables during the time of milking, and fowl at all times. No animals allowed in dairy.

8. THE MILK.—All milk from cows sixty days before and ten days after calving must be rejected.

The first few streams from each teat should be discarded, in order to free the milk ducts from the milk that has remained in them for some time and in which the bacteria are sure to have multiplied greatly. If any part of the milk is bloody or stringy or unnatural in appearance, the whole quantity yielded by that animal must be rejected. If any accident occurs in which a pail becomes dirty, or the milk in the pail becomes dirty, do not try to remove the dirt by straining, but put aside the pail, and do not use the milk for bottling, and use a clean pail.

Remove the milk of each cow from the stable immediately after it is obtained, to a clean room and strain through a sterilized strainer of cheese-cloth and absorbent cotton.

The rapid cooling is a matter of great importance. The milk should be cooled to 45°F. within an hour and not allowed to rise above that as long as it is in the hands of producer or dealer. In order to assist in the rapid cooling, the bottles should be cold before the milk is put into them.

Aeration of milk beyond that obtained in milking is unnecessary.

9. UTENSILS.—All utensils should be as simple in construction as possible, and so made that they may be thoroughly sterilized before each using.

Coolers, if used, should be sterilized in a closed sterilizer, unless a very high temperature can be obtained by the steam sent through them.

Bottling machines should be made entirely of metal with no rubber about them, and should be sterilized in the closed sterilizer before each milking, or bottling.

If cans are used, all should have smoothly soldered joints, with no places to collect the dirt.

Pails should have openings not exceeding 8 inches in diameter, and may be either straight pails, or the usual shape with the top protected by a hood.

Bottles should be of the kind known as "common sense," and capped with a sterilized paraffined paper disc, and the caps authorized by the Commission.

All dairy utensils, including the bottles, must be thoroughly cleansed and sterilized. This can be done by first thoroughly rinsing in warm water, then washing with a brush and soap or other alkaline cleansing material and hot water, and thoroughly rinsing. After this cleansing they should be sterilized by boiling, or in a closed sterilizer with steam, and then kept inverted in a place free from dust.

10. THE DAIRY.—The room or rooms where the utensils are washed and sterilized and the milk bottled should be at a distance from the house and the barn, so as to lessen the danger of transmitting through the milk any disease which may occur in the house.

The bottling room, where the milk is exposed, should be so situated that the doors may be entirely closed during the bottling and not opened to admit the milk or to take out the filled bottles.

The empty shipping cases should not be allowed to enter the bottling room nor should the washing of any utensils be allowed in the room.

The workers in the dairy should wear white washable suits, including cap, when handling the milk.

Bottles must be capped as soon as possible, after filling, with sterilized discs.

11. EXAMINATION OF THE MILK AND DAIRY INSPECTION.—In order that the dealer and the Commission may be kept informed of the character of the milk, specimens taken at random will be examined every two weeks by experts for the Commission.

The Commission reserves to itself the right to make inspections of certified forms at any time and to take specimens of the milk for examination.

The Commission also reserves the right to change its standards in any reasonable manner upon due notice being given to the dealers.

For purposes of convenience and record it is advisable to adopt some system of inspection that is practical and simple. This may be accomplished by means of percentage dairy score cards usually divided as follows: (1) Equipment, 40 per cent. (2) Methods, 60 per cent.

A very excellent example of this is the dairy report of the Division of General Sanitary Inspection of the Department of Health of the City of New York, with rules and regulations to be

observed by the dairymen in the care of cows and handling of the milk.

Through the courtesy and assistance of the officials of this division, one of the best of their inspectors was delegated to visit and inspect with me the "Bonnie Brae Farm" of Mr. A. D. Davis, Great Barrington, Mass., November 15, 1910.

This farm comprises about 300 acres of high, rolling land among the Berkshire hills. The hygienic and sanitary surroundings are excellent. The water supply is from concrete enclosed natural springs piped to the dairy buildings. The owner's house is situated on the hill above, with sewage and drainage from the house and stables into valley and stream at one side. The stable for cows, ice house, and dairy buildings, are modern in construction, well equipped, and healthfully located as to air, sunlight, and exposure, at a distance of 100 feet or more from the public highway.

June 23, 1911.—The new cow stable and milk house of capacity to produce 200 quarts of milk per day, was being built, with wire cable carrier from barn to milk house.

December 12-13, 1911.—Through the courtesy of the Milk Commission of the Medical Society of the County of New York, an opportunity was given to make an inspection of this farm with Mrs. C. H. Cocke, Dr. W. H. Park's assistant at the Research Laboratories, foot of East 16th Street, New York. Mrs. Cocke has been engaged in this work for the past ten years, and is the one to whom Dr. Park refers all applications for dairy inspection.

The new milk house is 100 feet from the cow barn, well constructed throughout, light and modern in all respects. A large pressure steam sterilizer is to be installed, and instead of the Davis bottling machine, with its rubber rings and complicated springs and filler construction, rendering almost impossible to clean and sterilize properly, a simpler, all-metal STAR bottling machine, made by the Creamery Packet Co., Albany, is to be substituted, conforming to our circular of requirements, and that of the New York Milk Commission.

"Mahopac Farms," Baldwin Place, N. Y., Willow Brook Dairy, November 28, 1911. Consists of about 360 acres of rolling farm lands, with frame residence at entrance directly on well graded macadam public road to Lake Mahopac (4½ miles) and about one-eighth mile from railroad station at Baldwin Place on the Putnam division of the New York Central & Hudson River R. R.

The Willow Brook Dairy has planned and equipped this dairy solely for the production of their Certified Milk.* The water supply is from concrete protected spring located about 200 feet diagonally across the road below, and is pumped by gasoline engine to reservoir 200-300 feet above in an old apple orchard on top of hill overlooking the cow stable, milk house, and barns.

Equipment.—The cow stable is located on elevated ground, with no stagnant water, hog-pen, privy, uncovered cesspool, or manure pit within 100 feet. The floors are of concrete, properly graded, and water tight. The cow beds and drops are also constructed of concrete, water tight, and the space beneath is clean and dry. The walls are of field stone exterior, concrete inside, and plaster ceiling with white enamel finish. King system of ventilation installed. Artificial lighting plant of acetylene gas with lava tip burners (Colt system). The windows are ample in size and number and protected by muslin screens.

Live stock other than cows are excluded from the cow barn, and immediate vicinity. There is no direct opening from the cow stable into the silo or grain rooms, located at opposite ends, with fireproof, all-metal roll drop doors for each. Separate quarters are provided for the cows when calving or sick. The cow yard is clean and dry, covered with cinders, and properly graded and drained. The water supply for the cows is unpolluted and plentiful.

The milk house is separate and has no direct opening into the cow barn or other building except the ice house, with sufficient light and ventilation. The milk is carried from the receiving, weighing, and straining room of the cow barn to the milk house, through swinging doors, by wire cable carrier, in metal, covered carrier pails, and emptied automatically by valve in the bottom, into receiving strainer of the cooling and bottling machine (Davis).

The milk house floor is of concrete, water tight, and walls of concrete and enamel finish. The windows are properly screened to keep out flies.

The milk pails are of smooth tin, open mouthed design, of about eight inch oval diameter, lately of improved pattern by the local manager, by adding one inch tin collar to four by six inch oval opening to protect from splattering of liquid matter, etc., by the cow micturating during the milking, and also act as a lip to favor emptying into the strainer without spilling.

The milking stools are of blue enamel metal, and are sterilized with the milk pails, special white milking suits, caps, and other utensils in large concrete sterilizing room made especially for that purpose, set in between the bottle washing and milk bottling rooms.

Methods.—The feeding troughs, platforms, and cribs, are well lighted and clean. All-metal James Patent shackles are used with chain throat latches. The ceiling is of smooth white enamel finish free from hanging straw, dirt, dust, or cobwebs. The walls and ledges are free from dirt, dust, manure or cobwebs. The floors and premises are kept free from dirt, rubbish, or

* Awarded bronze medal at meeting of the National Dairy Show, held at Chicago, October 22, 1913, with a total score of 94.8 per cent., with perfect score on bacteria count of 300 per c.c. Points scored against were minor ones, for odor of ensilage, etc.

decayed animal or vegetable matter. The cow beds are clean, dry, covered with fresh white pine wood shavings daily. Manure, liquid matter, and shavings of cow drops, are flushed out twice daily through large iron piping (6 inch) to protected covered concrete out-housed tank about 100 feet distant, at the end of old barn now used for storing hay in the loft, grain and feed, on main floor, and small basement stable for cows calving or sick; and thence pumped to tank wagon and spread on the fields daily.

The cows are in good flesh, apparently free of mange, eruption, scabs, and warbles (grubs), and consist chiefly of Holstein and Jersey strains. The long hairs are clipped short on the belly, flanks, udder, and tail. The cows after grooming are washed with solution of 1/10 of 1 per cent. cresoline (one of the creolin products) followed by sterile warm water, and wiped dry with sterile cloths.

All feed is of good quality, Unicorn Brand (gluten flour, barley, cotton seed meal, "midlings," etc.) being used, with hay and ensilage. No distillery waste or substance in a state of putrefaction being fed. The milking is done with dry hands. The fore-milk, or first few streams from each teat, are discovered in small sterile cups provided each milker. The clothing of the milkers consists of special one-piece white duck milking suit and skull cap to match, freshly laundried daily. Running water in enamel stand is provided in both cow barn and milk house, with sanitary roll paper towels and liquid soap. The milk is strained immediately after weighing, through two separate layers of sterile gauze for the milk of each cow into carrier pail and again strained before passing into cooling and bottling machine of the milk house. The milk is bottled at once thereafter by the operator in clean white suit and cap similar to the milkers, and packed with ice in wooden shipping crates in room adjoining. Natural ice produced on the farm or from Lake Mahopac when necessary, is used for cooling and refrigeration.

The milk utensils are rinsed with cold water immediately after using, and washed clean with alkaline soda solution, rinsed in clean water and sterilized with boiling water. The privy is modern and sanitary, with lavatory, urinal, shower bath, hot and cold running water, in small separate room, with concrete floors and ceiling of same material as in the cow barn, with which it is connected by swinging doors with anteroom vestibule opening into the cow barn and silo pits. Opposite is a small room with wire screen closets for the milkers working clothes, with wooden table and chair one of the milkers uses to shave the milkers twice a week. In this room also is the gasoline engine and galvanized iron compression tank for the vacuum cleaner used on the cow's backs, side, etc.

Chatham Dairy, Borden's Condensed Milk Co., Chatham, N. Y., Station A, October 17, 1912.—This dairy was formerly inspected by Dr. Harris Moak, of the Milk Commission of the Medical Society of Kings County, and is also inspected by Mrs. C. H. Cocke for the Milk Commission of the Medical Society of the County of New York. Designated as Station A, it is the first of the Borden's plants to produce Certified Milk. Earlville now supplies the Kings County district.

The farm and dairy buildings are situated on the outskirts of Chatham, in a high, rolling section. A short distance across the road from Borden's Milk Station No. 30, adjoining the tracks of the Harlem Branch of the New York Central Lines. The water supply is by pipe line direct from Chatham reservoir among the hills above, pumped from wells. The buildings are all of ample size, well lighted, and ventilated (King System), and sanitary throughout, situated above the road on the hillside with excellent drainage. Electric lights are used in all the buildings, and steam boiler in the milk house. All laundry work is done on the farm. Calves, etc., are sold. One blooded prize winning bull is kept in separate quarters for the herd.

Taking up more in detail the *equipment.* The cow stable is located on elevated ground with no stagnant water, hog pen, privy, uncovered cesspool, or manure pit within 100 feet. The floors of the cow beds and drops are of concrete, properly graded and water tight. The ceiling is of wood with cross beams, whitewashed, and apparently dust proof. The windows are ample in size and number, wire screened. Ventilation is by the King System. Live stock other than cows are excluded. There is no direct opening from the stable into silo. Separate quarters are provided for the cows when calving or sick. The cow yard is properly graded and drained. The water supply for the cows is plentiful and apparently unpolluted.

The milk house is about 150 feet distant from the cow barn. The milk is transferred by carrier pails on wire cable from the small weighing and straining room to the receiving and straining room of the milk house. The milk house is well lighted and ventilated, with concrete floors; interior painted white, and properly screened to exclude flies. The milk pails are of smoothly tinned metal and in good repair, with seams soldered flush, and of small mouthed design (Pierson model). Two large concrete chamber steam sterilizers are used for the milk utensils. Special white duck milking suits are provided with round caps. Separate suits for morning and evening milking.

Methods.—The cows were all in good flesh, free from clinging manure and dirt. Long hairs kept short on belly, flanks, udders and tail. Udders, teats and flanks, are washed with three waters; the first, an antiseptic solution of cresoline (1/10 of 1 per cent.), followed by two of warm water, and wiped with a clean damp cloth before milking. All feed is of good quality and

General view of the dairy buildings, showing, from left to right, Ice House, Milk House, Cow Barn and Stable.

Grooming the cows' backs, sides, flanks, tails, and udders by the vacuum dry cleaner.

Washing the cows' backs, sides, flanks, tails and udders, with 1/10 of 1% solution Cresoline antiseptic, followed by two washings of warm sterile water.

WILLOW BROOK DAIRY, MAHOPAC FARMS, BALDWIN PLACE, N. Y.

Wiring the outer cap on milk bottle.

View of the small Cow Barns and Silo Tank, building.

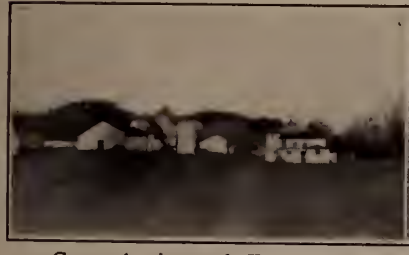
BORDEN'S CONDENSED MILK CO., CHATHAM DAIRY, CHATHAM, N. Y., STATION A.

General view of the Milk House and large Cow Barn.

View of the Milk House from the rear.

View of the large Cow Barn from the rear.

BORDEN'S CONDENSED MILK CO., CHATHAM DAIRY, CHATHAM, N. Y., STATION A.



General view of Farm, Buildings, Compost Shed at left and Dairy on right of picture, each 100 feet distant from Cow Stable.

Dairy—Straining room, showing stairs to receiving room. Tubular cooler and bottler, with metal valves (no rubber), and operated entirely from the outside.

A more distant view of Cow Stable, with semi-detached barns for feed, dry stock, etc., and Dairy at right of picture. The tower of Dairy is the receiving room, affording a gravity feed of the milk to the bottles.

BONNIE BRAE FARMS, INC., A. D. DAVIS, PRESIDENT, GREAT BARRINGTON, MASS.

consists of ensilage (20 pounds per day), Canadian pea (raised on the farm), hay and oat straw, and Union feed. Dried beet pulp from sugar beet industry, soaked in water over night, is used in place of the ensilage when the silo pits are emptied. In the receiving room of the cow barn the milk is strained at once after weighing, into carrier pails, through two layers of sterile gauze, and again through similar material in the receiving room of the milk house, before passing to cooler and bottling machine (Davis). The milk utensils are rinsed with cold water, washed clean with hot water and washing solution in the usual manner. The utensils are sterilized by live steam in the sterilizing chambers at 230 degrees F. after each using.

An interesting factor in the quantity of milk production of the cows is that the longer time standing in the stalls during brushing, washing, and milking (2½ to 3 hours) markedly lessens the yield of milk per cow, as shown by the same cows not so washed, etc.

That the demand for Certified Milk is rapidly growing is shown by the increased output of all three of these dairies. According to the latest revision of the U. S. Department of Agriculture, Bureau of Animal Industry, Medical Milk Commissions and Certified Milk, "About 125 dairies are engaged in producing certified milk, and the daily production is 25,000 gallons, an increase of 300 per cent. in five years. Expensive equipment is not necessary so much as unremitting attention to details."

The price of ordinary milk varies from 5 to 10 cents per quart, and averages 7¼ cents; certified milk 8 to 20 cents per quart. Certified milk therefore sells for an average of 5 cents per quart more than market milk. That certified milk is worth this extra cost is abundantly proven by the increased welfare of infants, and from the standpoint of decreased mortality and morbidity. Of the advantages of certified milk it may be said that it is free from the disease producing bacteria, and all other germs are reduced to a minimum. It is free from high acidity and pathogenic germs which lead to stomach derangements, and kindred troubles. The customer can always depend upon the milk coming from the same herd of cows, subjected to the same treatment, and having the same quality. Furthermore the fat content is guaranteed not to vary outside of narrow limits; hence the milk is always of good quality. Cleanliness and cold are the only preservatives used, and it is a safe food for infants and people with delicate digestion. It is the natural product of the cow, and has not been subjected to any treatment that affects its digestibility or changes its character. It is reasonably free from foreign odors and objectionable flavors.

The production and sale of certified milk will probably never exceed more than a small portion of the total milk consumed; but it is reasonable to expect that the demand for this class of milk will steadily increase, not only for infants, but for those who appreciate a good product and want the best.

In conclusion it is earnestly hoped that more county medical societies may take up this direct method of supervising their milk supply through the certification by regularly appointed milk commissions of the deserving dairymen making application for the production of certified milk.

REFERENCES.

Clarence B. Lane. Medical Milk Commissions and the Production of Certified Milk in the U. S. Washington Gov. Print. Off., 1908. U. S. Dept. Agricult. Bureau Animal Indust.

Henry L. Coit. Clean Milk and its Economic and Medical Relations, with Special Reference to Certified Milk.

Ibid. A plan to Procure Cow's Milk Designed for Clinical Purposes.

Ibid. Report of Committee on Cow's Milk to the Medical Society of New Jersey, etc.

SOME PHASES ON THE TREATMENT OF STRANGULATED HERNIA.*

By FREDRICK FLAHERTY, M.D.,

SYRACUSE, N. Y.

STRANGULATED hernia is one of the emergencies arising in the practice of medicine, which demands prompt and intelligent treatment if the patient's life is to be saved, and yet the laymen, and not a few general practitioners, believe that the surgeon is only too anxious to operate. It is not an unusual occurrence to have cases sent into the hospital with a history of a hernia having suddenly become unreducible, where one or more physicians have been laboring for several hours, with the patient under an anæsthetic, in the vain attempt to reduce it, finally, being unable to reduce it, send the patient into the hospital for operation as a last resort. Unfortunately many cases diagnosed as strangulated hernia, become spontaneously reduced.

As, for example, I was called to see a case with a physician last March, who stated that the man had had hernia since a boy, while raising a window it suddenly came out. He and another physician had had him under chloroform for some time. There was a small right inguinal hernia, hard and stony to the touch, about the size of an ordinary hickorynut. I advised immediate operation. He was transported across the city in the ambulance and an enema was given on entering the hospital. When I arrived at the hospital the hernia had reduced, probably the jolting in the ambulance or the enema produced the favorable effect.

Again I have seen more than one case of strangulated hernia placed on the operating table and after thorough narcosis the hernia suddenly

* Read at the Central New York Medical Society, at Auburn, October 30, 1913.

be reduced. These are not unusual experiences and undoubtedly every surgeon has his share of them. It is unfortunate as I have already stated, because it gives those present an opportunity to state that the operation was unnecessary. To this I want to take issue, with one exception, and that is unless the patient's general condition is such that he can not stand an operation any operation performed on a patient for the radical cure of a hernia which has been strangulated and suddenly becomes reduced before the operator has started his operation is a most justifiable operation. First, the patient is already anæsthetised and prepared for an operation. Second, his consent has been obtained for the repair of a condition, which is necessary for his future welfare. Again, if the operation is not completed and the hernia becomes strangulated, which it is quite likely to do, the condition may not be so favorable for the operation at a subsequent time, and finally every time a strangulated hernia is reduced without an operation, pathological conditions may be returned into the abdomen, which may cause serious trouble. Some of these conditions I will mention later.

Again the report of spontaneous reduction of a strangulated hernia gives the patient and his friends the idea that if the patient waits long enough without an operation that it will be reduced. Hence the fatal delay which is too often encountered by those who are called upon to operate for strangulated hernia. I would rather be guilty of operating a dozen hernias as strangulated, which might be reduced by some other means, than to allow one strangulated hernia to go on to the inoperable stage.

Taxis has been described as the manipulation by which a hernia may be reduced. Those of you who have had the privilege of seeing many cases of strangulated hernia operated, and have seen the small constricting ring binding so tightly about the incarcerated gut that it is with difficulty that the surgeon can insert a small director alongside of the contents of the ring, and have seen the bowels mahogany or blue-black in color, with the blood which is still remaining in the vessels coagulated, can easily appreciate the fallacy of anything but the most gentle manipulation and the possibilities for harm from so-called taxis. Yet taxis and many conservative methods are practiced upon cases of strangulated hernias too persistently and far too often.

One year ago last summer I was called to an adjoining town to see a case of strangulated hernia. The patient had had a right scrotal hernia for twenty years, the previous night it had become strangulated. Two other physicians were in attendance; we all argeed that there was a strangulation, and that an immediate operation was indicated. The operation was refused. The following day another physician was called, who advised placing the patient in a vertical position, with his head down, thereby allowing it to be reduced by gravity. Four days after my first visit I was again called in as a last resort to operate the man, which I reluctantly did and found a large strangulated omentum, which had become gangrenous with abscess formation. This was opened, the gangrenous tissue removed, and the man finally recovered.

By violent taxis not only is the diseased intestine liable to be ruptured, but the sac may be ruptured, and the strangulated intestine pushed back in between the muscles and the peritoneum, or what happened in a case which I operated this past summer may occur.

Mr. C., 57 years old, was brought into St. Joseph's Hospital, June 25th, about 10 A. M., with the following history: Always well and rugged, with the exception of a right inguinal hernia, which had existed since 1881. About 20 years ago, and again 10 years ago, it had come out, but he was able to have it reduced. Otherwise he has always been able to retain the hernia with a suitable truss. On June 24th, 2.45 P. M., the hernia suddenly came out, after about five minutes manipulation he was able, as he thought, to reduce it. It was very painful, sore and tender all night, after the supposed reduction he vomited three or four times. Upon examination I found him rigid and tender in the right iliac region, a mass could be determined in the right iliac fossa, slight swelling could be felt in the inguinal canal. The late Dr. Jacobson saw him with me, and agreed that an immediate operation was necessary. I opened the right inguinal canal and found a small sac, which was empty. After cutting the internal oblique muscle, I found underneath the muscle and between it and the peritoneum a mass as large as an ordinary orange. This I dissected out and on opening it found a coil of strangulated intestine, mahogany colored, constricted by a very tight internal ring. Hernia reduced enbloc or enmasse may occur and must always be considered when a strangulated hernia is apparently reduced, as occurred in the above case, with persistance of symptoms of intestinal obstruction.

Most cases of strangulated hernia give positive evidence of intestinal obstruction, besides the local sign of an unreducible hernia, but strangulation may exist without marked signs of obstruction, as for instance, we may have a large mass of omentum incarcerated, with shock, vomiting and the local signs present, and yet the bowels continue to move, until a peritonitis produces the obstruction and death.

The following case is an illustration of a comparatively rare form of strangulation, which gave us misleading symptoms: Mrs. E., 56 years of age, was seen by me at St. Joseph's Hospital with Dr. B. S. Moore, September 1, 1912. She had always been fairly well until four days previous, when she began to vomit, and had no passage of stool or gas in spite of cathartics and enemas. Examination showed her abdomen

slightly distended, with a doughy feeling. There was no palpable mass. Rectal examination showed a mass in the upper part of the pelvis. There was a small kernel noted in the left groin, not as large as an ordinary hazelnut, which the patient maintained had existed for a period of four or five years, and she was quite positive that it was no larger then than it had been for a long time. With the above data we were undecided as to the cause of the obstruction. Therefore an immediate operation was decided and I opened in the mid line between the umbilicus and the pubis and found a coil of small intestine caught at the internal femoral ring. I then opened over the small kernel above-mentioned and found a small piece of one side of the lumen of the intestine incarcerated in the femoral ring. Upon cutting the constriction I could easily withdraw a loop of small intestine on the side of which was a small gangrenous patch of bowel not any larger than a five-cent piece, which apparently had been caught at the time that obstructive symptoms first manifested themselves. This gangrenous area I enfolded with several Lembert sutures and returned the bowel into the abdomen, then closed both openings. The patient made a very prompt recovery.

The above was a true Richter's hernia, these are more apt to mislead the diagnostician on account of the very small size of the strangulated mass.

Every case of intestinal obstruction ought always to be thoroughly examined in both groins for these small kernels. The patient does not always realize he has a hernia, and even if found by the physician can easily be confused for a gland.

In conclusion I want to emphasize the fallacy of so-called taxis. The only safe and rational treatment for strangulated hernia is an early operation. That there are many atypical cases, the symptoms of which are often misleading and cause for dangerous delay.

Hernia *en bloc,* Richter hernia and other varieties, early operation is always a safe procedure. I have successfully operated on a child two years and nine months of age, and on a woman past 92 years of age for a strangulated hernia.

ILEUS DUE TO BANDS AND ADHESIONS.*

By G. F. COMSTOCK, M.D.,

SARATOGA SPRINGS, N. Y.

WHEN our secretary invited me to read a paper before you I must confess that I was somewhat at a loss to select a topic which would be of real interest, and to present a subject which had not recently been under discussion in this society. It happened that shortly after I received this invitation to speak I was called to operate upon a case of Ileus of unknown origin, and in which an Intussusception was suspected. At the time of operation a condition appeared which was wholly unexpected and of such interest that I choose to use it as a theme for my talk.

In brief the history of this case is as follows:

L. B., young female, aged 15, referred to me by Dr. Paul, complained on admission to the hospital of pain in the lower abdomen. The present illness may be said to have begun when she experienced sharp sticking pains, paroxysmal in character in the lower abdomen. The following day the stools were frequent in number, consisting of blood and mucus. Stools remained frequent for the following two days and patient's temperature fluctuated between 100 and 101. Five days after onset of pain the patient began to vomit, the vomitus consisting of olive-green curds. During the evening of this day the patient became greatly distressed with what she described as a feeling of something trying to pass through her bowels, but being unable to do so. No fecal material was passed during the previous four days. She was admitted to the hospital Wednesday morning, July 3rd. The family and previous history is unimportant except for the fact that the patient has always been more or less constipated. At the time of the operation the appendix showed a mild degree of inflammation but the interesting finding was that of a broad constricting band of connective tissue which partially encircled the ileum, forming a marked constriction and producing a condition of Ileus.

The condition of Ileus is a symptom-complex arising from the arrest of the passage of intestinal contents with or without interference of the blood supply of the gut. Its causes are either functional or mechanical. This paper will deal mainly with ileus due to mechanical causes such as bands and adhesions, and I will endeavor to bring out a distinction between the two.

Bands are chiefly due to development defects, rarely we find them the result of an operative procedure. The abdomen presents a fruitful field for defective and abnormal growth, since in the course of development various viscera not only undergo growth, but many of them tend to migrate. The factor of migration is in a large part responsible for the formation of abnormal folds of peritoneum which as the development continues take on new attachments, and in some instances constricting bands result. The evolution of a quadriped into a biped is another great factor, according to Martin, from whose recent reviews in comparative anatomy the following notes are obtained.

FIRST.—"That in lower animals all the viscera have loose attachments or mesenteries, and fall

* Read at the annual meeting of the Fourth District Branch of the Medical Society of the State of New York, at Fort Edward, October 14, 1913.

forward supported by the belly-wall like a hammock."

SECOND.—"That the liver, spleen, duodenum, kidneys, ascending and descending colon, no longer have long mesenteries which allow them to fall forward to find their ultimate support in the belly-wall, but in the erect position—these mesenteries have either been shortened or eliminated by direct fusion of the larger viscera with the posterior abdominal wall."

Our attention has been called to the existence of a distinct ligament found attached to the ileum on the under surface of its mesentery close to the ileo-cecal junction. To this condition the name of Lane's kink has been given. Dr. Huntington believes that it is the result of a development defect. In addition to the two vascular peritoneal folds which pass between the terminal ileum and the cecum and appendix, there is in addition a third fold of non-vascular nature which passes from the ileum opposite its mesenteric border down to the cecum. This fold undergoing abnormal changes or acquiring new attachments is responsible for the kink. The duodenum, appendix and sigmoid are not infrequently found to be the site of similar developmental defects.

In passing we need only to mention that interesting condition of internal hernia of the small bowel as the result of the formation of one of these bands. Unfortunately this condition is rarely recognized at the time of operation and it is only later at the autopsy table that the true nature of the trouble is ascertained.

Let us now consider the question of adhesions. These as you know are due entirely to peritoneal, inflammatory conditions. They tend to follow all abdominal operations to a greater or less extent. According to Woolsey the factor that determines the obstruction is dependent upon the adhesion of a loop of gut in some abnormal position. This fact may be deduced from the observation that peritoneal inflammations which escape operation and end in recovery almost never enter into the formation of obstructions, although many loops adhere. Whereas after operations in which the intestines are roughly handled and are poorly replaced in the abdominal cavity obstruction is apt to result. These conclusions would justify the practice of floating the intestines into place with hot saline before closing the operative incision. Occasionally through pressure of an abcess there is an early obstruction which tends to increase with the size of the abcess. However the adhesions are a contributing cause and tend to present the intestines from escaping from the pressure of the abscess. It is also conceivable to have the adherent loop compressed between an abscess and some firm structure such as the abdominal wall. Of course the obstruction in this particular instance is readily relieved by the evacuation of the pus.

In a certain number of cases a personal idiosyncrasy to the formation of adhesions must be considered. Some observers have thought that this condition is more commonly found among women. In a discussion of post-operative obstruction Dr. Woolsey cites the following interesting cases: "In 1907 I operated on a young woman, age 19, for partial obstruction. This was the fifth operation for obstruction since an operation for appendicitis two years before. Here, in spite of the removal of the appendix there were many adhesions causing the angulation of two or three loops of small intestines without producing complete obstruction. The attempt was made with the use of Cargile membrane and omental grafts to prevent the adhesions reforming, but I heard of her a few months later as being again in a similar condition and suggested the use of fibrolysin. I have also seen two young men who have been operated upon several times for obstruction following appendectomy. They both presented symptoms of obstruction with very great distention, but refused further operation. One was partially relieved by repeated enemata. Brewer has also reported a case in which there had been eleven laparotomies, six of which were for obstruction."

DIAGNOSIS OF INTESTINAL OBSTRUCTION.

The diagnosis of intestinal obstruction due to constricting bands is not difficult, but because of its rarity is not frequently thought of as a possibility. In the absence of any history of a laparotomy or of a peritoneal inflammation and with the story of years of constipation growing worse, particularly in a young person, such a condition is a strong probability. In the instance of my case cited above, there was an added symptom of the passage of bloody mucus with increasing frequency.

Adhesions are the most frequent cause of intestinal obstruction and such a condition may be readily suspected if any of the following symptoms present themselves.

The chain of symptoms, whether the causative agent is a band or an adhesion, is essentially the same although a distinction may be made. The symptoms occur usually in the following order: The patient is seized with a sudden pain, colicky in character, and with frequent exacerbations. The pain may be localized and would suggest the site of the obstruction, or may be very diffuse. The character of the pain is to some extent governed by the cause, and in a non-inflammatory obstruction, such as a band, is paroxsymal and colicky, due to the peristaltic waves coming on as the wave gets near the obstruction. As the attacks increase in frequency the gut becomes paralyzed. In an obstruction due to an inflammatory condition the pain is apt to be much more localized, continuous and more severe. It is increased by palpation.

The inability to pass gas or feces is a cardinal symptom, though stools will often continue to pass until the gut below the obstruction is empty.

Distention of the abdomen is rapid or slow, depending on the site of the obstruction. When the small bowel is affected it is usually acute, and the distention is present in the epigastric region. Colon obstruction follows somewhat the outlines of the colon. You will all recall the excellent diagrams of intestinal patterns illustrating one of Osler's early articles on the diagnosis of intestinal obstruction.

Vomiting occurs early or late according to the cause and location of the obstruction. In non-inflammatory causes the vomiting is late and less severe, while in an inflammatory one it is usually early and persistent. Fecal vomiting is a late symptom but should never be waited for in order to make a diagnosis. Cases have been cited in which fecal vomiting has occurred within the first twelve hours. These cases are usually very acute and the obstruction of an inflammatory nature.

Tenderness may be elicited in the region of the obstruction in both causes. The pulse may be nearly normal or may be slightly increased, but of moderate, low tension. The temperature is usually normal at first or may even be subnormal, later to show moderate elevation. The occurrence of indican in the urine has been much overrated, and is of little help in making the diagnosis. The white blood cell count shows slight fluctuations above the normal.

While it is desirable to locate the site of the obstruction this is often a matter of guess-work. The presence of an old abdominal scar is often helpful as a possible site of an obstruction, but the position of the first pain and tenderness together with the beginning of the distention are more reliable guides. Where intestinal patterns present themselves the direction of the peristalsis and character of the same is of great service in differentiating between the large and small gut. Statistics help in that 85 per cent. of all cases of post-operative intestinal obstruction have been found in the small intestine, mostly in the terminal six inches of the ileum. Digital examination and the use of the proctoscope will often rule out obstructions low down in the sigmoid.

Treatment.

Treatment resolves itself into prophylaxis and treatment. In the case of intestinal bands prophylactic measures are obviously of little importance, but much can be done to prevent the formation of post operative adhesions. Every one grants the great importance of an early diagnosis in all inflammatory conditions of the peritoneum and especially so in the case of appendicitis. Whether or not the operation is done in the acute stage or in the interval, the operation should not be delayed for any great period after the acute stage in order to prevent the formation of adhesions. It is well to obviate the use of drains as they are notably prolific producers of adhesions.

The technique of the operation is the next greatest factor, special care should be exercised to avoid the drying of the gut through exposure to the air. The use of any irritating substance whether antiseptic or not should be avoided. When the condition demands the use of a drain, especially if the drain is to remain for any length of time in the abdominal cavity, one must pay particular attention in his choice of material for the drain. I have met with most success with gauze drains covered with rubber tissue—these drains are popularly known as cigarette drains, and are to be removed after 24 to 48 hours. The position of the drain is of prime importance, and one should make it a rule that wherever possible at least one side of the drain should be in contact with the parietal peritoneum.

Dense adhesions are very prone to form over areas denuded of peritoneum. Any such area should be carefully covered whenever feasible by a peritoneal suture or an omental graft.

Perhaps the greatest prophylactic measure of all is the preservation of rigid asepsis at the time of operation with as little handling of the intestines as possible.

In cases of partial obstruction, operative procedures are imperative as any palliative measure meets with little success. The site of the obstruction being determined, incision is made over it, bands or adhesions are severed between ligatures and conditions of angulation or volvulus corrected. Should there be any question of the viability of intestinal tissue the affected portion is to be covered with intestinal pads, wet with hot saline. With the return of proper circulation within a reasonable length of time and in the absence of any line of demarcation or evidence of necrotic areas, the operation may be terminated. If any evidence of necrosis be present the affected area is resected, and an end to end anastomosis be performed. The formation of an artificial anus should not be resorted to unless the condition of the patient absolutely demands it.

BIBLIOGRAPHY.

1. Woolsey, *Surgery, Gy. and Ob.*, June, 1910.
2. Campbell, *N. Y. S. Journal of Medicine*, Sept., 1911.
3. Souther, *Lancet Clinic*, Cincinnati, 1910.
4. Martin, *Jour. Am. Med. Assoc.*, 1911.
5. Mayo, *Surg. Gyn. and Obs.*, 1911.
6. Brown, *Surg. Gyn. and Obs.*, 1911.
7. Colt, *Lancet, London*, 1911.
8. Hawkes, *Annals of Surgery*, Feb. 1909.
9. Maury, *Jour. Am. Med. Assoc.*, Vol. LIV.
10. Peck, *Annals of Surgery*, 1904.

DIFFERENTIAL DIAGNOSIS OF THE PARALYSES OCCURRING IN EARLY LIFE.*

By HENRY A. GRIBBON, M.D.,

POUGHKEEPSIE, N. Y.

THIS title closely adhered to would mean the compilation of a fair sized book.

It is my purpose, rather, to formulate a working guide in the diagnosis of those conditions with which the pediatrician is most often confronted. We may, therefore, limit this discussion to paralyses of the extremities and eliminate at the outset the familiar group and the muscular atrophies on the ground that those cases are slowly progressive and are diagnosed long before complete loss of function takes place.

Let us view the subject from the standpoint of symptomatology. We have, roughly, three main groups of extremity paralyses:

The pseudo palsies, the spastic and the flaccid.

Among the pseudo palsies, perhaps the most common conditions are the immobilities due to pain. Injuries to bones, joints, and muscles will often simulate paralysis, polyarthritis and osteomyelitis among the inflammations and scurvy and rickets among the diseases.

The pain paralyses are positively differentiated by single points of tenderness, evidences of local injury and the ability to move fingers and toes. To show the importance of considering the true and false palsies together, I may mention a case of poliomyelitis that was considered to be acute rheumatism by one of our most able men. One of my own patients suddenly developed scurvy after but one week's sterilized feeding and it was only the femoral tenderness that convinced me of its true nature.

The false paralyses of rickets may be differentiated by the fact that motion is not absolutely lost and by the other stigmata of this disease. We have also an apparent flaccid paralysis with no loss of reflex, an anomaly in itself.

The general muscular relaxation present in mongoloid, cretin and amaurotic family idiocy may give rise to suspicion of paralysis and, indeed, this sometimes occurs, and as will be noted hereinafter, microcephalus and other cerebral defects are often associated with paralysis of the spastic type.

The second or spastic group is well illustrated by the cerebral palsies.

Rigidity of the extremity involved, exaggeration of the deep reflexes, no reaction or degeneration and no atrophy, are symptoms common to all types and are distinctly opposite to the symptoms of the flaccid type.

In general, spasticity means cerebral lesion or lesion of lateral or posterior tracts of cord.

Flaccidity means anterior cord disease or peripheral nerve lesions.

The cerebral group may be hemiplegic, paraplegic or diplegic, very rarely monoplegic.

The classification of Sach's, acording to the time of onset, is a distinct aid in diagnosis.

The prenatal form due to defects and intrauterine injuries, is best known as Little's disease and are commonly paraplegic or diplegic with characteristic cross-legged progression.

This term also includes cerebral palsies due to birth injuries.

The acquired form may be due to hemorrhage, embolism or thrombosis and occurring later than the prenatal and birth palsies is more likely to be hemiplegic.

There is also the acute form of meningoencephalitis which gives rise to same symptoms.

Its beginning is usually stormy, with fever, coma and convulsions. It is not easily distinguished from acute poliomyelitis at the outset but later the characteristics of each type show the true condition.

The spinal type of spastic paraplegia while having the same general symptoms is differentiated by the fact that it is distinctly hereditary, comes on later than the eighth year, is slowly progressive, lacks the mental deficiency so common in the cerebral palsies and has no history of birth-trauma or convulsion. Other lesions giving rise to spasticity are cerebral tumor, abscess and cyst.

These may be differentiated by the signs of pressure, headache, vomiting and ocular signs. The nature of the tumor may only be found by a process of exclusion and the employment of test reactions.

The spastic paralyses due to cord lesions may be grouped under injuries, inflammations and diseases.

Under injuries we may include traumatic hemorrhage, fractures of vertebræ and compression due to spinal caries.

Myelitis is the type of inflammation, tumor, tubercle and gumma of the disease.

Taking myelitis as the type, we have, besides the spasticity, the positive signs of sensory disturbance, sphincteric involvement and involuntary spasmodic twitchings as elicited by slight irritation of the paralyzed part.

These symptoms are pathognomonic and serve at once to distinguish myelitis from the cerebral spastic group, on the one hand, and from peripheral neuritis on the other, for if the myelitic lesion is in the inferior cervical region there is arm flaccidity with the leg spasticity.

The other conditions grouped under cord lesion will have similar symptoms to myelitis, depending on the duration of the affection.

Suddenness of onset is the most important factor in differentiating hemorrhage of the cord. History of traumatism in vertebral fracture, Pott's disease by its gradual development, radiating pain, tenderness of spinous processes and finally deformity.

* Read at the annual meeting of the Medical Society of the State of New York, at Rochester, April 29, 1913.

Tumors of the cord, while very rare, give rise to symptoms similar to myelitis but are more often unilateral and have radiating pains as another sign.

Tubercle and gumma must be differentiated by their respective reactions.

Syphilis of the cord while not nearly so frequent in the child as in the adult occurs often enough to merit mention.

It may have all the symptoms of myelitis, including sphincteric paralysis and trophic disturbances in addition to the spastic symptoms, but with this difference, that it involves the greater portion of the cord and the intensity of the symptoms is slight as compared with the extensiveness of the area involved.

Besides these spasticities there are some rare conditions which should be tucked away in our subconsciousness. Disseminated sclerosis with its characteristic tremor, amyotrophic lateral sclerosis, Friedreich's ataxia and hysteria are among these, but their discussion in a paper of this kind would be purely academic and will be omitted.

The third or flaccid group is made up of spinal and peripheral nerve lesions.

Flaccidity, atrophy, diminution of reflexes and change in electrical reaction are the cardinal signs that distinguish this group from the cerebral and spinal spastic group.

Anterior poliomyelitis as the type of the spinal must be distinguished from multiple neuritis as the peripheral type. This may be impossible in the early stage, for multiple neuritis may have an abrupt onset, and there may be severe pain in poliomyelitis while the general symptoms of flaccid paralysis will be present in both. Usually, however, the stormy, abrupt onset of poliomyelitis and its tendency to affect certain groups of muscles, as against the more gradual onset of polyneuritis, its pronounced sensory disturbances, and the symmetrical involvement will differentiate between the two.

In the subacute form of poliomyelitis with gradual onset the picture may be that of progressive muscular atrophy. Until retrogression it may be impossible to distinguish the true condition.

In Landry's paralysis, unusually rare in children, the rapidly ascending palsy and involvement of abdominal and thoracic muscles will be positive signs to differentiate it from both poliomyelitis anl polyneuritis although other flaccid symptoms are the same.

The obstetrical nerve palsies, upper and lower arm types, should present no difficulties in diagnosis. Occurrence at birth or shortly after distinguish them at once from spinal lesions. Flaccidity and monoplegic character from the cerebral palsies. They must, however, be differentiated from birth fractures.

Most of the data for this paper has been derived from the works of Sachs, Osler and Pfaundler. I am indebted also to: Rosenheck—"Paralytic Conditions of Childhood" (cerebral and dystrophic); Hubner—"Lesions of Cerebral Paralysis;" Clark & Taylor—"Brachial Birth Palsy and Others."

An interesting case is reported by Dr. Eleanor Jones in *Archives of Pediatrics,* January, 1906. A child of eighteen months became suddenly ill with fever and unilateral convulsions. Following this there developed a spastic paralysis of the leg with flaccid paralysis of the arm on the same side. The onset and hemiplegia was characteristic of cerebral type while the resultant paralysis simulated involvement of the cord. There was no explanation given. Rich, in the *Jour. Amer. Med. Assn.,* for July, 1912, reports a case of atrophic Little's disease.

I have been unable to find any other case reported. Both Little and his son speak of spastic conditions only.

TUMOR OF THE HYPOPHYSIS CEREBRI.*

By L. H. FINCH, M.D.,

AMSTERDAM, N. Y.

AMONG the various lines of scientific research during the past decade, no subject has received more attention than the role of the ductless glands. Undoubtedly the most important among these is the hypophysis cerebri or pituitary gland. However, in the study of these glands we must not isolate them, but rather consider them as closely interrelated, the failure of one to functionate having an important effect on all. When we stop to consider how the Creator has placed these glands, inaccessible to trauma; the absence of ducts, thus rendering infection less likely, the disastrous effect of removal or disease, we are led to believe that they exert a powerful influence over the mechanism of bodily functions, and their presence is an absolute necessity to life and health.

I regret that I cannot offer anything along the line of experimental research, but as so much has been contributed by clinical pathology, I have been led to report the following case in the hope that it may add one straw to the fast accumulating load of evidence in the study of the pituitary gland. I thought it might be of service to review briefly the literature on the pituitary as it stands at the present time.

History.—That the pituitary gland occupied a very important part in the human anatomy was taught by Vesalius. Then follows a long period of darkness and inactivity until 1838 when Rathke discovered its dual origin. In 1886 Pierre Marie associated acromegaly with

* Read at the annual meeting of the Fourth District Branch of the Medical Society of the State of New York, at Glens Falls, N. Y., October 8, 1912.

disease of this gland; Froelich in 1901 showed that at times tumors of pituitary gave rise to local symptoms rather than acromegaly. Then followed removal of tumor in human beings by Horsley, later by Schloffer; coincidentally the discovery by Oppenheim that tumors of the pituitary could be reproduced in radiograph. Since then there have been a host of observers who have contributed to the various sides of the subject.

Structure of the Gland.—The gland consists of two portions, a larger anterior part derived from the buccal ectoderm and shut off by closure of sphenoidal cartilages (this portion has at times failed to migrate leaving a pituitary bud in the naso-pharynx); a posterior part derived from the mid-brain which communicates with the third ventricle and remains connected by the infundibulum; a pars intermedia formed by apposition of two former portions and the epithelial covering of the posterior lobe. The anterior lobe consists of chromophile cells arranged in columns around thin walled blood vessels. It has no glandular ducts. The posterior lobe consists of neuroglia tissue and a few ependymal cells.

Physiology.—This is best understood by considering the two parts of the gland separately. The secretion from the anterior lobe is discharged most probably into the blood sinuses which traverse the gland. It has resisted extraction by water, glycerine or salt solution, or at any rate such extracts have proven inert when injected into animals, and have failed to influence cachexia produced by hyposecretion of gland. The secretion from the posterior lobe enters cerebro-spinal space by way of the channels in the par nervosa. "This secretion has been extracted and when injected into animals has given rise to polyuria, accelerated or retarded pulse, increased respiration, dyspnœa, and motor disturbances, symptoms characteristic of removal of gland." This seems rather strange, for the reason that removal of post lobe in animals has in a great many cases had no appreciable effect.

For many years there has been a great discussion as to whether removal of gland is compatible with life. On the one side have been such observers as Gemelli, Aschner, Ascoli, who have maintained that death following removal was due more to trauma and infection than to loss of gland. On the other side have been Paulssco, LeGran and Cushing, who have claimed that cases surviving operation were due to the fact that small portions of gland had been left. Cushing claims that anterior portion of gland is the essentially vital part. Horsley has held both sides, but during past years he and Handelsman came to the conclusion that complete survival occurs in some animals after removal of anterior lobe.

It is maintained by some observers that anterior lobe is closely associated with thyroid, while posterior lobe is with the adrenals. In animals, partial loss of anterior lobe has frequently caused definite disturbances in nutrition. In the very young there has been a persistence of infantilism, with no secondary sexual characteristics; in adults, a reversion to the infantile type with atrophy of the external genitals. Histological changes have been noticed in the thyroid and islands of Langerhans, the latter probably accounting for the glycosuria so often encountered in disease of the pituitary. There are possibly changes in the thymus, adrenals, ovaries, tests, atrophy of the latter two giving rise to great increase in adiposity observed in some cases. Most of the changes seen in disease of pituitary are due either to a hyper- or hyposecretion. Hypersecretion gives rise to cases of acromegaly, giantism, or adiposis syndrome; hyposecretion producing infantilism and atrophy of sexual organs.

Pathology.—Most common pathological condition is that of tumor, which effects chiefly anterior lobe. The class of tumors are generally adenomata, or Erdheims tumors. Growth in the posterior lobe are rare, only six having been reported. Only three have been reported in pars intermedia.

Symptoms and Diagnosis.—The most constant symptom is a bitemporal hemianopsia due to pressure on the optic chiasm, followed by choked disc. Then came symptoms from increase in intracranial tension, as headache, vomiting, etc.; symptoms of nutritional disturbance as infantilism, acromegaly, atrophy of genitals.

Diagnosis ought to be made easily in most cases on following (1) bitemporal hemianopsia; (2) choked disc; (3) nutritional disturbances; (4) radiograph.

Treatment.—DeSchweinitz has obtained some remarkable results with large doses of thyroid and inunctions of mercury in three cases. A few cases with the adiposis syndrome have apparently recovered by X-ray treatment. In majority of cases surgical intervention offers most. Through efforts of Kanavel, who has perfected operation, mortality has been greatly lessened.

Following is report of a case presenting the adiposis syndrome of Laennec.

Case.—A. C.; age, 9; nativity, United States; family history; negative as to alcoholism, syphilis, tuberculosis or nervous disease; previous health, good; no contagious diseases. In 1909 had a fall striking on head but no symptoms followed.

Present Illness.—In fall of 1909 parents noticed a gradual increase in patient's size and weight, associated with a ravenous appetite. This continued until past winter when child weighed 86½ pounds (average weight for child of nine being 57). Growth was evidently symmetrical, but mother noticed particularly, size of

abdomen and arms, the latter having circumference greater than that of child's father.

In 1910 there occurred attacks of vomiting, not preceded by fever or indigestion. Vomited easily without retching, but not expulsive in character. Under dieting and medication, attacks of vomiting became less frequent. During spring and summer of 1911 patient could not see as well as usual and became very somnolent. In December of past year complained of darting pains through right frontal region, which increased in frequency and severity. In January of this year distant vision was very much affected and her memory began to fail. At Easter time was unable to commit little poem. Attacks of vomiting became more frequent and severe and in February were expulsive in type.

Physical Examination, May 17, 1912.—General appearance; well nourished. Very large for age. Symmetrical development. Marked increase in adipose tissue. Heart, lungs, abdomen, genitals, negative. All special senses save sight, negative. Gait, that of blind. Attitude and station, normal. Reflexes—K. J., active, no knee or ankle clonus. Eyes, presented vacant stare; pupils dilated equal. Right, no response to light; left, sluggish. Vision in right, nil; greatly diminished in left; able to count fingers. Right fundus, marked choked disc; left, moderate. Urine, normal.

Subsequent History.—About week later there was gradual increase in severity of symptoms, occurrence of a steady rise in temperature, marked Romberg, occipital headache, retraction of head, irregularity of pupils. Marked Kernig, later a tonic spasm of right leg in extension. Death followed in three or four days from basal inflammation and pressure.

Autopsy.—Examination of brain only allowed. Cortex of brain showed congestion with moderate edema; intense at base; considerable thickening of dura over middle fossa. On removal of brain, tumor size of goose egg revealed; composed of solid and cystic portion. Lower solid portion rested in sella turisca and involved the optic chiasm. The cystic portion extended upward to basal ganglia, filling completely space between tempero-sphenoidal lobes. There was slight erosion and flattening of the sella tursica, infundibulum could not be distinguished.

On opening tumor, clear straw colored fluid escaped. Solid portion composed smaller part, calcareous in consistency. Inner lining of cystic portion studded with small calcareous granules.

Microscopic examination of specimen by Dr. Wilson of Amsterdam, and later confirmed at Harvard, showed granules to be psammomata or "brain sand," while mass resting in sella tursica an unquestionable endothelioma. No nervous tissue was present in specimen.

Whether growth was primary in the pituitary or secondary to a dural lesion, I am not prepared to say.

TREATMENT OF FRACTURE OF THE NECK OF THE FEMUR.*

By JAMES B. CONANT, M.D.,

AMSTERDAM, N. Y.

THE history of the treatment of fracture of the neck of the femur is interesting on account of the various methods that have been in vogue in the past and the large number of devices that have been employed.

The extended position may be traced back to Hippocrates.

Percival Pott, at the close of the eighteenth century, conceived the idea of relaxing the muscles of the thigh by flexing it upon a double inclined plane. His followers were Sir Astley Cooper, who added a tight band about the hips to keep the fragments in contact, and Nathan R. Smith, who modified it by suspending the apparatus anteriorly, and J. T. Hodgen, who made the support for the suspension over the foot so that the weight of the apparatus would afford traction.

Desault, a hundred years ago, put the extended position upon a rational basis. The foot was firmly bound to an outer splint which extended to the hip. Counter extension was accomplished by perineal bands. His followers were: Physick, who extended the splint to the axilla; Hutchinson, who added a notched block, over which the extending band of the foot was attached; Gibson, who adopted Physick's splint for both sides of the body, terminating in a foot board to which was attached the extension bands, fastened by a gaiter, while Luke Howe in 1824 extended by pully weight, fastened to the foot by a gaiter, and counter extended by perineal bands attached to the head of the bed. Daniels also used the same, but no general adoption of this principle took place until over thirty years afterward, when strips of adhesive plaster to which the pully weight extension was attached, were fastened on either side of the limb. The idea has been attributed to Dr. Swift of Easton, Pa. Counter extension by perineal bands had always been a source of annoyance on account of excoriations. Hamilton gave the credit to Dr. Van Ingen, of Schenectady, for the idea of elevating the foot of the bed and thus make the weight of the person's body act as counter extension. This idea was soon generally adopted. Although, when Dr. Guerdon Buck in 1867 described an apparatus, which has since borne his name, which had been in use in the hospitals in New York since 1859, it is interesting to note that in this first description, counter extension was secured by a strip of muslin enclosed in a one-inch rubber tubing which surrounded the perineum and was attached to the head of the bed. Buck used sand bags to immobolize the limb, while Volkmann devised his sliding splint.

* Read at the annual meeting of the Fourth District Branch of the Medical Society of the State of New York, at Fort Edward, October 14, 1913.

Esmark devised an apparatus to prevent eversion of the hip.

In 1869 Phillips advocated the use of longitudinal and lateral traction for fracture of the femoral neck. His apparatus consisted of the usual traction method to which was added external lateral traction upon the upper end of the thigh by means of adhesive plaster wrapped about the limb and terminating in a cord with pully and weight attached or hung over the side of the bed.

This method for years did not receive the credit it deserved. It has recently become popularized by Bordenheur, Maxwell and Ruth.

In 1900 Whitman reported a case of fracture of the neck of the femur in a child, which was treated by replacing the neck and fixing the limb in abduction. The idea of fixation in abduction for recent fracture of the neck of the femur was new. The position, however, had been used for other hip joint conditions, and back in 1873 Volkmann resected the head of the femur for disease, placed the neck in the acetabulum and fixed the limb in abduction, while Billroth reported using the same treatment after breaking down an ankylosed hip with a shortened limb.

The abduction treatment as described by Whitman consists of reduction by traction under anæsthesia, the thigh having been lifted to the proper plane, and the entire limb fixed with a plaster paris spica in the normal abduction angle as ascertained from the opposite hip. The advantages claimed for this method are:

The position turns the fractured surface of the neck downward to meet that of the head.

It makes the capsule of the joint tense and aligns the fragments.

It relaxes the muscles whose contraction tend to displace the fragments. It opposes the trochanter to the side of the pelvis and thus provides a mechanical check to displacement and prevents subsequent limitation of abduction as obtained by other methods.

A method advocated by Steinman and recently reported on by Gerster consists of the use of extreme extension. This is accomplished by transfixing laterally the soft parts and femur in its lower part with a steel nail, the projecting ends of which form the attachment for suitable traction. It is said to be of special service in fractures about the base of the neck. The advantages claimed are: Freedom from stiffness of the knee following traction by adhesive plaster. The possibility of application of thirty to sixty pounds traction without discomfort and that eversion of the limb can be prevented by fastening a bandage from the projecting end of the nail on the outer side to a bar overhead.

So much for the history, in brief, of the non-operative methods of treatment of fracture of the neck of the femur. The modifications of these methods have been numerous and varied, but the essential principles have been related. Considerable distinction used to be made between the intra-capsular and the extra-capsular fracture of the neck, but the site of fracture affected the prognosis more than it did the method of treatment of the lesion. Under the older extension methods the amount of traction varied with the apparatus and with the size of the patient's thigh. Before Buck's extension came into use, it was possible to obtain and maintain an extension force of scarcely ten pounds. With Buck's apparatus it was possible to exert a traction force of twenty-five pounds. Any greater amount was apt to injure the knee joint. There is scarcely a teacher to-day who is advocating extension alone for the treatment of fracture of the neck of the femur.

The end results of non-operative treatment of fracture of the femoral neck have been on the whole disappointing, with few exceptions. F. A. Stimson rarely expected attainment of function; Sir Astley Cooper expected fair functional use; Smith always gave an unfavorable prognosis; Wyeth gave a guarded prognosis. On the other hand Bryant remarked in 1899 that all hospital cases went out with good and useful limbs, while LeConte claimed that 80 per cent. of his cases of intra-capsular fracture went out with *functional* limbs. Bardenheuer, however, has claimed that the suitable treatment of fracture of the neck was the most difficult in the entire realm of fractures and also the one most unsatisfactorily treated.

The best figures upon the end results are as follows: Scudder reported in 1907 the end results in 16 cases. Only two had functional and useful limbs while the remainder used a crutch or cane or had disability in going up and down stairs. Ashurst and Newell in 1908 reported 58 cases by Buck's extension, Smith's anterior splint and longitudinal and lateral traction. Sixteen (29.5%) died during treatment. Of those who recovered, 21 were traced, perfect functional results in 5, no disability but limp in 8 more, making 62 per cent. useful limbs, marked impairment of function in 6, while 2 were incapacitated. Longitudinal and lateral traction had the best showing in comparing the methods used.

Walker reported in 1908 112 cases treated by the abduction method. Eighteen (16%) died during treatment. Fifty-two were traced. Ten were normal. Twelve used a cane, making forty-two per cent. useful limbs, while 30 (57.6%) were incapacitated.

Davis, last year, observed that longitudinal and lateral traction was best suited to the aged and the abduction treatment to the young, and he estimated that with non-operative methods in two years 40 per cent. of hips would be painless, another 40 per cent. would be much improved, while 20 per cent. would be unable to work.

One factor in the after treatment of fracture of the femoral neck upon which success or failure is apt to depend, is allowing sufficient time to

elapse before putting weight upon the limb. The older writers accepted "fibrous union" as the common outcome, yet functional use of the limb from twelve to fourteen weeks was begun as routine treatment. Frangenheim has demonstrated that ossification of connective tissue is not apt to take place within one year. On account of the frequent failure of direct osseous union, modern writers have advised a long period of time to elapse before bearing weight upon the limb.

The reasons why good union is not a common result in fracture of the neck of the femur are:

1. That while we can control the distal fragment, the proximal fragment, consisting of the head and small portion of the neck, is beyond our control and hence it is difficult to get good approximation.

2. As pointed out by Murphy, after fracture, both fragments readily undergo absorption on account of the peculiar blood supply to the bone, and the erosion of one fragment against the other.

3. The fracture is a common one in the aged who have a diminished osteo-genesis, and that following a union of the bone under the above faulty conditions the part is required to take a heavy strain, subjected to it, not in its long axis, but transversely or obliquely.

Operative Treatment.

"The *operative* treatment of fracture of the neck of the femur is indicated when conservative treatment has resulted in non-union or when the break is of such a character as to render this result highly probable" (Flint). A good radiograph is essential for a correct diagnosis. A number of different incisions are used to expose the hip joint. The three most in use are the anterior angular, the anterior vertical and the U-shaped incision encircling the great trochanter. The latter necessitates sawing off a part of the great trochanter with its attached muscles and is particularly adapted to cases of excision because of the subsequent use of the greater trochanter to form an artificial neck. Whatever incision is adopted the site of fracture is exposed by removal of underlying connective tissue or opening into the capsule of the joint and a good view is obtained by abducting and rotating outward the limb. Examination is then made to determine the vitality of the fragments. pseudo-arthrosis, amount of bony absorption and possibility of approximating the fragments. If the subject is young and there is vitality in the fractured ends, shown by bleeding when scraped and not too much bone absorption has gone on, pegging the hip is the best procedure. The fractured surfaces are freshened, brought into apposition by traction abduction and rotation and a bone peg or a nail is introduced through the trochanter from the outside and is extended through the neck into the head. Lund extends the nail similarly but through the head and into the acetabulum beyond. The capsule is sewed up, the soft parts are brought together and the incision closed, while an assistant maintains the limb in the proper angle of abduction, and a plaster spica is applied from the toes to the chest. But, if on the other hand, excision of the head is decided upon, the head is freed from its adhesions, pried from the acetabulum, the cotyloid ligament is cut and the head is removed. The procedure then will vary according to the local conditions. If the neck is long, it can be placed in the acetabulum forthwith. If short, an acetabulum can be reamed out of the ilium chipping away the lower edge, or the detached trochanter can be nailed to the end of the femur in the absence of the neck, making an artificial one, or a transverse osteotomy can be made at the base of the trochanter and the fragment tilted so that the neck can enter the acetabulum, chipping away the lower edge, or the detached trochanter can be nailed to the margin of the acetabulum to prevent a short neck from overriding, according to the method of Ganglophe. If the trochanter is not used in the osteoplastic work it is nailed to its normal site, the soft parts are brought together and the incision closed and the limb is fixed in a plaster spica, as after the pegging operation, in the angle of abduction best suited to maintain the bony parts in apposition and in the acetabulum.

A fenestrum should be left in the plaster for dressing the wound and arrangement made for applying traction to the limb, after either operation, and the latter should be used for the first few weeks. Murphy uses the abduction of both limbs by the travois splint and an extension force of twenty pounds on the affected limb. At the end of four weeks flexion of the knee is begun after removal of that portion of the cast, and at the end of eight weeks the patient is up on crutches, using a Thomas splint. One year is allowed to elapse before weight is borne on the limb in the pegged cases and six months in the excision cases without osteoplastic work done.

The elements of success in operative treatment of fracture of the neck of the femur are strict asepsis, familiarly with bone surgery in general and selection of suitable cases. It would be the height of folly to subject a patient, who had become bed ridden by three months of conservative treatment to the operative treatment, and expect to accomplish any bony union by these means. It is better to wait at least nine months after conservative treatment has failed before attempting operative treatment. At the end of that time an estimate can be made of the amount of absorption which the neck has undergone, which will determine the kind of operation best suited to the case and the patient will have gained some strength to enable him to bear the shock and invalidism which the operative method demands.

Nicolaysen's method of pegging the fragments without opening the site of fracture is not used to any great extent. It fails to secure the exact approximation that opening the site of fracture affords and lacks the benefit to be derived from freshening the surfaces of the bones. The peg itself adds but little strength to the part. It traverses a section of soft bone and soon becomes loosened. If it holds the upper fragment merely in contact its function has been fulfilled. If the peg is metallic it is very often removed subsequently, on account of irritation of the soft parts.

The end results of the open operation vary with the operator. On the whole they are satisfactory. The excision cases are apt to get around quicker and with less pain than the pegged cases. On the other hand they always have more limitation of motion. In fact ankylosis is aimed at in some excision cases, and if any motion occurs at all, it is accidental. In old ununited fractures it is considered best to excise the head either in the young or old.

The writer, within the past two years, has had and has been associated with seven cases of fracture of the neck of the femur. Not a sufficient time has elapsed to tell how good the end results will be in any case, but the bad results of two are already apparent. The youngest one of the series was 58, the oldest 84. Bucks extension was used on one with resulting non-union. One died with angina pectoris three weeks after the limb had been fixed in abduction. One had to have the spica removed four weeks after its application on account of its becoming loose and producing excoriations of the perineum. This was followed by traction in the abducted position and resulted in non-union in the patient 84 years old. One case of fixation in abduction promises to be a fair result with some shortening. In one case the abducted position was used without the plaster spica with longitudinal and lateral traction and the result promises to be excellent. One case was pegged and one excised and both promise good results. A specimen of the excised case is exhibited.

In comparing the relative merits of different methods of non-operative treatment, it seems that certain methods are suited best to certain individuals. Walker's idea for fixation in abduction for the young seems sound. For old or fleshy people it is different. There is always considerable atrophy about the thigh and hips. A spica that fits closely after its application is found to be quite loose two weeks afterward. The perineal portion alone then will prevent its riding upward. Constant pressure here will produce excoriations. A loosened spica will result in shortening. Manifestly it is impossible to keep track of and correct this when it is hidden by the plaster and not discovered until some time afterward, when the plaster is removed. Where frequent radiographs can be taken this, of course, can be obviated, but most of these cases are treated in the home where we have not the advantages of a well equipped hospital.

Quite as good results ought to be expected in the abduction treatment by maintaining this position, after reduction, by abducting both limbs with a median frame placed between the thighs. This has the advantage of allowing constant inspection and affords an opportunity for applying longitudinal or lateral traction as the case requires. This method worked out very well in a fleshy individual.

There is no doubt, however, that the absorption of the head and neck will result in non-union in quite a percentage of cases, in spite of every precaution and irrespective of the method of treatment used.

REFERENCES.

Medical and Surgical History of the War of the Rebellion, p. 343
Keen's Surgery, Vol. II, p. 231, Vol. VI, p. 183.
Medical Record, Vol. XII, 1877, p. 753-754.
Prin. and Prac. Surgery, Druitt, 1860, p. 246.
Science and Art Surgery, Erichen, 1873, Vol. I, p. 373.
System Surgery, Gross, 1872, Vol. I, p. 1027.
Text Book Surgery, Wyeth, 1889, p. 303.
Med. and Surg. Reporter, December 7, 1861, p. 220.
Med. Jour. Med. Sciences, 1873, p. 552.
Annals Surgery, February, 1900, Royal Whitman.
Annals Surgery, April, 1911, Royal Whitman, p. 489.
Annals Surgery, October, 1912, Davis, p. 622.
Annals Surgery, March, 1908, Davis, p. 472.
Annals Surgery, January, 1908, Walker, p. 84.
Annals Surgery, November, 1908, Flint, p. 729.
Annals Surgery, November, 1908, Ashurst and Newell, p. 748.
Annals Surgery, April, 1913, Murphy, p. 593.
Amer. Jour. Med. Sc., August, 1913, Gerster, p. 157.

DIAGNOSIS AND TREATMENT OF IRITIS.*

By R. L. CROCKETT, M.D.,
ONEIDA, N. Y.

IRITIS, of course, means literally—inflammation of the iris. Practically, however, in iritis there is also generally more or less involvement of the ciliary body, so it is difficult to say just when we have a simple iritis and when it is more properly irido-cyclitis on account of the intimate relation of the two structures.

The causes of iritis may be placed in two classes—the exogenous or external and endogenous or internal.

In dealing with the exogenous causes, the first and probably the most common is traumatism. Blows on the eyeball, penetrating wounds, burns of the eyeball, come in this division. The iritis arising from foreign bodies remaining for some time in the cornea and that resulting from a severe conjunctivitis or following a corneal ulcer

* Read at the annual meeting of the Fifth District Branch of the Medical Society of the State of New York, at Oneida, October 2, 1913.

may be considered as septic, being caused by micro-organisms. So we find iritis from external causes falls into two divisions—traumatic and septic.

The endogenous causes may be divided into metastatic and toxic. Among these are the cases which have been termed idiopathic—meaning really that the cause was illy defined or unknown.

The subject of metastatic iritis is a comparatively new one. It has been found that organisms like the streptococcus and staphlococcus, which produce abcesses and violent inflammations, are capable of producing a non-suppurative inflammation in the iris and ciliary body. In any suppurative disease, at times, the pus cocci gain access to the general circulation, and although they are generally promptly destroyed by the defensive agencies of the body, some may lodge in a tissue like the iris, where, while the soil is not adapted to the retention of their full virulence, yet they can live and produce an inflammatory condition, which, while not sufficiently intense to cause suppuration, may yet become a serious menace to the integrity of the tissue or organ. Of course, there is such a thing as a suppurative iritis, but fortunately that is rare, as panopthalmitis, and destruction of the eyeball quickly results.

Metastatic iritis may be caused by any germ capable of causing suppuration, and probably all of such germs have been found in different cases, but the organisms causing the great majority of cases are probably the streptococcus and staphlococcus, more frequently the latter. Metastatic iritis occurs in syphilis, tuberculosis, malaria, pneumonia, typhoid, gonorrhea, influenza and other diseases, and in these cases is apt to be caused by the organism of the disease, but even in these cases a secondary suppuration could furnish the exciting cause and the organism might be one of the pus cocci.

Toxic iritis is the other division of the endogenous causes. Under this division comes inflammations produced by poisons or toxins of different diseases.

The subjective symptoms of an iritis are generally quite marked. The pain is apt to be intense—it is a deep-seated pain, located in the depths of the eye and often extending to the temple and around the eye. Soreness is quite marked—the eye is very tender on palpation. Photophobia or great sensitiveness to light is common and is accompanied by increased lachrymal secretion.

The objective symptoms consist of injection and redness of the eyeball, especially in what is known as the ciliary zone, which is a belt of varying width just posterior to the sclero-corneal junction; change in color of the iris and contraction of the pupil.

The redness in the ciliary zone is often in mild cases the only objective sign and is caused by the engorgment and dilitation of the ciliary vessels which at this point pierce the sclerol coat.

The iris in severe cases becomes greenish in color and often differs very much from that of the normal eye.

On account of the engorgment of the vessels of the iris and the throwing out of exudate the pupil is contracted and sluggish, and if much plastic material be thrown out and the pupil has not been properly dilated by a midriatic, adhesions are liable to form, binding the iris down to the lens or even occluding the pupil altogether.

In a simple iritis the tension remains normal —if the ciliary body is affected, as is apt to be the case, the tension is lower than normal. These conditions serve to differentiate iritis from glaucoma—a soft eyeball, a contracted pupil, with muddy, greenish iris, a tender eyeball, with the redness most marked close to the cornea—as contrasted with an eyeball with a tension above normal, a dilated pupil, a steamy anæsthetic cornea, and a redness of the eyeball more marked back away from the cornea and involving, mainly, the larger blood vessels, as we have in glaucoma.

These points are very important for the general practitioner to remember, since many of the causes of acute glaucoma are treated as iritis with disastrous results.

Iritis has been classified as serious, plastic, tubercular, etc., according to the appearances, but it is better to classify according to the ætiology, as in the same case the appearances may vary—at one time it may be serous and another plastic, although a serous iritis is more apt to be associated with a streptococcic, and a plastic iritis with a staphlococcic infection.

The term, rheumatic iritis, has a large place in the literature, but it seems to me that the term is often a confession of ignorance. These cases are either a streptococcic infection, such as is often manifest in rheumatism, or they are toxic cases from the absorption of some toxins or leucomaines which are retained in the system.

The treatment resolves itself into two parts, symptomatic and curative. The symptomatic treatment has for its object the relief of pain and the preservation of vision, the latter of which, of course, is the most important, though it may not seem so to the patient at the time.

To counteract the contraction of the pupil and prevent adhesions taking place, it is necessary to dilate the pupil with atropin. Generally a 1 per cent. solution is sufficient, but it may be necessary to use as strong as 5 per cent. This dilitation of the pupil also causes a decrease in the engorgment of the blood vessels and by paralyzing the ciliary muscle as well as the muscular fibres of the iris, puts the eye in a state of rest and relieves the pain to a certain extent. Dionin, by its power of causing passive congestion, helps to relieve pain and favors heal-

ing. Hot or cold applications in suitable cases are of advantage in relieving pain.

In case the iritis is of traumatic origin, or the exciting cause is comparatively slight, these measures will prove sufficient also as curative treatment.

But, if the cause is constitutional, or the resisting power of the tissues is below par, it may be necessary to do more than this. In these cases, treatment resolves itself into the finding out of the cause and removing it, which many times is not an easy matter.

In syphilis mercury or salvarsan will give us a cure in a short time. But in many of the cases which persist week after week, it is not easy to find the cause and we must search carefully and persistently for it, and then may many times be disappointed. Every organ of the body should be considered and careful examination made. The urine should be tested chemically and microscopically, as the trouble may arise from a nephritis, either metastatically, or from the irritation of retained toxic product. The bladder is a fruitful source of iritis. I have seen a number of cases of metastatic iritis from cystitis, both staphylococcic and from B. Coli. Constipation may cause a toxis iritis. Disease of the nose or the sinuses connected therewith is often a cause of an iritis which persists until the condition is removed; and abscesses at the roots of the teeth are very frequent causes, in fact, any suppurative trouble is liable to produce a metastatic iritis.

Tubercular iritis is not as rare as some might imagine, and in these cases some of the tuberculin tests throw much light on the subject.

In rheumatic subjects, iritis is common and may be toxic, in which case eliminative treatment is indicated, or it may be a metastatic streptococcic iritis. In this connection, I would say that I have found a chronic streptococcic infection to be very favorably influenced in the majority of cases by the administration of streptococcic vaccine.

Iritis caused by staphylococci will also yield to injections of killed staphylococci, and the longer I use this treatment in such cases the more favorably impressed I am with it. Moreover, since so many of these cases are of staphylococcic origin, I am in the habit, if the patient does not improve in a reasonable time under ordinary treatment, and the cause defies all efforts at detection, of considering it as of staphylococcic origin and treating it as such—and in the majority of cases, the results bear out the assumption.

Before closing, I wish to speak of the so-called sympathetic opthalmia, or, as it is sometimes called, transferred opthalmia. This disease is pathologically a plastic irido cyclitis and generally resists all treatment and finally goes on to destruction of the vision and a soft, shrunken eyeball. The cause has been long traced to an inflammatory condition of the other eyeball, but concerning the manner of transmission, there have been theories without end.

The one which seems most plausible to me is that which considers it as of metastatic origin —that is, that the exciting organism gains access to the blood stream and is carried all over the body, but, having become adapted to the conditions obtained in the tissues of the iris and ciliary body, finds its most fertile soil there and effects a lodgment, producing the disease in the hitherto sound eye.

Illustrating this and suggesting a line of treatment for this most refractory disease is a case which came to my notice during the past year. Mr. R. presented himself at my office with an eye which had been injured and which had developed a panopthalmitis. The purulent condition was so extensive that it did not seem safe to enuecleate, so I removed the cornea and allowed the sloughing interior of the eye to separate, which it did in a few days. In about two weeks he left the hospital for his home with instructions to report in a week. I did not see him for about four weeks and then he came back with the stump in very good condition, with practically no inflammation, but with a plastic irido cyclitis in the other eye. The eyeball was quite soft and the pupil contracted, with many adhesions to the lens capsule.

At the time I operated on the eye, I made a culture from the pus and isolated a white staphylococcus, and, considering that it might be a good idea to have some stock vaccine from so virulent an organism, I made up a quantity. When he returned with the metastatic irido cyclitis, in addition to prescribing 2 per cent. atropin and 5 per cent. dionin, I administered a large dose of the staphylococcic vaccine. He returned in a week with the eye decidedly better and after three or four weeks of the treatment the eye was free from all inflammation. I saw him recently —the eye has had no inflammation since and the vision is about 20/30, which is quite good, considering that the pupil was considerably bound down by synechia when he came to me. In this case, I firmly believe, that the eye would have been lost without the bacterin treatment.

STREPTOCOCCIC THROAT DISEASE.*

By HALSEY JAY BALL, M.D.,

CORTLAND, N. Y.

THE City of Cortland has a population of about 11,500, and is joined by the village of Homer, which has a population of 2,695.

In these two places there were in two weeks from April 23 to May 7, 1913, 554 cases of an infectious disease, having local manifestations in the throat and neck, and producing a general systemic disturbance.

* Read at the annual meeting of the Sixth District Branch of the Medical Society of the State of New York, at Ithaca, October 21, 1913.

It is the purpose of this paper to give a history of some of these cases, and from a study of these and other cases, to describe a disease which is not mentioned in any text book or practice of medicine with which the writer is familiar.

Mrs. S. Age 21. Weight, about 100 pounds. Anæmic. Illness commenced on April 23rd with headache and nausea on rising in morning. Felt better after 4 p. m., and until the afternoon of the next day, when there developed sharp darting pains in the right side of *neck*. This occurred while out automobiling. The pain disappeared on returning home. Later in the evening, at 10 p. m., had a severe chill with a temperature of 103°, and general aching.

April 25th temperature 101 to 103° with considerable swelling on the right side of neck. This continued during the next two days, a tentative diagnosis of mumps being made. The patient's condition remained about the same; the patient sitting up a part of the time and walking about a little, until May 1st, the seventh day of the disease, when her temperature rose to 104°. During this time she had some redness of the mucous membrane covering the tonsil and soft palate, with slight grayish exudate, which failed to show the Klebs-Loeffler bacillus.

On the 8th day of the disease, a severe chill occurred lasting about 20 minutes, with nausea and severe headache and vomiting. Eyes quite red.

Ninth day, small mucous emesis and slight attack of epistaxis; also menstruating.

Tenth day, slight epistaxis.

Twelfth day, complained of aching in neck and in back.

On the 13th day, developed an arthritis at the metacarpo-phylangeal joint of the left index finger, and complained of ringing in the right ear.

On the 15th day, became very faint on being raised up in bed. On this day anti-streptococcic serum, 10 cubic centimeters was given in abdominal wall.

Sixteenth day, complained of lameness and pain in right shoulder.

Seventeenth day, gave 20 cubic centimeters of anti-streptococcic serum in abdominal wall.

Nineteenth day, complained of headache and pain in shoulder and left side.

Twentieth day, quite nauseated in the morning. Gave 20 cubic centimeters of anti-streptococcic serum in morning and 20 cubic centimeters again at night.

Twenty-first day, gave 20 cubic centimeters of anti-streptococcic serum.

On the 22nd day, patient complained of a good deal of lameness and pain in left side, which she thought was due to gas. This pain continued in left side until the 26th day of the illness, when a dry cough developed, with increased dullness of the heart area, and dullness over left lung with delirium.

On the 28th day, the pleural cavity was aspirated and 8 ounces of clear fluid was removed —that drawn into the hypodermic syringe being light straw color; but the fluid drawn into the aspirating bottle, reddish brown. The aspiration was followed by a drop in temperature to 99.8°. But it again rose to 103.8° on the second day after.

On the 30th day of the illness, patient complained of cramps in the left foot.

After removing the fluid from the left pleural cavity, the area of heart dullness was still marked and increased. Also dullness and bronchial breathing over the apex and back of left lung.

I should mention the fact that previous to this, there had developed a decided systolic murmur of pulmonary valve.

After aspirating, the dullness very gradually cleared up over the upper lobe of the left lung, but the lower lobe continued dull with bronchial breathing.

The patient gradually gained in strength. Tongue, which was originally heavily furred, became clean, and patient had some appetite, but still running a daily remittent temperature, with corresponding pulse.

The lowest temperature was in the late forenoon, and the highest temperature in the early evening.

The patient made a very slow but complete recovery; being ill about three months.

Mrs. W. Taken suddenly ill April 26th with chills and shooting pains in an enlarged gland at the angle of the jaw; intense general aching, head, back and limbs; great restlessness; could not keep limbs still on account of the intense aching, extending into fingers and toes. Throat not sore on the inside. Temperature, 102°. On the third day said throat broke and she felt better. After which she made an uneventful recovery.

Mrs. E. Illness commenced April 30th. Onset sudden, while eating dinner. Shooting pain in right side of neck; very severe and sharp, extending from neck to hand; followed in about two hours with chills, nausea and vomiting, with pain in epigastrium; followed, in a day or two, by soreness in throat and difficulty in swallowing; coughed and raised considerable thick mucus, streaked with blood. Right side of neck much swollen. Great thirst. Swallowing aggravating pain in neck. Very restless and nervous and unable to sleep.

After three or four days the left side became slightly involved.

On the sixth or seventh day, after vomiting, the patient developed a red spot in the center of the left upper eyelid. This rapidly increased in size, spreading over the entire face, closing both eyes, and a large bleb developed over each upper eyelid and on forehead and right cheek, followed by an ulceration of both eyelids.

Cultures made from the throat showed streptococci, but no Klebs-Loeffler bacillus.

Cultures from the eyelid showed the staphylococcus.

The patient's temperature ranged from 102° at the onset, to 105.6° on the 8th day, when 10 cubic centimeters of anti-streptococcic serum was given, followed by a fall to 99.8°, rectal, at 8 a. m., but returning to 105° at 8 p. m., when 40 cubic centimeters was again given, followed in morning by a decline to 100°, with an evening rise to 103.8°, when 40 more cubic centimeters was given, with a drop to 99° the following morning, when 20 more cubic centimeters was given. The streptococcic serum was then discontinued for four days, when the temperature again reached 103.5°, and 20 cubic centimeters was again given, followed by a sharp decline to normal the following day, and with no increase above normal thereafter. One hundred and thirty cubic centimeters of anti-streptococcic serum being given in all.

The pulse range corresponded with the temperature, being from 88 to about 120.

The respiration on the 5th day was between 35 and 40, and reached its heighest mark of 40 on the 10th day—the day after the first injection of the anti-streptococcic serum.

The restlessness and sleeplessness of the first few days was followed by drowsiness; the urine being scanty and the patient was very gassy.

The tongue was heavily furred at the onset, afterwards became dry, brownish red and cracked.

The treatment in addition to the anti-streptococcic serum mentioned, consisted in an application of a mask of ichthyol and boro glycerine 10 per cent., strychnine nitrate 1/100 every four hours. Urotropine grains v every eight hours until vesicle irritation was produced. Iodine, belladonna, ferum-phos and apis.

On account of the difficulty in swallowing, due to œdema of the throat, the nourishment was given in liquid form.

On the 26th, 28th and 29th of April, I was called to see four cases, in the same house, all of which were similar, having chills, headache, backache and soreness in a single swollen gland at the angle of the right lower jaw, and redness of the mucous membrane of the tonsil and its pillars.

These cases were all mild and run a course of about two weeks, leaving the patients weak.

These cases, with others, occurring at nearly the same time, the date of onset occurring in all of them within five days, and presenting symptoms so similar, yet differing from each in some symptoms; and presenting collectively a mixture of mumps, quinsy and diphtheria, and yet lacking the characteristic symptoms of each of these diseases, led the writer to believe that he was dealing with some new disease having a common cause, and probably of an infectious nature.

I was fortunate at this time in having called to my attention a brief description of an epidemic which had occurred in Boston about two years before, which was styled "septic throat disease," and which seemed to have come from the milk of a certain dairy supplying milk to the city of Boston.

Previous to reading this article, I had made inquiry of my patients and learned that they had a common milk supply, with nothing else in common. I therefore called up a number of the physicians of the city and asked them if they had seen similar cases, and what, in their judgment, was the cause, and requested them to ascertain the milk supply of their patients. The next day the physicians began reporting, and from their reports it appeared that fully 90 per cent. of the people afflicted with this disease were obtaining milk from the same milkman.

As soon as it was determined that we were having an epidemic of, what may be styled for want of a better name, septic throat disease, and that the symptoms all pointed to streptococcus infection, a veterinarian was sent to the farm where the milk dealer procured his milk. Samples of the milk were taken from the herd and also a physical examination made by the veterinarian.

As a result of this inspection and examination we found that there were two cows ill with mastitis or garget, and that the milk of these cows contained streptococci, similar, if not identical, to the streptococci found in cultures taken from the mucous membrane of patients suffering from this disease.

I was again fortunate in having a newspaper article attract the attention of Dr. Heazlit, of Auburn, and through him and Dr. Benjamin White, director of the Hoagland Laboratory, Brooklyn, N. Y., got in touch with Dr. Charles E. North, a consulting sanitarian of New York City, who came to Cortland for the purpose of investigating the epidemic, especially its cause.

Dr. North made a careful study of the epidemic. He also made a microscopic examination of the sediment from the milk of each cow in the suspected dairy. Cultures from the suspected cows, and cultures from the throats of eleven patients were sent, for study, to the Hoagland Laboratory, where it was demonstrated that the streptococci in four of the throat cultures were identical with the streptococci in the milk from the two suspected cows.

The following table also helps to fix the cause of this epidemic:

	Cortland.	Homer.	Total.
Population	11,504	2,695	14,199
Milkmen	14	5	19
Daily milk supply, all dealers....	4,200 qts.	700 qts.	4,900 qts.
X	300	35	335—7%
Throat cases, April 23d to May 7th	411	139	550

	Cortland.	Homer.	Total.
Throat cases using X milk	335	98	433—78.7%+
Throat cases using other milk....	76	41	117

X—The only milkman selling to both Cortland and Homer.

On May 4th a special meeting of the Board of Health of the City of Cortland was called and a resolution adopted compelling the milkman under suspicion to sterilize all utensils used in procuring, storing and delivering milk; and, also to buy milk from another farm.

An ordinance was also passed requiring all physicians in the City of Cortland, to report each and every case of septic throat disease; and also requiring the health officer to quarantine all cases. The order was passed May 9th, and only one new case was reported after the physicians were notified that the ordinance was passed. We are, therefore, confident that the measures adopted by the Board of Health were rsponsible for the sudden cessation of the epidemic.

The city of Cortland now has an ordinance requiring all milkmen to sterilize, daily, every utensil used in the procuring, storing and delivery of milk.

Streptococcic Throat Disease.

Synonyms.—Septic sore throat. Epidemic streptococcic glandular throat infection.

Definition.—An acute specific infectious disease, probably contagious, characterized by sudden onset, more or less febrile action, and general aching with enlargement of a single deep cervical gland next to tonsil, accompanied or followed by more or less redness of the mucous membrane covering the tonsil and its pillars; also, the soft palate and uvula in some cases, with or without exudate. The incubation period from two to three days.

Cause.—A streptococcus of human or bovine origin, found in milk of cows having garget or mastitis.

Pathologic Anatomy.—The disease consists essentially of a septic inflammation of a deep cervical gland with congestion and infiltration of the mucous membrane, especially of the soft palate, and occasionally of the larynx.

Symptoms.—The onset is sudden, with chills, nausea, vomiting, malaise, headache, backache, pains in the limbs, lancinating pains in a deep cervical gland, a rise of temperature 101° to 104°F; tongue heavily furred. The patient complains of pain in the neck with little or no soreness of the throat at the onset, followed, in some cases, by increasing redness of the tonsil and its pillars, soft palate and uvula, which may become markedly edematous. In some cases there is a grayish or white, exudate on soft palate or uvula. In mild cases there may be one or two elevated pinhead pustules or festers on the arch of the soft palate or uvula. Occasionally the inflammation extends to the larynx, giving rise to partial aphonia.

Diagnosis.—While this disease simulates mumps, quinsy, tonsilitis and diphtheria, it may be distinguished from each by the absence of one or more pathognomonic symptoms. It lacks the stiffness and rigidity of the jaws present in both mumps and quinsy; also, the difficulty in swallowing, unless accompanied by œdema of the mucous membrane. The swelling at the angle of the jaw is lower than the swelling in mumps, and does not affect the parotid or submaxillary gland. It may be distinguished from follicular or lacunar tonsilitis by the absence of the furred appearance or creamy discharge from the crypts, although a good many present a furred appearance of a single crypt.

It is distinguished from diphtheria by the absence of the Klebs-Loeffler bacillus and by the fact that the patches are small and do not have a tendency to extension.

Vincint's Angina, due to the bacillus fusiformis, has a more extensive pseudo-membraneous inflammation, and ulceration of mucous membrane of throat.

Ludovici Angina (Ludwig's Angina) is a cellulitis of the neck, following trauma, or secondary to specific fevers.

Complications.—Extension to the other side of the neck. Œdema of the throat. Extension to serious membranes, giving rise to anthritis, pericarditis, pleuritis and peritonitis, extending to the skin, causing erysipelatous inflammation of the face.

Prognosis.—The prognosis is favorable in uncomplicated cases. Of 609 tabulated cases there have been 13 deaths, due to peritonitis, pneumonia, erysipelas and acute œdema of the larynx. All deaths occurred in persons over 60 years of age.

Treatment.—The various symptoms should be met with suitable remedies as they arise. Locally, idodine should be applied to the mucous membrane, and iodine and petorgen to the skin. For the fever, aconite, belladonna, ferrum-phos and iodine of mercury may be used with advantage. Phenacetine relieves the general aching and local pains. Urotropine grains V should be given every six to eight hours until vesicle irritation is produced. In severe cases antistreptococcus serum, 20 to 40 cubic centimeters, should be given every twelve hours until reaction sets in and the temperature declines to normal. Patient should be kept in bed and given a nutritious liquid diet.

As this disease is caused by a streptococci in milk, it may be prevented by the use of pasteurized milk.

NON-MEDICAL ANESTHETISTS.

By LAWRENCE IRWELL, M.A., B.C.L.,

BUFFALO, N. Y.

THE Congress of Surgeons which recently met in Chicago, urged the enactment of State laws which will require physicians to have five years' experience before being allowed to practice surgery, etc., etc., but not one word was said concerning the qualifications which an anesthetist ought to possess. The explanation may perhaps be found in the fact that very many surgeons know little about anesthetics and never study the subject, yet in some instances in which the patient is a bad surgical risk the administration of the anesthetic needs quite as much care as the work of the surgeon. A certain Philadelphia surgeon uses a nurse as anesthetist, and professes to have great confidence in her ability. Nevertheless, when his patient is in poor condition for an operation, he does not allow this nurse to give the anesthetic, but substitutes a physician. Why does he do this? Either because he is afraid of legal proceedings in case of the patient's death on the table, or because, despite his professions, he has little confidence in the nurse's knowledge of anesthesia. There is no doubt that some non-medical persons can be taught to give general anesthetics with safety, and there is also no doubt that some men could be taught to perform surgical operations without taking a complete medical course. But both the art of surgery and the art of administering anesthetics are specialties in medicine, and patients are not properly protected when amateurs are allowed to pose as specialists on surgery or on anesthetics. Deaths from anesthesia are more common than any statistics show. In the first place, unless the patient dies in the operating room, no death certificate ever gives anesthesia as the primary cause of death. Secondly, shock as a primary cause of death sometimes means an incompetent or inexperienced anesthetist. The idea that a nurse can become as safe an anesthetist as a medical expert is not correct, notwithstanding the boasts of certain persons residing in Rochester, Minnesota. She can become as good an anesthetist as it is possible for a person without medical education to become, and that is all. Very many nurse-anesthetists are deplorably ignorant of physiology, and few of them know what acapnia means. Yet death from acapnia is far from impossible. Any one who has ever seen any anesthetic administered by a medical specialist and the same anesthetistic given later by an interne, or a "specially trained nurse," knows what the difference is to the patient—not only the chance of death on the table, but the extent of the post-anesthetic suffering. Concerning the latter point, an investigation at a St. Louis hospital, where two thousand patients were anesthetised by a medical specialist and the same number by internes, showed statistically that post-anesthetic nausea and vomiting are trivial when a medical specialist has administered the anesthetic compared with the extent of both forms of suffering after an interne has dropped ether onto the mask. The managers of this hospital do not employ any nurses to do physicians' work, and the administration of anesthetics is, both legally and medically, a part of the practice of medicine; it is not a part of the practice of nursing.

The need of legislation in this State (New York), specifically providing that the administration of any general anesthetic, even in the presence of a physician, constitutes the practice of medicine is, in my opinion, proved by two facts. First, deaths from anesthesia occasionally occur in cities where the services of competent anesthetists are always available. Inquiry sometimes shows that the case was one of childbirth in which the nurse was permitted to give chloroform as a complete anesthetic, not a few drops as an analgesic. In other cases investigation shows that a surgeon employed a "specially trained nurse" as anesthetist, sometimes for a "private" patient, without having even mentioned to that patient that by paying a small additional sum, seldom over $25 (and outside New York City considerably less), he could be anesthetised by a medical specialist. Secondly, nitrous-oxide-oxygen is now being used by a few surgeons as a routine anesthetic. For short dental operations it is comparatively safe, but for major surgery it has proved much more dangerous than ether, even in the hands of some medical specialists of great experience. Dr. Gatch, for example, has had three deaths out of 2,500 administrations. How many Dr. Teter, the Cleveland dentist, has had, I do not know, and he may not have had any for some years. I should, however, like to see his statistics with all dental operations excluded. He is the "medical" anesthetist at some Cleveland hospitals. The special need for legislation is this: At a certain hospital in Cleveland, Ohio, nurses are being "trained" to become "specialists" in the administration of nitrous-oxide-oxygen. The so-called "training" occupies from four to six months, at the end of which period these nurses are allowed to pose as experts in the art of administering nitrous-oxide-oxygen for surgeons, and some of them are "practicing" outside the State of Ohio. As a well-educated physician cannot become an expert anesthetist in six months, to pretend that a nurse, with her meager training in physiology and very little indeed in pathology, can become a safe administrator of $N_2O + O$ in that short time is nonsense, of course. Further, more than two years ago the Attorney General of Ohio gave an opinion that the administration of general anesthetics by non-medical persons in the presence of a registered physician is unlawful in Ohio. The hospital in question, however, still continues to use nurses as anesthetists and

to "train" other nurses to become "specialists in nitrous-oxide-oxygen anesthesia." Such "specialists" are a danger to the community; there is no popular demand for them in New York State, and the legislature ought to protect the public from them by passing a very brief addition to the Public Health Law providing that the administration of any general anesthetic constitutes practicing medicine. The midwife practices medicine legally, but she is, in my opinion, a detriment to the public. The nurse anesthetist, upon the other hand, is doing what the legislature never intended to permit her to do. Even with the existing law she could probably be indicted, but conviction is far from certain.

Legislation prohibiting physicians from doing surgical work before becoming surgeons may be desirable if constitutional, but it is not nearly as necessary at present as is legislation that will effectually prevent nurses from practicing a specialty in medicine without a medical education, but with the connivance and assistance—and sometimes for the special benefit—of surgeons, some of whom know very little of the real dangers of any general anesthetic.

Never in the history of the United States has there been a time when the public distrusted the medical profession as much as it does today. Never in the history of the country was there a time when quacks were so numerous and so successful in a financial sense. Educated men and women are beginning to learn that the administration of a general anesthetic is a very serious matter, and before many years have passed most people will know something of the danger of anesthesia and its horrible after-effects when given by amateurs to sensitive patients. When that knowledge has become general, the surgeon who uses a nurse to anesthetise his "private" patients who are well able to pay for a medical specialist, can say good-by to his practice, assuming, of course, that the law has not previously interfered with nurses who practice medicine at the behest of and for the benefit of surgeons.

The reader will kindly note that I am not a physician.

ROENTGEN STEREOGRAPHY IN THE DIAGNOSIS OF URINARY CALCULI.

By E. W. CALDWELL, M.D.,
By H. M. IMBODEN, M.D.,
NEW YORK CITY.

EARLY in the history of the X-Ray more or less successful attempts were made to demonstrate urinary calculi. This important work is one of the oldest and most useful applications of Roentgen's discovery. In July, 1897, MacKenzie Davidson, in London, succeeded in demonstrating a calculus in the bladder by means of a long X-Ray exposure. Soon after this calculi were demonstrated in the ureters and kidneys by many workers in various parts of the world. In this country important pioneer work was done by Dr. Leonard of Philadelphia.

During the first few years we were very happy when our X-Ray plates gave a shadow of a calculus. If no calculus was shown, it was not proven that no stone was present, but in more recent years we rely almost as much on negative as upon positive findings in the plate. As the technique improved we were able to obtain shadows of the kidneys which often gave useful information as to their size, outline and position.

About 1906 the introduction of colloidal silver salts into the ureters and kidney for X-Ray demonstration of these cavities still further widened the scope of usefulness of this method of examination. This so-called combined method of examination is of great value in many cases, but it is comparatively seldom that this procedure is justifiable, and the demonstration of the presence or absence of calculi is still the more important function of the X-Ray in the urinary tract. Like all things human it is not infallible but it is perhaps the most efficient single method of diagnosis of this condition.

Though it may often be relied upon alone to make a diagnosis, it does not replace any other method and gives the best results when used in connection with other well-known methods. Most of the errors occur from two causes:

1. Shadows of calcareous bodies outside of the urinary tract may be mistaken for calculi.
2. Calculi of pure uric acid or sodium urate give such faint shadows that they can usually not be detected by X-Ray.

Fortunately such calculi are very rare. They are almost unknown in the kidneys or ureters but occasionally found in the bladder where they can be more readily detected by other means.

The better the plates that are obtained the plainer will calculi be shown, but at the same time all of the confusing extra urinary bodies will also be shown plainer. Thus the interpretation of good plates may require more time and study than is necessary for poor plates, but the greatest accuracy will be obtained only with good plates together with a careful and judicial interpretation.

The question which most often presents itself is to decide whether a shadow is due to a urinary stone or to some extra-urinary body. The number and variety of these extra-urinary bodies found is astonishing. The most common are: phleboliths in the pelvic veins; isolated calcified plates in the costal cartilages; calcified plates in the arterial walls; calcified lymph nodes; appendix concretions; opaque substances in the intestinal tract, etc.

When these shadows lie in the region of the urinary tract, it is sometimes very difficult indeed to make a differentiation. To better ac-

complish this it has been the custom to introduce an *opaque* urethral catheter or an ordinary urethral catheter enclosing a lead or silver wire and thus obtain an estimate of the relation of the suspicious shadow to the wire in the ureter. It must be remembered however that the shadow of the suspicious calcareous body and of the urethral stillette may be superimposed in a single plate, although separated in space by a considerable distance. Plates made at different angles usually obviate errors of this sort.

Calculi in the kidneys sometimes give shadows which are superimposed upon those of the rib and thus obscured in a single plate. These also may be brought to light by making additional plates with the rays in different directions.

It is never quite safe to confine the X-Ray examination to one part of the urinary tract which is giving symptoms. Occasionally the pain is on the side opposite to the stone. Frequently a calculus in the ureter may give symptoms referable to the kidney. Sometimes there are calculi in both kidneys when the symptoms are referred to one side only. Many of the errors in Roentgen diagnosis would have been averted by covering the entire urinary tract, and by making at least two plates of each region.

Since it is necessary to make two sets of plates it follows naturally that by making the plates in stereoscopic pairs a very great advantage will be gained.

The stereoscope was a popular parlor toy about thirty years ago. For a long period following it was almost forgotten, but recently it has been revived for educational purposes and for use in connection with the X-Ray. It may be well, however, to mention briefly the purposes of the instrument.

Our visual perception of distance and perspective depends to a great extent on the fact that we have two eyes, each of which sees a slightly different view. The difference in these two views enables us by an unconscious process of triangulation to estimate depth and distance. Therefore if we have presented to each eye a view corresponding to that which would be seen by that eye we produce an illusion of perspective from two plane pictures. Instruments for so presenting two slightly different views to the two eyes separately, are known as stereoscopes. Of these there are many types, the most common of which is the ordinary Brewster Stereoscope. It is adapted only to views not much wider than the distance between the two pupils, or about two and one-half inches.

The well-known Wheatstone Stereoscope consists of two mirrors placed at right angles and so arranged that each eye may see, in one of these mirrors, one of a stereoscopic pair of views or X-Ray plates. This is the most common type of stereoscope used for Roentgen Ray plates which are ordinarily much too wide for the Brewster Stereoscope. This instrument has certain disadvantages. First, there are reflections not only from silvered surfaces of the mirrors, but from the glass, and these two images become confused and blurred. Second, the two illuminated plates face each other and each one throws light upon the other on the side which should be in darkness.

To obviate this difficulty one of us (Dr. Caldwell) introduced some ten years ago a modification of the Wheatstone Prism Pseudoscope, an instrument which had been practically obsolete for years. This instrument enables two large X-Ray plates *in the same plane* to be viewed stereoscopically, and the reflections from the glass are not visible because the reflecting surfaces of the prisms are not parallel to the planes of the glass at the surfaces of entrance and emergence of the light rays.

In an ordinary photograph we have many indications of perspective without recourse to the stereoscope, but in the Roentgenogram we have a new kind of a shadow which is devoid of reliable indications of perspective. People who have not learned to look at X-Ray plates think they can see perspective in them but such impressions of perspective are usually misleading. The stereoscope gives us the only reliable perspective obtainable with the X-Ray, and therefore when Elihu Thompson in 1896 suggested that Roentgenograms might be made stereoscopically he opened the way for very important development. Soon afterwards MacKenzie Davidson, in London, introduced Roentgen stereoscopy not only with the Roentgen plates but with the fluorescent screen.

The difficulties of technique have prevented Roentgen stereoscopy from coming into wide use although it has long been practiced by a few enthusiastic workers. It will be readily understood that in X-Ray examinations of the urinary tract stereoscopy will be especially useful.

For the last seven or eight years we have adopted this method as a routine procedure in this work. We realize that in the majority of cases stereoscopy is not necessary for arriving at a correct diagnosis, but in certain cases which cannot be known beforehand the stereoscope greatly facilitates differential diagnosis between extra-urinary bodies and calculi, and makes possible the detection of calculus shadows which might otherwise be obscured by bone shadows. In more than a few cases it has saved us from errors in interpretation of plates which were technically excellent but which examined singly did not give us the information desired. In a few cases, lesions of the spinal column which gave symptoms referable to the urinary tract have been pointed out easily by means of stereoscopic plates.

In Roentgen stereoscopy of the urinary tract the technical difficulties and the expense are much greater than for the usual or ordinary X-Ray examination. It is necessary that all of the usual precautions be taken as to the prepara-

tion of patient and the selection of plate and tube.

The preparation of the intestinal tract is important. We have found no cathartic so safe and so effective as castor oil in large doses given the night before the examination. Saline cathartics should be avoided because they almost always leave the colon filled with gas which makes confusing shadows. We think that ordinarily it is better not to depend upon an enema or even to use an enema; first, because it does not empty the small intestine, and second, the whole enema may not be evacuated; third, the intestine is usually made more irritable. When no cathartic can be used we recommend that several enemata of warm water be given at least two or three hours before the examination is to be made. If these enemata are given at intervals of about half an hour, until about four have been administered, the results are usually good.

Compression is as useful in stereography as with the ordinary method. This is accomplished with the Albers Schönberg compression blende and the lufa sponge of Haenish or the air cushion first published by Caldwell in 1902. The patient must suspend respiration and remain immovable not only during the period of two exposures but in addition for a period of time long enough to change the position of the tube, and to replace the plate first exposed by another and remove the plate first exposed to a place protected from X-Rays. It is practically a necessity that this be done by automatic machinery. We have devised and constructed appliances that accomplish this shift of plate and tube in about 3/10 of a second. The exposures vary from half a second to as much as three seconds each. We prefer not to make two exposures alike, because long exposures and short exposures each have certain advantages, and by making two unequal exposures we obtain the advantages of both.

The greatest difficulty in stereograph of the urinary tract is due to the extra strain on the X-Ray tube which must make two exposures instead of one. Almost any reasonably good X-Ray tube will make one satisfactory exposure, but it must be a very good tube that will, within a space of four seconds, make two fully timed exposures of the urinary tract of a fair sized individual. In order to make two such exposures in so short a time we have to use an amount of energy which strains the tube to the danger point, and the loss of tubes resulting from this cause greatly increases the expense for stereoscopic work. The use of intensifying screens would shorten the time of exposures sufficiently to obviate this difficulty, but we have not found plates made with intensifying screens to be so reliable for this work.

Conclusions.

1. The only disadvantages of stereography of the urinary tract as compared with the ordinary single plate method examination are the increased technical difficulties and the greater expense. We think that accuracy in these examinations is of such great importance as to justify the increase in expense and in labor necessary for the stereoscopic method.

2. Stereography reduces to a minimum the errors from the following sources:

(a) Artifacts in the plates resembling stone which may appear in one plate but not in two in the same place.

(b) The mistaking of extra-urinary bodies for calculi.

(c) Overlooking the shadows of calculi which are superimposed on bone shadows, especially the heavy stones of the pelvis.

(d) The knowledge of depth and perspective which these stereoscopic examinations present gives confidence in the estimation of the size, outline and position of the kidneys.

BACKACHE.*

By CLARENCE E. COON, M.D.,
SYRACUSE, N. Y.

BACKACHE is a symptom with which we are all more or less familiar in a general way. The internist and the general surgeon, the gynecologist and many other specialists are called upon to prescribe for this indefinite symptom—backache. It is only during the past few years that the back itself has been studied with the idea of obtaining some idea as to the actual cause of the ache.

If the patient presents himself for examination to the internist and a more or less superficial examination is given, it is quite likely that he will be assured that some rheumatism medicine will relieve him, or that he is nervous and run down and a general tonic is indicated.

If the surgeon sees him first, he may receive medical treatment or he may be subjected to cupping or cauterization or examined for renal calculus or appendicitis.

If the gynecologist gets first chance, a malposition of some pelvic organ is found to be the cause, and so on through the various specialties.

It is, of course, perfectly true that most of the conditions cited can be the cause of backache, but the theme of this paper is, that by no means all backaches, and I believe not a majority of them, are due to these extraneous causes; that if the internist, the surgeon, or the specialist would carefuly examine the back, he would often find evidences of trouble which ought to lead him to believe that a more careful and thorough examination of the back, *as a back*, was indicated.

When one has in mind to enumerate all of the

* Read at the annual meeting of the Fifth District Branch of the Medical Society of the State of New York, at Oneida, October 2, 1913.

different causes of backache, he is confronted with a task of gigantic proportions. I shall not attempt anything of the kind, and will only try to explain some of the more common forms of trouble, chiefly mechanical, which are quite often overlooked. When we consider the anatomy of the back, and this includes not only the bones, but the nerves, blood supply, muscles, ligaments, etc., and temper our consideration with a study of this region from a mechanical standpoint, having in mind the many and varied functions performed by the normal back, we are led to believe that even a slight departure from the normal may be the cause of pronounced symptoms. Many of these symptoms are easily traced to their origin, provided we go at it in the right way, and do not seek to find the cause in some other locality.

The attention of the profession was forcibly directed to the study of the back by Goldthwait's study and demonstration of the sacro-iliac articulation as the cause of much trouble. He and others have shown that a comparatively slight displacement between the sacrum and ilium may lead to inflammatory changes which caused pressure upon adjacent nerves, and when treatment was directed to correcting this malposition, many of the chronic backaches, sciatic rheumatism, etc., cleared up very promptly.

The ease with which sacro-iliac strain could be diagnosed and treated and the spectacular brilliance of the results in selected cases, led a large number of men to often make a snap diagnosis of sacro-iliac strain on all patients with backache. This diagnosis, therefore, soon became overworked and it was seen that more careful study was necessary, in order to avoid some of the bad results in the way of paralysis, etc., following forcible replacement. The result of this agitation has been a more careful study of the back and a better classification of spinal troubles. If it is true, that inflammatory thickening can produce the symptoms, which lead to the diagnosis of sacro-iliac strain, it must be equally true that inflammatory changes in other parts of the spine can produce symptoms which ought to lead us to diagnose the trouble.

Take our old friend the "Railway Spine," which Dorland's Medical Dictionary defines as "A set of obscure nervous phenomena sometimes following railway accidents." Such a definition certainly does not mean much to any one trying to make a careful diagnosis and rather implies that the patient is a malingerer. A careful study of these cases very often brings to light, conditions which seem to make the "obscure nervous phenomena" of Dorland very much less obscure; many of these cases give characteristic evidence of sacro-iliac strain; in others it can be shown that a transverse *or* spinous or articular process of a vertebra or the spinal end of a rib has been fractured; in others a bridge of bone may have formed connecting two adjoining vertebra as the result of periosteal irritation following an injury. In others there may be a dislocation of the articular processes of the vertebra and even a fracture of the body of a vertebra can occur without producing more than "obscure nervous phenomena." The displacement of a vertebra, so much advertised by our friends the osteopaths, I have never seen, except in the extreme upper cervical region, when it may occur as the result of muscular spasm or injury and in spondylolisthesis or dislocation of the fifth lumbar, which is always the result of trauma. No doubt, some of the cases of "Railway Spine" are malingerers, but a large majority of them have a definite lesion which ought to be located and the symptoms are not easy to fake.

In a recent case at law, where a Jewish resident of the city was suing a railroad corporation on account of injuries to his spine, kidneys, etc., in a railroad smash-up, it was brought out in the testimony that this same Jewish man had had other previous injuries and had collected damages, and it appeared to the court and attorneys that he had learned the lesson of faking, and the lay diagnosis was Railway Spine. In this case the X-ray showed a solid bridge of bone connecting the twelfth dorsal and first lumbar and surrounding the inter-vertebral fibro cartilage. The location of this lesion corresponded to his areas of pain and new bone formation evidently produced pressure symptoms. This might have been caused by this accident, so that instead of having his case thrown out of court he was awarded a verdict.

Not all cases of so-called "Railway Spine" are the result of railroad accidents, many occur as the result of sudden excessive muscular exertion. One, a woman, while lifting a helpless husband, and while in a stooping position, it was suddenly necessary for her to assume his entire weight. The result was a very painful back for a time and this pain persisted in some degree several years. The X-ray showed a fracture of two spinous processes. Another case—a laborer, while lifting a heavy iron, felt a sharp pain in his back and something give. X-ray showed fracture of a transverse process of a lumbar vertebra.

Minor injuries, and even fractures of some part of a vertebra, are not at all uncommon, and the diagnosis of "Railway Spine" is not a safe one.

In my experience the areas of the spine most liable to injury are in the order of their frequency: (1) Sacro-iliac; (2) fourth and fifth lumbar; (3) twelfth dorsal and first lumbar. Not all backaches are the result of a definite injury—very often a female patient will ask advice and say that in addition to her backache, her dressmaker says one hip is larger than the other. In many of these cases, some degree of scoliosis is present with its consequent muscle-strain. Many will show angular deviation of the spine to the right or left in the region of the fifth lumbar, quite often it can be shown that

there is some abnormality of the formation of one or more transverse processes, usually the fifth lumbar, which by pressure on the ilium causes strain.

In middle-age patients, and especially men whose work has exposed them to all kinds of weather, a very chronic backache often develops, which is more often than not wrongly diagnosed. Often these cases are thought to have renal calculi, but the history of the patient, the rigidity of the spine and X-ray findings make an early diagnosis of spondylitis deformans fairly easy. The pain in these cases of spondylitis or osteo-arthritis of the spine, is very often referred to the region of the distal end of the nerve emerging at the site of trouble and thereby leads one to make a diagnosis of pleurisy, renal calculus, appendicitis, etc.

The habitually bad posture which is indicative of visceroptosis, is a constant strain upon the muscles of the back and is a very frequent cause of backache. This posture is exceedingly common in all ages and is shown by round-shoulders, flat lumbar spine, hips thrust forward. Any slight extra exertion is certain to cause pain in the overtaxed spinal muscles. These people are very liable to have sacro-iliac displacement and its train of symptoms.

Severe lesions of the spine are usually associated intimately with other symptoms which lead to a correct diagnosis, but when a patient whose chief symptom is backache presents himself for examination, we are not justified in trying to assign other causes for his trouble until we have eliminated the back as a cause.

Careful clinical examination of a back is not at all difficult and does not require the technical skill that is necessary in heart or lung or urinary bladder or many other examinations. The first requirement is to have the patient completely stripped of clothing to the level of the trochanters. As he stands in a relaxed position with his back towards you, you will be able to note any gross deviation of the spine from the normal erect position. The patient is then requested to keep the knees straight and bend forward as far as possible; any restriction of movement or complaint of pain is noted, then lateral bending, one side compared with the other, location of pain, etc.

Quite often it will be found that in all movements the pain is referred to the same area. Firm finger-point pressure will often elicit tender points. If the pain is referred to the lower region of spine, it is necessary to have patient lie on his back on hard table, and try for Koenig symptom or straight leg raising, with spasm of the ham strings. This, when present, is quite pathognomonic of sacro-iliac strain and is not present in lesions above this point.

No diagnosis of the cause of chronic backache can be complete without the use of the X-ray, and without this aid in diagnosis the present stage of ability to diagnose could never have been accomplished.

The following case may be of interest to others as it has been and is to me: A prominent married woman with three children has had a great amount of pain and discomfort in the back and sides at a level of the waist line and just below, for the past few years. These pains have been quite severe at times, there have been many digestive symptoms, gas, nausea, constipation, etc. The most persistent point of pain has been in the upper lumbar region. A few years ago she was operated for appendicitis, a large appendix filled with pus was removed. Back pain persisted after her recovery. A few months ago, following an exacerbation of symptoms and some urinary symptoms, a careful search was made for renal calculus and guinea pigs were inoculated to determine whether there might be a tuberculous kidney. Soon after this I was able to examine this back. *As a back*—I found a rather exaggerated, enteroptotic posture, with an absolutely flat back and tender point on right side of upper lumbar vertebræ. On account of her bad posture, the lack of free flexion of the spine and tender pressure point I assumed that her trouble was static and to give the back rest, and at the same time improve the curves of the spine. I applied a plaster corset. The relief from pain was almost immediate, and later a removable corset, made of leather, was substituted for the plaster.

The treatment of these mechanical backaches must, of course, be rest; the degree of rest dependent upon the severity of the lesion, and will vary from simple strapping of the back with adhesive, while the patient goes about his work, to as near absolute immobilization as is possible in a rigid corset, and keeping the patient in a recumbent posture.

LEGISLATIVE NOTES.

Your attention is called to Senate bill No. 325 "regulating the sale of habit-forming drugs" and referred to the Committee on Public Health of the Senate. Also to bills, Assembly No. 465, "to amend the public health law in relation to the practice of medicine," referred to the Committee on Public Health, Senate No. 281, "to amend the public health law in relation to the practice of naturopathy and licensing naturopaths to practice in this state" referred to the Committee on Public Health, Senate No. 710, "providing for a state Board of Examiners for the practice of chiropractice," referred to Committee on Public Health. It is urged upon every member to read these bills and send a protest to his representatives in the Senate and Assembly against their passage. Members are also urged to oppose Senate bill No. 575, "to amend the public health law relative to medical licenses," referred to Public Health Committee, which, unless materially altered, should be opposed by the profession.

Attention is also called to bills, Senate No. 3, "for the supervision of animal experimentation within the state," and Senate No. 182, and Assembly No. 501, "to create a commission to investigate and report upon the condition of the practice of animal and human ex-

perimentation." These bills have been referred to the Judiciary Committees of the Senate and Assembly.

Every member is requested to bring what influence he can to bear in opposing these bills and to notify the undersigned what has been done.

Members of the State Society should advocate the passage of Senate bills 208-209, introduced by Mr. Seeley and referred to the Committee on the Judiciary, "to amend the state charities law in relation to making autopsies at Craig Colony for Epileptics" and "to amend the state charities law in relation to the Craig Colony for Epileptics and repealing certain sections thereof." All members are requested to use their influence to urge the passage of these bills, which would be a benefit both to the patients and to science.

LEWIS K. NEFF,
Chairman, Committee on Legislation.

BILLS INTRODUCED INTO THE LEGISLATURE.

IN SENATE.

January 23 to February 27, 1914.

Amending sub-division 11, section 107, State Charities Law, by removing the restrictions that autopsies on patients at Craig Colony for Epileptics must be made not later than 12 hours after death and be confined exclusively to the brain. (Same as A. 268.) By Mr. Seeley. To Judiciary Committee. Printed No. 209. Int. 208.

Adding new section 109, State Charities Law, and repealing sections 109 and 114, relative to the admission, detention and discharge of patients in the Craig Colony for Epileptics. (Same as A. 266.) By Mr. Seeley. To Judiciary Committee. Printed No. 209. Int. 209.

Legalizing the sale of bonds by the County of Jefferson for a new site for the county tuberculosis hospital. (Same as A. 239.) By Mr. Brown. To Judiciary Committee. Printed No. 224. Int. 224.

Adding new section 238a to Public Health Law, prohibiting the sale, at retail, of bichloride of mercury, except on a physician's prescription. If sold in tablet form, the tablets must be triangular and blue in color. By Mr. Heffernan. To Public Health Committee. Printed No. 243. Int. 242.

Inserting a new article 8a in Public Health Law, providing for a State Board of naturopathic examiners to consist of three members appointed by the Governor for a term of five years. Naturopathy is described as a form of natural treatment (excluding use of all drugs) including scientific water cure (not turkish baths) known as hydrotherapy, neuropathy, scientific manipulation of any kind. By. Mr. McClelland. To Public Health Committee. Printed No. 281. Int. 281.

Amending sections 1 and 2, chapter 584, Laws of 1869, as amended by chapter 349, Laws of 1884, by changing the name of the Manhattan Eye and Ear Hospital to Manhattan Eye, Ear and Throat Hospital and Medical School, and authorizing the school to maintain post-graduate instruction. (Same as A. 493.) By Mr. Herrick. To Cities Committee. Printed No. 308. Int. 302.

Adding new article 11a, entitled "Habit Forming Drugs," to the Public Health Law, regulating the sale of such drugs. (Same as A. 435.) By Mr. Boylan. To Public Health Committee. Printed No. 331. Int. 325.

For preventing the manufacture or sale of adulterated or misbranded or poisonous or deleterious foods, drugs, medicines and liquor and for regulating traffic therein and providing for appointment by the Governor of a commissioner of foods and drugs and his assistants, to define their powers and duties and repealing all acts relating to the production, manufacture and sale of foods, drugs, medicine and liquors in conflict herewith, except Cold Storage Law. (Same as A. 279.) By Mr. Duhamel. To Public Health Committee. Printed No. 373. Int. 360.

Amending section 236, Public Health Law, by providing that the provisions of this section alone regulate working hours and sleeping apartments in pharmacies and drug stores. (Same as A. 596.) By Mr. Walters. To Public Health Committee. Printed No. 427. Int. 407.

Authorizing William James Morton, of New York City, to continue the practice of medicine notwithstanding his conviction in March, 1913, upon indictments charging violations of postal service regulations. (Same as A. 106.) By Mr. Herrick. To Public Health Committee. Printed No. 484. Int. 459.

Amending section 21 of the Public Health Law, by providing that the salary of a local health officer, of not less than the equivalent of 10 cents per annum, shall apply only to such officers of cities and villages having a population of 8,000 and not to officers of towns. (Same as A. 638.) By Mr. Godfrey. To Public Health Committee. Printed No. 548. Int. 510.

Amending section 2 and adding new sections 46a to 46c, chapter 724, Laws of 1905, authorizing the board of water supply of New York City to make rules subject to approval of the State Health Department, as may be necessary to protect from contamination all potable water supplies and their sources. The water supply board shall have all the powers and duties relative to protection of water supply under its jurisdiction, as are now conferred upon the commissioner of water supply, gas and electricity; and provided that the board shall not proceed to construct any sewerage system until it shall have been approved by the Conservation Commission. (Same as A. 718.) By Mr. Pollock. To Cities Committee. Printed No. 561. Int. 524.

Adding new subdivision 9 to section 160, Public Health Law, and amending section 161, 166, 169, 170, relative to the issuance of medical licenses, and defining "unprofessional conduct." By Mr. Seeley. To Public Health Committee. Printed No. 622. Int. 575.

Adding new section 460 to State Charities Law, providing for the retention of feeble-minded, idiots and epileptics in State charitable institutions, if such retention is for protection and benefit of the individual or community. (Same as A. 591.) By Mr. Peckham. To Judiciary Committee. Printed No. 644. Int. 596.

Amending sections 173 and 174, Public Health Law, by prohibiting a licensed osteopathist to practice surgery unless he shall have passed the State examination for surgery; giving a physician who holds an osteopathist's license the same rights as the holder of any other license to practice medicine, and making the New York Osteopathy Society an incorporated medical society of the State for the purposes of the law. (Same as A 465; S. 608.) By Mr. Herrick. To Public Health Committee. Printed No. 680. Int. 631.

Amending sections 251 and 252, Public Health Law, by abolishing the board of examiners of nurses and creating a board of examination and advice of 6 members, 2 to be physicians, 2 to be connected with the management of a hospital maintaining a training school, and 2 to be graduate hospital nurses of not less than 5 years' experience. These members are to be appointed by the Board of Regents for from 1 to 6 years. By Mr. Foley. To Public Health Committee. Printed No. 726. Int. 678.

Amending section 161, Public Health Law, by authorizing the Regents to restore the right to practice medicine of any person convicted of a felony and subsequently pardoned by the Governor of the State where the conviction was had, or by the President of the United States. By Mr. Seeley. To Public Health Committee. Printed No. 716. Int. 668.

Amending sections 2, 3, 4, 11, 13, 14, 20, 21, 25, 27, 31, 34, 35, 38, 320, 322, 324, 328, 329, Public Health Law, and repealing sections 2a, 2b and 2c, 3a, 4, 4a, 4b, 4c, 21a, 21b, 21c, 326a, by increasing from four to six years the term of the Health Commissioner, from $3,500 to $8,000 the salary of the commissioner, and amending generally the Health Law. (Same as A. 854.) By Mr.

Thomas. To Public Health Committee. Printed No. 731. Int. 683.

Amending section 290, State Charities Law, by eliminating from the description of "Dispensary" any institution furnishing medical or surgical treatment for a compensation determined without reference to the value of the thing furnished. (Same as A. 453.) By Mr. Duhamel. To Judiciary Committee. Printed No. 767. Int. 705.

IN ASSEMBLY.

Appropriating $60,000 for emergency expenses of the health officer of the Port of New York. (Same as S. 247.) By Mr. Van Name. To Ways and Means Committee. Feb. 20. Reported amended to second reading. Printed No. 373, 756. Int. 371.

Adding new article 47a to Education Law, establishing "The New York State University of Law, Medicine and Engineering," to be managed by seven trustees, six to be appointed by the Governor with the consent of the Senate, and State Commissioner of Education to be an *ex officio* member; and appropriating $500,000. By Mr. Golden. To Public Education Committee. Printed No. 428. Int. 425.

Adding a new article 11a, entitled "Habit Forming Drugs," to the Public Health Law, regulating the sale of such drugs. (Same as S. 325.) By Mr. Kerrigan. To Public Health Committee. Printed No. 439. Int. 435.

Amending section 290, State Charities Law, by eliminating from the description of "Dispensary" any institution furnishing medical or surgical treatment for a compensation determined without reference to the value of the thing furnished. By Mr. Nelson. To Social Welfare Committee. Printed No. 457. Int. 453.

Amending sections 250 to 258, inclusive, Public Health Law, relative to the practicing of nursing. A nurse, to take a regent's examination, must submit satisfactory evidence that he or she is more than 21 years old, a resident of the State, of good moral character and holds a diploma from a nurses' training school in connection with a hospital or sanitarium giving at least a two years' course and registered by the regents as maintaining proper standards, and who has preliminary education required by the rules of the regents. (Same as S. 207.) By Mr. Hoff. To Public Health Committee. Printed No. 467. Int. 463.

Amending sections 173 and 174, Public Health Law, by prohibiting a licensed osteopathist to practice surgery unless he shall have passed the State examination for surgery; giving a physician who holds an osteopathist's license the same rights as the holder of any other license to practice medicine, and making the New York Osteopathy Society an incorporated medical society of the State for the purposes of the law. By Mr. Conkling. To Public Health Committee. Printed No. 469. Int. 465.

Amending sections 1 and 2, chapter 584, Laws of 1869, as amended by chapter 349, Laws of 1884, by changing the name of the Manhattan Eye and Ear Hospital to Manhattan Eye, Ear and Throat Hospital and Medical School, and authorizing the school to maintain post-graduate instruction. (Same as S. 302.) By Mr. Goldberg. To Judiciary Committee. February 19. Reported to second reading. Printed No. 498. Int. 493.

Directing the Governor to appoint a commission of seven members, two of whom shall be physicians or persons experienced in the practice of vivisection, two active members of an organization to prevent cruelty and three lawyers, such commission to investigate and report within one year the condition and extent of practice of human and animal experimentation in this State, especially upon children in hospitals, without their consent. (Same as S. 182.) By Mr. Gallup. To Judiciary Committee. Printed No. 506. Int. 501.

Adding new section 1083a, Greater New York Charter, providing for free spectacles and eye-glasses for school children. By Mr. Sufrin. To Cities Committee. Printed No. 584. Int. 573.

Adding new section 460 to State Charities Law, providing for the retention of feeble minded, idiots and epileptics in State Charitable Institutions, if such retention is for protection and benefit of the individual or community. By Mr. Fuller. To Charitable and Religious Societies Committee. Printed No. 602. Int. 591.

Amending section 21 of the Public Health Law, by providing that the salary of a local health officer, of not less than the equivalent of 10 cents per annum, shall apply only to such officers of cities and villages having a population of 8,000 and not to officers of towns. (Same as S. 510.) By Mr. Cheney. To Public Health Committee. Printed No. 656. Int. 638.

Amending the Public Health Law by adding new section 51, providing that no artificial or patented infant food shall be sold until samples, duly proven, shall have been analyzed and have received the approval of the Health Commissioner. Violation of this provision or adulteration of food of which samples have been submitted shall constitute a felony. By Mr. Sufrin. To Public Health Committee. Printed No. 701. Int. 683.

Amending section 238, Public Health Law, by prohibiting any person to sell at retail or dispense strychnine or its salts, uncombined in the form of tablets, discs, or pills coated with any other substances then uncolored gelatine coating. By Mr. Ahern. To Public Health Committee. Printed N. 712. Int. 684.

Amending section 231, Public Health Law, by making mandatory instead of permissive the appointment to the State Pharmacy Board by the Regents, from nominations submitted by the pharmacists' association, of three persons to succeed members whose terms of office expire on July 31st of each year. By Mr. Ahern. To Public Health Committee. Printed No. 713. Int. 685.

Amending section 2 and adding new sections 46a to 46c, chapter 724, Laws of 1905, authorizing the board of water supply of New York city to make rules subject to approval of the State Health Department, as may be necessary to protect from contamination all potable water supplies and their sources. The water supply board shall have all the powers and duties relative to protection of water supply under its jurisdiction, as are now conferred upon the commissioner of water supply, gas and electricity; and providing that the board shall not proceed to construct any sewerage system until it shall have been approved by the Conservation Commission. (Same as S. 524.) By Mr. Hoff. To Electricity, Gas and Water Supply Committee. Printed No. 746. Int. 718.

Adding new section, 1142 A, to the Penal Law prohibiting advertisements concerning certain diseases. By Mr. Squire. Int. 761. Printed No. 796. To Codes Committee.

Amending sections 1179, 1203, 1570, Greater New York Charter, and adding 11 new sections, 1571-a to 1571-k, directing the mayor to appoint a chief medical examiner of the City of New York, who shall succeed to all powers, duties and liabilities of the coroners. He shall appoint assistant medical examiners. By Mr. Brennan. To Cities Committee. March 5. Amended and recommitted. Printed Nos. 970, 1235. Int. 905.

Amending section 1769, chapter 410, Laws of 1882, by providing that in the borough of Brooklyn each coroner shall appoint two coroners' physicians. By Mr. Ittleman. To Cities Committee. Printed No. 988. Int. 923.

Amending sub-division 6, section 692, Greater New York Charter, providing that the trustees of Bellevue and allied hospitals, may establish boards and bureaus as are essential and prescribe rules for the conduct thereof and pay medical officers in whole or in part. By Mr. Conkling. To Cities Committee. Printed No. 1005. Int. 936.

The Medical Society of the State of New York

17 West 43d Street, New York

March 16, 1914.

The regular annual meeting of the Medical Society of the State of New York will be held on April 28, 1914, at 11 A. M., at the Hotel Astor, New York.

WILLIAM FRANCIS CAMPBELL, M.D.,
President.

WISNER R. TOWNSEND, M.D.,
Secretary.

17 West 43d Street, New York

March 16, 1914.

The regular annual meeting of the House of Delegates of the Medical Society of the State of New York will be held on April 27, 1914, at 8 P. M., at the Hotel Astor, New York, N. Y.

WILLIAM FRANCIS CAMPBELL, M.D.,
President.

WISNER R. TOWNSEND, M.D.,
Secretary.

CONSTITUTION.

ARTICLE IX.

AMENDMENTS.

No article of this Constitution shall be amended except by a two-thirds vote of the delegates present at any annual meeting, nor unless notice of the proposed amendment shall have been given at a previous annual meeting and shall have been published twice during the year in the official bulletin or journal of the Society, or sent by order of the House of Delegates to each county society in affiliation with the Society at least two months before the meeting at which final action shall be taken thereon.

Amendments to the Constitution reported by the Committee on the Revision of By-Laws at the last annual meeting.

The original articles of the Constitution are printed in ordinary type; the proposed amendments or changes are printed in italics and follow the original sections which it is suggested be amended.

ARTICLE II.

MEMBERSHIP.

SEC. 2. The term county medical society as used in this Constitution shall be deemed to include all societies which may be organized and chartered by the House of Delegates.

Sec. 2. The term county medical society as used in this Constitution shall be deemed to include all societies now in affiliation with this society or which may be organized and chartered by the House of Delegates.

ARTICLE III.

OFFICERS.

SECTION. 1. The officers of the Society shall be a President, three Vice-Presidents, a Secretary, a Treasurer, and one Councilor from each District Branch. They shall be elected annually by ballot for the term of one year, and the majority of the votes cast shall elect. The President, Vice-President, Secretary and Treasurer shall be elected by the House of Delegates. Each Councilor shall be elected by the District Branch of the district in which he resides and shall be the President thereof.

Section 1. The officers of the Society shall be a President, three Vice-Presidents, a Secretary, a Treasurer, and one Councilor from each District Branch. They shall be elected annually by ballot for the term of one year, except the Councilors, and the majority of the votes cast shall elect.

The President, Vice-President, Secretary and Treasurer shall be elected by the House of Delegates. At the first election in the District Branch societies hereafter held, the Councilors for the First, Second, Third and Fourth District Branches shall be elected for the term of two years. The Councilors for the Fifth, Sixth, Seventh and Eighth District Branches shall be elected for one year, and thereafter all Councilors shall be elected for the term of two years by the District Branch of the District in which they reside and shall be the respective Presidents thereof.

SEC. 3. No delegate elected to the House of Delegates shall be a candidate for office in the Society until after the expiration of the term for which he shall have been elected a delegate, and no person shall be elected to any office in the Society who shall not have been a member of the Society for the two years immediately preceding the date of his election.

Sec. 3. No delegate elected to the House of Delegates shall be a condidate for a general office in the Society until after the expiration of the term for which he shall have been elected a delegate, and no person shall be elected to any office in the Society who shall not have been a member of the Society for the two years immediately preceding the date of his election.

ARTICLE VII.

FUNDS.

Funds shall be raised by a per capita assessment on each county society and the amount thereof shall be fixed by the House of Delegates. Funds may also be raised by voluntary contributions, by the sale of the publications of the Society, and in any other manner approved by the House of Delegates. No funds of the Society shall be appropriated for any purpose except pursuant to a resolution of the Council.

FUNDS.

Section 1. Funds shall be raised by an annual per capita assessment on each county society at a uniform per capita rate throughout the State. Funds may also be raised by voluntary contributions, by the sale of the publications of the Society, and in any other manner approved by the House of Delegates. No funds of the Society shall be appropriated for any purpose except by authority of a resolution of the Council, nor shall any indebtedness be incurred by officers, members of committees or members of the Society until the same shall have been approved by the Council.

Sec. 2. The State annual per capita assessment shall be $3.00 and shall be collected by the county treasurers at the same time and as part of the county dues, and shall be remitted to the State Treasurer by the treasurer of each county society on or before the first day of June of each year.

Dr. Charles A. Wall, of Buffalo, offered as a substitute for Article III, Sections 1 and 2, the following:

ARTICLE III.

OFFICERS.

SECTION 1. The officers of the Society shall be a President, three Vice-Presidents, a Secretary, a Treasurer, and one Councilor from each District Branch. They shall be elected annually by ballot for the term of one year, and the majority of the votes cast shall elect. The President, Vice-President, Secretary and Treasurer shall be elected by the House of Delegates. Each Councilor shall be elected by the District Branch of the district in which he resides and shall be the President thereof.

SEC. 2. All officers and the elected members of the standing committees shall assume office at the close of the annual meeting of the Society.

OFFICERS.

Section 1. *The administrative officers of this society shall be* (a) *the general officers, consisting of a president, three vice-presidents, a secretary, and a treasurer.* (b) *The chairmen of the various standing committees.* (c) *A councilor from each district branch, who shall be the president thereof.*

These officers shall be the directors of this society forming the executive body to be known as the Council. The president, secretary and district councilors shall constitute the Board of Censors.

Sec. 2. *The general officers and the chairmen of the standing committees shall be elected by a majority ballot vote for the term of one year at the annual meeting of the House of Delegates and shall assume office at the close of the meeting at which they are elected.*

The councilors shall be chosen for the term of two years by the district branch to which they belong and shall assume office at the close of the next annual meeting of this society, following their election. The evenly numbered branches electing their councilors the even years, the odd numbered branches on the odd years, but a branch may at any intermediate meeting hold a special election for a shorter term, and, should occasion arise, to fill a vacancy, the vice-president of the branch filling the vacancy until an election is held.

SCIENTIFIC PROGRAM.

ARRANGED BY THE COMMITTEE ON SCIENTIFIC WORK.

Thomas J. Harris, M.D., Chairman,
104 East 40th St., New York City.
Thomas H. Halsted, M.D., Syracuse.
Lucius W. Hotchkiss, M.D., New York City.
Ross McPherson, M.D., New York City.
John O. Polak, M.D., Brooklyn.
Thomas S. Southworth, M.D., New York City.
Charles Stover, M.D., Amsterdam.

BY-LAWS, MEDICAL SOCIETY OF THE STATE OF NEW YORK, CHAPTER XI.

SECTION 1. No address or paper before the Society, except those of the President and orators, shall occupy more than twenty minutes in its delivery, and no member shall speak upon any question before the house for longer than five minutes nor more than once on any subject, except by consent.

SEC. 2. All papers read before the Society by its members shall become the property of the Society. Permission may be given, however, by the House of Delegates or the Committee on Publication to publish such paper in advance of its appearance in the NEW YORK STATE JOURNAL OF MEDICINE.

Members desiring to discuss papers will please send in their names as soon as possible to the Secretary of the Section. Discussors will be called upon in the order in which their names are received.

Members are requested to write out their discussions and present the same to the Secretary of the Section on or before the close of each session. There will be no official stenographer provided for the sections, and unless the member writes out his remarks they cannot be printed. Pads and pencils will be provided.

TUESDAY, APRIL 29TH.

Hotel Astor, 11 A. M.

108th Annual Meeting of the Medical Society of the State of New York.

Calling the Society to order.
Address of welcome by the Chairman of the Committee on Arrangements.
Reading of the minutes of the last meeting by the Secretary.
Oration on Surgery.
George W. Crile, M.D., Cleveland, Ohio, by invitation.
Address by the President, William Francis Campbell, M.D., Brooklyn.

SECTION ON MEDICINE.

Chairman, Charles Stover, M.D., Amsterdam.
Secretary, George Reese Satterlee, M.D., New York.
Place of Meeting—Hotel Astor.

Tuesday Afternoon, April 28th.

1. "The Pleural Lymph Flow; Causes of its Increase and Decrease," Albert H. Garvin, M.D., Raybrook.
2. "Clinical Irregularities of the Heart," Alexander Lambert, M.D., New York.
3. "Pulsus Alterans," Hermon C. Gordinier, M.D., Troy.
4. "The Drop Heart," Charles Lyman Greene, M.D., St. Paul, Minn., by invitation.
5. "Percussion vs. the X-ray in the Examination of the Heart," George Cheever Shattuck, M.D., Boston, Mass., by invitation.

Wednesday Morning, April 29th.

6. "A Plea for the Diabetic," Douglas C. Moriarta, M.D., Saratoga Springs.
7. "Some Recent Thoughts on Diabetes and Metabolism," Waldron B. Vanderpoel, M.D., New York.
8. "Nephritis," Martin H. Fisher, M.D., Cincinnati, Ohio, by invitation.
9. "Experimental Study of the Spleen and its Relation to Blood Destruction and Regeneration, Hemolysis and Hemolytic Jaundice," Richard N. Pearce, M.D., Philadelphia, Pa., by invitation.
10. Subject to be announced, Arthur W. M. Ellis, M.D., New York, by invitation.

Thursday Morning, April 30th.

11. "Syringe Canula Transfusion," Edward Lindeman, M.D., New York.
12. "What Dependable Information is it Possible to Secure from Laboratory Examination of Patients with Gastric Symptoms. A Review of 7,000 Gastric Analyses," Frank Smithies, M.D., Chicago, Ill., by invitation.
13. "The Determination of Surgical Conditions of the Stomach," Walter A. Bastedo, M.D., and Leon T. Le Wald, M.D., New York.
14. "The Work of a Modern Neurological Hospital and Dispensary," Charles L. Dana, M.D., New York.
15. "The Proper Relation of Laboratory Work to Neurological Diagnosis," Bernard Sachs, M.D., New York.

MEDICAL CLINICS.

Wednesday Afternoon, April 29th.

City Hospital, Blackwell's Island, New York.—Charles G. Stockton, M.D., Buffalo (by invitation of Harlow Brooks, M.D.). At 2.30. Liver and Digestive Organs. C. N. B. Camac, M.D. At 4. Subject to be announced later.

New York Hospital, 7 West 15th St., New York.—Lewis A. Conner, M.D. At 2.30. Kidney.

Mt. Sinai Hospital, 100th St. and 5th Ave., New York.—Alfred Meyer, M.D. At 2.30. Clinical Demonstrations of Interesting Cases.

Hospital Rockefeller Institute, 66th St. and Ave. A, New York.—Rufus I. Cole, M.D. At 4. Treatment of Pneumonia by Specific Sera: Treatment of Syphilis of the Central Nervous System.

Post-Graduate Hospital, 305 E. 20th St., New York.—Robert H. Halsey, M.D., and Selian Neuhof, M.D. At 2.30. Heart.

Neurological Institute, 149 E. 67th St., New York.—Charles L. Dana, M.D., Frederick Peterson, M.D., Pearce Bailey, M.D., Joseph Collins, M.D. At 4. Neurological Cases.

New York Polyclinic Hospital, 341 W. 50th St., New York.—William Van Valzah Hayes, M.D. At 2.30. Gastro-intestinal.

Bellevue Hospital, 26th St. and 1st Ave., New York.—James Alexander Miller, M.D. At 4. Pulmonary Tuberculosis.

Thursday Afternoon, April 30th.

Montefiore Home, Gun Hill Road and Bainbridge Ave., New York.—Harlow Brooks, M.D. At 2.30. Ductless Glands, Circulatory System, Arthritis and Their Relation to the Nervous System.

Fordham Hospital, So. Blvd. and Crotona Ave., New York.—John E. Welch, M.D. At 4. Liver and Digestive Organs.

Presbyterian Hospital, Madison Ave. and 70th St., New York.—Theodore C. Janeway, M.D., and Warfield T. Longcope, M.D. At 2.30. Kidney.

Post-Graduate Hospital, 305 E. 20th St., New York.—Edward Quintard, M.D. At 4. Gastro-intestinal.

Bellevue Hospital, 26th St. and 1st Ave., New York.—Leo H. Neuman, M.D., Albany (by invitation of Alexander Lambert, M.D.). At 2.30. Heart. Edward Lindeman, M.D. At 4. Blood Transfusion.

Brooklyn Hospital, Raymond St. and DeKalb Ave., Brooklyn.—Glentworth R. Butler, M.D. At 2.30. Heart. Joshua M. VanCott, M.D. At 3.30. Dudley D. Roberts, M.D. At 4.30. Gastro-intestinal.

SUPPLEMENTARY CLINICS.

Friday and Saturday, May 1st and 2d.

Full details will be published at the time of the meeting.

SECTION ON SURGERY.

Chairman, Lucius W. Hotchkiss, M.D., New York.
Secretary, Gilbert D. Gregor, M.D., Watertown.
Place of Meeting—Hotel Astor.

Tuesday Afternoon, April 28th.

1. "The Treatment of Exophthalmic Goitre," John Rogers, M.D., New York.
2. "The Present Status of the Surgery of Spastic Contractures," Alfred S. Taylor, M.D., New York.
3. "The Value of the Various Tests for Determining the Functional Activity of the Kidney before Operation," James N. Vander Veer, M.D., Albany.
4. "Transfusion of Blood, Direct and Indirect. A Consideration of the Technic and Relative Value of Different Methods," John A. Hartwell, M.D., New York.

Wednesday Morning, April 29th.

5. "The Surgery of Cranial Fractures, with a Brief Consideration of the Results, Immediate and Remote, of Fractures of the Vault and Base of the Skull," Charles A. Elsberg, M.D., New York.
6. "The Surgery of Compound Fractures of the Extremities," William L. Estes, M.D., South Bethlehem, Pa., by invitation.
7. "Conservatism in the Operative Treatment of Simple Fractures," George Woolsey, M.D., New York.
8. "Non-operative Treatment of Fractures of the Neck and Upper End of the Femur in Adults," John B. Walker, M.D., New York.
9. "Diagnosis by the X-rays in Case of Fracture, Based on the Records of 10,000 Fractures in Bellevue Hospital," Isaac S. Hirsch, M.D., New York.

Thursday Morning, April 30th.

10. "The Surgical Treatment of Empyema," Charles N. Dowd, M.D., New York.
11. "Acute Osteomyelitis, Surgery of," William L. Wallace, M.D., Syracuse.
12. "The Surgery of Acute Suppurative Spreading Infections of the Fingers and Hands." Author to be announced later.
13. Title and Author to be announced later.
14. "A Consideration of Methods and Results in the Surgery of Rectal Carcinoma," Charles H. Peck, M.D., New York.

SURGICAL CLINICS.

Bellevue Hospital, 26th St. and 1st Ave.—John A. Hartwell, M.D.; John Rogers, M.D.; Thomas A. Smith, M.D.; George D. Stewart, M.D.; John B. Walker, M.D.; George Woolsey, M.D. Wednesday and Thursday afternoons, April 29th and 30th.

Lebanon Hospital, Westchester and Cauldwell Aves.—Parker Syms, M.D. Thursday afternoon, April 30th.

Mount Sinai Hospital, 100th St. and 5th Ave.—Edwin Beer, M.D.; Charles A. Elsberg, M.D.; Howard Lilienthal, M.D.; Alexis V. Moschcowitz, M.D. Thursday afternoon, April 30th.

Presbyterian Hospital, 70th St. and Madison Ave.—Ellsworth Eliot, M.D. Wednesday afternoon, April 29th.

Roosevelt Hospital, 59th St. and 9th Ave.—William Darrach, M.D. Wednesday afternoon, April 29th. George Brewer, M.D. Thursday afternoon, April 30th.

St. Luke's Hospital, 113th St. and Amsterdam Ave.—William A. Downes, M.D.; Henry H. M. Lyle, M.D.; Walton Martin, M.D.; Frank S. Mathews, M.D. Wednesday and Thursday afternoons, April 29th and 30th.

Hospital for Ruptured and Crippled, 321 East 42d St., New York.—Virgil P. Gibney, M.D., Wisner R. Townsend, M.D., Henry L. Taylor, M.D., George W. Hawley, M.D., Bridgeport (by invitation). Wednesday, April 30th.

Brooklyn Hospital, Raymond St. and DeKalb Ave., Brooklyn.—John E. Jennings, M.D., Richard W. Westbrook, M.D. Wednesday and Thursday, April 29th and 30th.

Kings County Hospital, Clarkson St., Brooklyn.—Edwin H. Fisk, M.D., J. Bion Bogart, M.D. Wednesday and Thursday, April 29th and 30th.

Methodist Episcopal Hospital, 7th Ave. and 6th St., Brooklyn.—Arthur H. Bogart, M.D., (and staff), Thomas B. Spence, M.D. Wednesday and Thursday, April 29th and 30th.

Jewish Hospital, Classon and St. Marks Aves., Brooklyn.—William Linder, M.D., J. Bion Bogart, M.D. Wednesday and Thursday, April 29th and 30th.

Long Island College Hospital, Henry and Pacific Sts., Brooklyn.—J. D. Rushmore, M.D., William B. Brinsmade, M.D. Wednesday, April 29th. Henry H. Morton, M.D. Thursday, April 30th.

SUPPLEMENTARY CLINICS.

Friday and Saturday, May 1st and 2d.

Full details will be published at the time of the meeting.

SECTION ON OBSTETRICS AND GYNECOLOGY.

Chairman, Ross McPherson, M.D., New York.
Secretary, H. Judson Lipes, M.D., Albany.
Place of Meeting—Hotel Astor.

1. "Some Post-Natal Sequelæ of Asphyxia Neonatorum," Walter P. Manton, M.D., Detroit, Mich., by invitation.
2. "Diseases of the Umbilicus," Thomas S. Cullen, M.D., Baltimore, Md., by invitation.
3. "A Consideration of Some Methods in the Treatment of Puerperal Infections which have given Important Results," Raleigh R. Huggins, M.D., Pittsburgh, Pa., by invitation.
4. "Infection with the Bacillus Coli Communis Complicating Pregnancy," Edward P. Davis, M.D., Philadelphia, Pa., by invitation.
5. "Sepsis in Obstetrics," William M. Brown, M.D., Rochester.
6. "The Dynamic Principles Underlying the Successful Cure of Procidentia with Cystocele and Rectocele," J. Riddle Goffe, M.D., New York. Discussion by Arnold Sturmdorf, M.D., and George G. Ward, Jr., M.D., New York.
7. "Cystitis Coli in Women," Henry D. Furniss, M.D., New York.
8. "The Action of Gonococcus on the Endometrium," John G. Clark, M.D., Philadelphia, Pa., by invitation.
9. "The Effect on Subsequent Labors of Operation for Uterine Displacement," George W. Kosmak, M.D., New York.
10. "Retrodeviation of the Uterus in the Puerperium," Francis C. Goldsborough, M.D., Buffalo.
11. "Uterine Hemorrhage in Young Girls," Henry C. Coe, M.D., New York.
12. "Sterility in Women," Willis E. Ford, M.D., Utica.
13. Title to be announced, Angenette Parry, M.D., New York.

OBSTETRICAL AND GYNECOLOGICAL CLINICS.

Wednesday and Thursday Afternoons, April 29th, 30th.

New York Polyclinic, Woman's Hospital, Bellevue Hospital, People's Hospital, Mt. Sinai Hospital, Jewish Maternity Hospital, Brooklyn Hospital, Lebanon Hospital, Roosevelt Hospital, Manhattan Maternity Hospital, Beth Israel Hospital, City Hospital, Gouverneur Hospital, Sloane Hospital for Women, New York Lying-in Hospital.

SUPPLEMENTARY CLINICS.

Friday and Saturday, May 1st and 2d.

Full details will be published at the time of the meeting.

SECTION ON PEDIATRICS.

Chairman, Thomas S. Southworth, M.D., New York.
Secretary, Joseph Roby, M.D., Rochester.
Place of Meeting—Hotel Astor.

Tuesday Afternoon, April 28th.

1. "The Influence of Diet Upon the Growth and Recurrence of Adenoids," Frank vander Bogert, M.D., Schenectady. Discussion by William L. Culbert, M.D., New York.

2. "Some Manifestations of Influenza in Young Children," L. Emmett Holt, M.D., New York. Discussion by Linnaeus E. La Fétra, M.D., New York.

3. "Active Immunization in Diphtheria," William H. Park, M.D., New York. Discussion by Fred. M. Meader, M.D., Syracuse, by invitation.

4. "The Importance of Medical Supervision of Older Children," Edward J. Wynkoop, M.D., Syracuse. Discussion by J. Roberts Johnson, M.D., Syracuse; Godfrey R. Pisek, M.D., New York; Conway A. Frost, M.D., Utica; Norris G. Orchard, M.D., Rochester.

5. "The Causes and Treatment of Eczema in Infancy and Childhood," Rowland G. Freeman, M.D., New York. Discussion by Frank vander Bogert, M.D., Schenectady; George W. Crary, M.D., New York; Jacob S. Otto, M.D., Buffalo.

Wednesday Morning, April 29th.

6. "Infant Welfare Work in New York State, Exclusive of New York City," (illustrated with lantern slides), Henry L. K. Shaw, M.D., Albany. Discussion by T. Wood Clarke, M.D., Utica; Joseph C. Palmer, M.D., Syracuse.

7. "Antityphoid Vaccination in Childhood" (illustrated with lantern slides), Major F. F. Russell, M.D., U. S. A. Med. Corps, Washington, D. C., by invitation. Discussion by Albert R. Lamb, M.D., New York; Morris L. Ogan, M.D., New York.

8. "The Health Program of the Physical Training Department, Board of Education, New York City (illustrated with lantern slides), C. Ward Crampton, M.D., New York. Discussion by Joseph C. Palmer, M.D., Syracuse.

9. "Further Studies in Gastric Analysis in Infants," DeWitt H. Sherman, M.D., Buffalo. Discussion by Alfred F. Hess, M.D., New York; T. Wood Clarke, M.D., Utica.

10. "Record Charts for the New-born" (illustrated with lantern slides), Walter Lester Carr, M.D., New York. Discussion by Floyd M. Crandall, M.D., New York.

Thursday Morning, April 30th.

11. "Presentation of Cases of Sporadic Cretinism," Charles Herrman, M.D., New York. Discussion by Henry Koplik, M.D., New York.

12. "Causes and Treatment of Chronic Conjunctival Affections in Childhood, including Trachoma," Anna W. Williams, M.D., New York. Discussion by Colman W. Cutler, M.D., New York, and Anna I. von Sholly, M.D., New York, by invitation.

13. "Recurrent Bronchitis in Children," Charles G. Kerley, M.D., New York. Discussion by Charles Herrman, M.D., New York; Conway A. Frost, M.D., Utica.

14. "Subacute and Chronic Intestinal Infections," Elias H. Bartley, M.D., Brooklyn. Discussion by Henry A. Gribbon, M.D., Poughkeepsie; Oscar M. Schloss, M.D., New York.

15. "The Early Diagnosis of Congenital Syphilis," Carl G. Leo-Wolf, M.D., Niagara Falls. Discussion by Abraham Jacobi, M.D., New York; Philip Van Ingen, M.D., New York.

PEDIATRIC CLINICS.

Babies' Hospital, O. P. D., Lexington Ave. and 55th St.—Frederic H. Bartlett, M.D., New York. Wednesday, April 29, 2.30 to 3.30, Thursday, April 30, 2.30 to 3.30. General Pediatric Clinic.

Bellevue Hospital, foot of East 26th St.—Linnaeus E. LaFétra, M.D., assisted by Herbert B. Wilcox, M.D., and B. Raymond Hoobler, M.D. Wednesday, April 29, 2.30 to 3.30. Lumbar Puncture: Intravenous injection of neo-salvarsan: Demonstration of incubator room for premature babies, etc.

Demilt Dispensary, 23d St. and Second Ave.—William B. Noyes, M.D., assisted by Mary Sutton Macy, M.D. Wednesday, April 29, 2.30 to 3.30, Thursday, April 30, 2.30 to 3.30. Nervous Diseases of Childhood.

Hospital for Deformities and Joint Diseases, Madison Ave. near 124th St.—Henry W. Frauenthal, M.D. Wednesday, April 29, 2.30 to 3.30, Thursday, April 30, 2.30 to 3.30. Birth and acquired paralyses: Erb's palsy: Anterior Poliomyelitis: Spastics and Hemiplegics with their treatment.

Good Samaritan Dispensary, Essex and Broome Sts.—E. Mather Sill, M.D. Wednesday, April 29, 2.30 to 3.30, Thursday, April 30, 2.30 to 3.30. Interesting cases in large pediatric clinic: Various tests for tuberculosis.

Hebrew Infant Asylum, Kingsbridge Road and Aqueduct Ave.—Alfred F. Hess, M.D. Wednesday, April 29, 2.30 to 3.30, Thursday, April 30, 2.30 to 3.30. Duodenal Catheterization in Infants.

Lebanon Hospital, Westchester and Cauldwell Aves.—Sidney V. Haas, M.D. Wednesday, April 29, 4 to 5, Thursday, April 30, 4 to 5. Pediatric cases, Surgical and Medical.

Long Island College Hospital, Henry and Pacific Sts., Brooklyn.—Elias H. Bartley, M.D. Thursday, April 30, 4 to 5. Pediatric ward cases: Physical training and management of Orthopedic cases: Skin and tuberculin tests for tuberculosis.

Mt. Sinai Hospital, Dr. Koplik's Wards, 100th St. and 5th Ave.—Henry Heiman, M.D. Wednesday, April 29, at 4, Thursday, April 30, 4 to 5. Bedside pediatric clinic.

New York Post-Graduate Medical School and Hospital, 20th St. and Second Ave. (303 East 20th St.).—Henry D. Chapin, M.D. Wednesday, April 29, 2.30 to 3.30. Cases exemplifying the differential diagnosis of abdominal conditions in children.—Augustus Caillé, M.D. Wednesday, April 29, 4 to 5. Bedside clinic in the babies' Ward.—Henry D. Chapin, M.D., and Roger H. Dennett, M.D. Thursday, April 30, 2.30 to 3.30. Diarrhœal diseases in infants.

Public School No. 27, 41st and 42d Sts., east of 3d Ave.—G. Ward Crampton, M.D. Wednesday, April 29, 2.30 to 3.30. Demonstration of health aspects of school gymnastics and folk dances.

Public School No. 47, 225 East 23d St., east of 3d Ave.—Thursday, April 30, 4 to 5. Demonstration of new system of physical training applied to deaf children.

Research Laboratories of Department of Health, foot of East 16th St.—William H. Park, M.D. Director of Laboratories. Wednesday, April 29, 2.30 to 3.30, Thursday, April 30, 2.30 to 3.30. Demonstrations of the preparation of vaccines and antitoxins: Diagnostic procedures in Rabies, Trachoma, Meningitis: Complement Fixation Reactions in Gonorrhœa and Syphilis.

Hospital of the Rockefeller Institute, 66th St. and Avenue A.—Wednesday, April 29, 4 to 5. For demonstrations see under "Medical Clinics."

Roosevelt Hospital, Children's Ward, 59th St. and 9th Ave.—Rowland G. Freeman, M.D. Thursday, April.

30, 4 to 5. Bedside clinic: Lumbar puncture: von Pirquet reaction, etc.

Hospital for Ruptured and Crippled, 321 East 42d St., east of 2d Ave.—Thursday, April 30, 4 to 5. Diagnosis of diseases of the hip joint in childhood: Femoral type, Wisner R. Townsend, M.D.; Acetabular type, Walter W. Strang, M.D.; Quiescent and Atypical types, William Frieder, M.D.; Bone lesions that may be mistaken for hip joint disease, Osteitis Fibrosa, Bone Cysts, Hemorrhagic Osteomyelitis, Sarcoma, etc., George W. Barrie, M.D.; X-Ray diagnosis of lesions of the hip joint, Byron C. Darling, M.D.

Willard Parker Hospital for Contagious Diseases, foot of East 16th St.—Matthias Nicoll, Jr., M.D., Wednesday, April 29, 4 to 5. Demonstration of Scarlet Fever and its complications. Thursday, April 30, 4 to 5. Demonstration of diphtheria cases, with treatment: Intubation.—Godfrey R. Pisek, M.D. Thursday, April 30, 4 to 5. Scarlet Fever and its complications.

SUPPLEMENTARY CLINICS.

Friday and Saturday, May 1st and 2d.

Full details will be published at the time of the meeting.

SECTION ON EYE, EAR, NOSE AND THROAT.

Chairman, Thomas H. Halsted, M.D., Syracuse.
Secretary, Percy Friedenberg, M.D., New York.
Place of Meeting—Hotel Astor.

Tuesday Afternoon, April 28th.

1. "Recent Progress in Ophthalmology," Arnold Knapp, M.D., New York.
2. "Present Status of Squint and Insufficiencies," Herbert Wright Wootton, M.D., New York.
3. "Glaucoma Operations, Old and New," Peter A. Callan, M.D., New York.
4. "Visual Field and Blind Spot," Colman Ward Cutler, M.D., New York.
5. "Ocular Sarcoma with Lantern Demonstrations," Walter B. Weidler, M.D., New York.

Wednesday Morning, April 29th.

SURGERY OF THE MAXILLARY SINUS.

6. "Intra-nasal Route," Lee Maidment Hurd, M.D., New York.
7. "External Operations," Stephen H. Lutz, M.D., Brooklyn.

SYMPOSIUM ON NASAL DEFORMITIES AND FRACTURES.

8. "The Correction of Nasal Deformities by Subcutaneous and Plastic Methods," John O. Roe, M.D., Rochester.
9. "The Correction of Nasal Deformities by Mechanical Replacement and the Transplantation of Bone," William Wesley Carter, M.D., New York.
10. "The Use of Paraffin in Nasal Deformities," Harmon Smith, M.D., New York.

Thursday Morning, April 30th.

11. "Lantern Demonstration of the Recent Advances in Direct Laryngoscopy, Bronchoscopy and Esophagoscopy," Chevalier Jackson, M.D., Pittsburg, Pa., by invitation.
12. "Report on the Recent Developments of Otology," Thomas J. Harris, M.D., New York.
13. "Factors in the Diagnosis of Labyrinthine Suppuration." John D. Richards, M.D., New York.
14. "The Value of More Accurate Knowledge in the Diagnosis of Mastoiditis by the General Practitioner," James F. McCaw, Watertown.

EYE, EAR, NOSE AND THROAT CLINICS.

Wednesday and Thursday Afternoons, April 29th, 30th.

Brooklyn Eye and Ear Hospital , 94 Livingston St., Brooklyn.—Stephen H. Lutz, M.D., Hubert Arrowsmith, M.D.

Manhattan Eye, Ear and Throat Hospital, 210 East 64th St., New York.—T. Passmore Berens, M.D., Arthur B. Duel, M.D., James F. McKernon, M.D., Wendell C. Phillips, M.D., Ear;—Lewis A. Coffin, M.D., John E. MacKenty, M.D., Harmon Smith, M.D., Throat.

New York Eye and Ear Hospital, 218 Second Ave., New York.—Edward B. Dench, M.D., Robert Lewis, M.D.; Ear.

Bellevue Hospital, 26th St. and 1st Ave., New York.—Charles E. Perkins, M.D.; Ear.

Post-Graduate Medical School and Hospital, 305 East 20th St., New York.—John B. Rae, M.D., Robert L. Loughran, M.D.; Ear.—Beaman Douglass, M.D., Thomas J. Harris, M.D.; Throat and Nose.

Mt. Sinai Hospital, 100th St. and Fifth Ave., New York.—Frederick Whiting, M.D., Seymour Oppenheimer, M.D., Sidney Yankauer, M.D.

Polyclinic Medical School and Hospital, 341 West 50th St., New York.—Lee M. Hurd, M.D., Joseph H. Abraham, M.D.

New York Throat, Nose and Lung Hospital, 229 East 57th St., New York.—Reuben J. Held, M.D., Lee M. Hurd, M.D. Demonstrations have also been promised by Wolff Freudenthal, M.D., and Cornelius G. Coakley, M.D.

SUPPLEMENTARY CLINICS.

Friday and Saturday, May 1st and 2d.

Full details will be published at the time of the meeting.

ENTERTAINMENTS.

The Annual Banquet will be held at the Hotel Astor on Wednesday, April 29th, at 7.30 P. M. The price of tickets is $5.00.

Speakers of eminence are expected and it is hoped to make the occasion a most enjoyable one.

Members are urged to bring their wives and are asked to arrange for desired groupings and to notify the Committee as promptly as possibly of their preference in seating.

Tables will be arranged for parties of eight or ten.

Application should be made to the Chairman, Dr. Chas. H. Richardson, 17 West 43d St., New York City.

Members of the Medical Society of the State of New York are invited to attend the Stated Meeting of the Medical Society of the County of New York, which will be held at the New York Academy of Medicine, 17 West 43d St., on Tuesday evening, April 28, 1914. The scientific programme will be as follows:

Papers:

1. "Surgical Replacement of the Prolapsed Kidney." Illustrated by lantern slides. By Dougal Bissell, M.D.
2. "A New Operative Treatment of Spastic Paralysis," by William Sharpe, M.D. This paper will be illustrated by lantern slides and moving pictures. Cases which have been operated on will be shown.

The names of the discussors of these papers will appear in the April number of this JOURNAL.

At the close of the meeting a collation will be served to which members and guests are invited.

COUNTY SOCIETIES.

THE MEDICAL SOCIETY OF THE COUNTY OF ERIE.

AT BUFFALO, FEBRUARY 16, 1914.

President John V. Woodruff in the chair.

As soon as the meeting was called to order, President Woodruff announced the death of Dr. Roswell Park, which had occurred suddenly on February 15, 1914.

Dr. A. T. Lytle thereupon moved the following resolutions, which were duly adopted:

Whereas, the Medical Society of the County of Erie has met with an irreparable loss in the untimely death of Roswell Park, our loved, honored and respected member; and

Whereas, this Society desires to fittingly express its deep sorrow, and feels that any attempt, at this time,

to commemorate the life of this great many-sided man would be futile and inadequate; therefore be it

Resolved, that this Society devote the next regular meeting to a public memorial of Roswell Park, and be it

Resolved, that the President of this Society arrange for a fitting appreciation of the life and worth of this foremost surgeon, eminent teacher, brilliant author and celebrated man; and be it

Resolved, that this Society attend the funeral services, in a body, as a mark of respect; and be it

Resolved, that we here and now stand with bowed heads, until seated by the President, as a token of our grief.

The Secretary then read the minutes of the previous meeting and also of the Council meetings, all of which were duly approved.

Dr. Grover W. Wende, Chairman of the Committee on Membership, then presented the applications of 74 candidates, each of whom were separately voted upon and admitted to membership.

At the conclusion of the election of so many new members, Dr. A. G. Bennett rose and stated that this was the first time in the history of the Society that such a large number of new members had been elected at one time; that Dr. Wende had established a record; and that this is all the more important when we consider that, during the past five years, he had been instrumental in getting over 250 new members into the Society, and especially when it is considered that practically every eligible practitioner within the county has, by this time, been elected to membership. He laid special stress also upon the revenue derived from such an additional membership and concluded by saying that Dr. Wende was the logical candidate of this Society for the office of President of the Medical Society of the State of New York. He, therefore, moved that it be the sense of this Society that Dr. Grover W. Wende be its candidate for President of the Medical Society of the State of New York at the next annual meeting.

Dr. T. H. McKee seconded this motion with eulogistic remarks.

Motion was unanimously carried.

Dr. Julius Richter moved the following resolution:

Resolved, that the Delegates from this Society be instructed to vote as a unit for the election of Dr. Grover W. Wende for President of the Medical Society of the State of New York.

Resolution was unanimously adopted.

Dr. Bennett moved that the Medical Society of the State of New York be invited to hold its 1915 meeting in Buffalo. Carried.

Dr. Lytle moved that a letter be sent to the delegates from the various County Societies to the State Society urging the election of Dr. Wende, and also an invitation to hold the next meeting in Buffalo. Carried.

Dr. Bonnar moved that a vote of thanks be given to Dr. Wende for his excellent work as Chairman of the Committee on Membership. Carried.

Dr. A. L. Benedict, from the Committee on Necrology, reported to the society the following deaths:

Hiram Dana Walker, University of Buffalo, 1864, died at Buffalo, February 21, 1913, aged 73 years.

Norman K. McLeod, University of Toronto, 1903, died at Buffalo April 3, 1913, aged 34 years.

Bernard F. Dennis, University of Buffalo, 1899, died at Oil City, Pa., July 31, 1913, aged 36 years.

Frederick C. Busch, University of Buffalo, 1897, died at Buffalo January 3, 1914, aged 39 years.

This concluded the business session, after which Capt. George H. Norton, Deputy Engineering Commissioner, Department of Public Works, gave a very interesting paper on "The Water Supply and Sewerage of Buffalo and the Public Health." The paper was thoroughly discussed by many members present and at its conclusion a collation was served.

MEDICAL SOCIETY OF THE COUNTY OF CATTARAUGUS.

Annual Meeting, Salamanca, January 6, 1914.

The following officers were elected for the ensuing year: President, Herman W. Johnson, M.D., Gowanda; Vice-President, Raymond B. Morris, M.D., Olean; Secretary and Treasurer, Harmon H. Ashley, M.D., Machias; Delegate to the State Society, Herman W. Johnson, Gowanda; Alternate, Edward Torrey, Olean.

Resolutions were adopted that some member of the Society be designated to speak upon the subject of Public Health at each subsequent meeting. That this Society favors the biennial publication of the state directory. That a committee be appointed to investigate and report upon lodge and contract practice in this county. That the next regular meeting of the Society be held at Olean, in the evening. That Dr. Elsner, of Syracuse, be asked to speak and that a banquet be held after the meeting. Commending the services of Dr. Eugene H. Porter as State Health Officer and favoring his reappointment. (Copy sent to Governor Glynn.) A. D. Lake, of Gowanda, appointed corresponding member of the advisory council on Saratoga Springs.

The President, Dr. B. Van Campen, gave, "Report of 107 cases of Pregnancy attended by a general practitioner acting in the capacity of obstetrician, pediatrician and surgeon."

MEDICAL SOCIETY OF THE COUNTY OF DUTCHESS.

Regular Meeting, Poughkeepsie, January 14, 1914.

A report of the Committee on Memorial to the late Dr. Davis was read.

The annual reports of the committees were read.

The President appointed the following committees for 1914:

Public Health—J. E. Sadlier, N. Borst, F. B. Weaver, P. V. Winslow and J. H. Dingman.

Legislative—F. W. Parsons, J. E. Otis and M. M. Lown.

Milk Commission—J. S. Wilson, A. L. Peckham, D. H. MacKenzie, I. D. Leroy and J. A. Card.

Library—A. L. Peckham, L. C. Wood, C. T. Cadwell, J. W. Poucher and H. P. Carpenter.

The Scientific Section consisted of an address on the "Medical Inspection of School Law," by P. V. Winslow.

BOOK REVIEWS.

The Surgical Clinics of John B. Murphy, M.D., at Mercy Hospital, Chicago. Vol 2, No. 4, August, 1913. Published bi-monthly by W. B. Saunders & Co., Philadelphia and London.

This volume contains two articles in addition to the case histories and comments made in the course of operation by Dr. Murphy. The opening contribution is entitled "Some Observations on Vaccine and Serum Therapy from Dr. Murphy's Clinic," by Phillip Kreuscher. In two successive clinics Dr. Murphy comments upon this most important subject. Toward the close of the volume is included a very interesting and instructive talk upon "Appendicitis," by Dr. Norman Bridge, of Los Angeles. Dr. Bridge was present upon the occasion of the first operation for appendicitis by Dr. Murphy in the Cook County Hospital, March 2, 1889, being the first case operated upon in America on the then modern basis of opening the peritoneum in the absence of so-called plegmon or marked induration. A paper under title "Perityphitis," was published by Dr. Murphy in December, 1889. An abstract of this paper is reprinted to show the marked similarity in teaching between Dr. Murphy's present-day feeling and that of twenty-five years ago.

There are some excellent studies showing the blood supply in and around the joints in a series of radio-

graphs taken following injection of the vessels with red lead emulsion.

The remaining contents of the volume in the main are devoted to operation upon bones and joints, preceded as usual by the history, described and commented upon by Dr. Murphy in his well-known forceful and masterful manner.

The custom of presenting systematically and carefully studied cases with notes and comments at the time of operation, observations upon the after treatment followed up to the time of discharge from the hospital, is of inestimable value, and it is to be regretted that more surgeons have not followed Dr. Murphy's example in this respect. It is predicted that the near future will disclose other contributions of this nature.

ROYALE H. FOWLER.

BOOKS RECEIVED.

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivatent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

DIAGNOSIS IN THE OFFICE AND AT THE BEDSIDE. The Use of Symptoms and Physical Signs in the Diagnosis of Diseases. By HOBART AMORY HARE, M.D., Professor of Therapeutics, Medica and Diagnosis in the Jefferson Medical College of Philadelphia. New (7th) edition, thoroughly revised and rewritten. Octavo, 547 pages, with 164 engravings and 10 full-page plates. Cloth, $4.00 net. Lea & Febiger, Philadelphia and New York, 1914.

INFECTIONS OF THE HAND. A GUIDE TO THE SURGICAL TREATMENT OF ACUTE AND CHRONIC SUPPURATIVE PROCESSES IN THE FINGERS, HAND AND FOREARM. By ALLEN B. KANAVEL, M.D., Assistant Professor of Surgery, Northwestern University Medical School, Chicago. New (2nd) edition, thoroughly revised. Octavo, 463 pages, with 147 illustrations. Cloth, 3.75 net. Lea & Febiger, Philadelphia and New York, 1914.

THE INTERVERTEBRAL FORAMEN. An Atlas and Historical Description of an Intervertebral Foramen and its Adjacent Parts. By HAROLD SWANBERG, Member American Association for the Advancement of Science, with an introductory note by Prof. HARRIS E. SANTEE. Illustrated by 16 full plates, none of which have ever before appeared in print. Chicago Scientific Publishing Co., S. W. cor. Grace and Osgood Sts., Chicago, Ill.

THE ANATOMIST'S NOTEBOOK, A GUIDE TO THE DISSECTION OF THE HUMAN BODY. By A. MELVILLE PATERSON, M.D., Edin., F.R.C.S., Eng.; Professor of Anatomy in the University of Liverpool; Examiner in Anatomy; University of London, Conjoint Board (Royal Colleges of Surgeons and Physicians), Indian Medical Service, etc.; Formerly Examiner in the Victoria University, and in the Universities of Cambridge, Oxford and Durham. London, Henry Frowde, Hodder & Stoughton, Warwick Square, E. C.; Oxford University Press, 35 West 32d Street, New York, 1914.

RADIUM THERAPEUTICS. By N. S. FINZI, M.B. (Lond.), M.R.C.S., L.R.C.P., L.S.A., Chief Assistant in the X-ray Department, St. Bartholomew's Hospital. London, Henry Frowde, Hodder & Stoughton, Warwick Square, E. C.; Oxford University Press, 35 West 32d Street, New York, 1913.

THE EARLY DIAGNOSIS OF TUBERCLE. By CLIVE RIVIERE, M.D., F.R.C.P., Physician to Out-patients, City of London Hospital for Diseases of the Chest, Victoria Parw, E.; Physician, East London Hospital for Children, Shadwell, E. London, Henry Frowde, Hodder & Stoughton, Warwick Square, E. C.; Oxford University Press, 35 West 32d Street, New York, 1914.

PHARMACOLOGY, CLINICAL AND EXPERIMENTAL. A groundwork of medical treatment, being a text-book for students and physicians. By DR. HANS A. MEYER, of Vienna, and DR. R. GOTTLIEB, of Heidelberg, Professors of Pharmacology. Authorized translation into English by JOHN TAYLOR HALSEY, M.D., Professor of Pharmacology, Therapeutics and Clinical Medicine, Tulane University. With 65 text illustrations, 7 in color. J. B. Lippincott Company, Philadelphia and London. Price, $6.00.

MEDICAL GYNECOLOGY. By S. WYLLIS BANDLER, M.D., Adjunct Professor of Diseases of Women, New York Post-Graduate Medical School and Hospital. Third thoroughly revised edition. Octavo of 790 pages, with 150 original illustrations. Philadelphia and London: W. B. Saunders Company, 1914. Cloth, $5.00 net; half morocco, $6.50 net.

THE PRACTICE OF PEDIATRICS. By CHARLES GILMORE KERLEY, M.D., Professor of Diseases of Children, New York Polyclinic Medical School and Hospital. Octavo of 878 pages, 139 illustrations. Philadelphia and London: W. B. Saunders Company, 1914. Cloth, $6.00 net; half morocco, $7.50 net.

MODERN MEDICINE. ITS THEORY AND PRACTICE. Original Contributions by American and Foreign Authors. Edited by SIR WILLIAM OSLER, Bart., M.D., F.R.S., Regius Professor Medicine, Oxford University, England; Honorary Professor of Medicine, Johns Hopkins University, Baltimore; formerly Professor of Clinical Medicine, University of Pennsylvania, and McGill University, Montreal; and THOMAS MCCRAE, M.D., Professor of Medicine, Jefferson Medical College, Philadelphia; Fellow Royal College of Physicians, London; formerly Associate Professor of Medicine, Johns Hopkins University, Baltimore. Five octavo volumes of about 1,000 pages each, illustrated. Volume II. Diseases Caused by Protozoa and Animal Parasites—Diseases Due to Physical, Chemical and Organic Agents—Diseases of Metabolism and of the Respiratory System. Just ready. Lea & Febiger, publishers, Philadelphia and New York, 1914. Price per volume, cloth, $5.00 net; half morocco, $7.00 net.

In Memoriam

DR. ROSWELL PARK.

The sudden passing of Dr. Roswell Park on February 15, 1914, came as a great shock to his host of friends and admirers throughout the country. To the city of Buffalo, which had been the scene of his activities since 1883, his passing leaves an irreparable void. Dr. Park had so many interests that it is difficult, even at the present time, to fully estimate the remarkable influence which he enjoyed in the community.

He was born in Pomfret, Conn., on May 4, 1852, the son of a clergyman. Both his father and mother, Mary Brewster Baldwin Park, were descendants of distinguished American families, one member, Col. James Baldwin, having been a member of the staff of Gen. Washington, who was with the army at the crossing of the Delaware. He received his medical education at Northwestern University and after serving as interne at various hospitals was appointed demonstrator of anatomy in the Woman's Medical College, Chicago, in 1877. In 1879 he became Adjunct Professor of Anatomy in the Chicago Medical College, until 1882, and was then made Professor of Surgery in the medical department of Northwestern University. In 1883 he was called to Buffalo as Professor of Surgery in the University of Buffalo.

As a surgeon he was one of the foremost in this country, and was so considered abroad. One could not travel in Europe and mention that his home was in Buffalo to foreign colleagues without immediately being asked about Dr. Park, and this was true not only of

foreign surgeons, but of men of standing in many other branches of medicine. His position in surgery was due to the fact that he was essentially a progressive. When he came to Buffalo, in 1883, the era of antiseptic surgery was just beginning, and for that reason he typified in the minds of the profession and public alike the great advances which have followed upon the discoveries of Pasteur and Lister. Not only did he practice modern surgery throughout his career, but he helped to spread knowledge of the great advances in his art by timely articles. Thus within the very first years of his activities in Buffalo he was invited to give a series of lectures under the Mutter foundation on surgical pathology. These lectures compiled and adapted for the surgeon the state of knowledge on bacteriology and its relation to surgical disease, correlating these and many pathological facts, and serving as the medium through which they were made known to American surgery. It was exactly in this capacity that Dr. Park's service has been most effective. He had a remarkable faculty for compiling and setting forth logically all known data on the great questions of surgery, and as his career developed he wrote more and more broadly, and finally, in the more recent years, he published a collection of semi-philosophical essays on non-medical subjects, under the title of the "Evil Eye and Other Essays."

During his career he was honored by many institutions of learning. He obtained, in 1872, the baccalureate degree at Racine College, Wisconsin, of which his father was president, and the degree of A.M., in 1875, from the same institution. He received the honorary degree of M.D. from Lake Forest University in 1890.

Harvard University accorded him the degree of Honorary A.M. in 1895 and Yale the degree of LL.D in 1902.

One of his diversions was music. He had, for an amateur, a very considerable knowledge of music, especially of the theory of music and harmony. As a supporter of musical undertakings in the community he gave liberally of his time and his money. He was one of the directors of the Philharmonic Society at the time of his death, having previously been its president.

His interest in natural science was very keen, and he was at one time president of the Academy of Natural Sciences, a life member and a great supporter of this society.

From 1884 to 1893 he was surgeon of the Fourth Brigade of the National Guard of New York. He has been a director in three of the principal clubs of Buffalo, and in turn president of the two most important.

In his social life and in his relations to the public, Dr. Park was a very lovable and charmingly dignified personality. Those who knew him were constantly becoming acquainted with unexpected interests which he had in all directions in the city of Buffalo. He was medical director of the Pan-American Exposition and one of the attending surgeons to President McKinley. Had he been available he would undoubtedly have had charge of the case, but at the time of the shooting he was at Niagara Falls and did not reach the operating room until the operation on the President was already in progress.

One of his last activities was as chairman of the Citizen's Committee of Arrangements for the International Congress of School Hygiene which was held in Buffalo in August last. He was an ardent supporter of a greater university plan for Buffalo and it was a great disappointment to his friends that he might not have lived to see the consummation of this cherished project.

He was a member of the German, French and Italian Surgical Associations, and one of the prime movers in the International Society of Surgery. He had been president of the American Surgical Association, president of the Medical Society of the State of New York, and president of the Buffalo Academy of Medicine. He was a commanding figure in any activity which he undertook, and he possessed a charming dignity and tactfulness which is seldom met with. A great lover of books, he collected and loved to show a library of unusual size and merit. His lectures and clinics were greatly prized, and frequently visited by members of the profession far outside of Western New York.

Perhaps the most permanent thing which Dr. Park leaves to posterity as an indication of his breadth of mind and vision is the State Institute for the Study of Malignant Disease. In 1897 Dr. Park foresaw that it was time to begin systematic and extensive investigation of cancer and allied diseases. As a surgeon he felt that pathology was not making the advances in the study of this disease which its importance necessitated. Having friends in the State Legislature he conceived the idea of getting an appropriation for the investigation of cancer. The Legislature of 1897 passed an item in the supply bill of $10,000 for this purpose, but the item was stricken from the supply bill by Governor Black, who felt that as the appropriation was made to the University of Buffalo, a private institution, that it would open the door for appropriations to all sorts of institutions in the state. This set-back did not discourage Dr. Park. He succeeded in having the item again passed in the Legislature of 1898, and in the meantime, particularly through the activity of his intimate personal friend, E. H. Butler, succeeded in convincing Governor Black that he should sign the appropriation. In June, 1898, therefore, the special research in cancer under an appropriation from the State through the intervention of Dr. Park became a fact. He was for a few months director of the research until it was organized and then placed it in the hands of a man of his own selection. The appropriations for this research have survived many vicissitudes, but finally, in 1911, with the establishment of the State Institute for the Study of Malignant Disease, he became the first chairman of its board of trustees, appointed for life.

During the last four or five years of his activities he was greatly hampered by poor health, and through unfortunate business speculations some ten or fifteen years before his death, with failing health, he was obliged to continue at work to restore his fortune. He met the trials of this period with wonderful fortitude and stoicism, and at no time in his life was the greatness of his personality so evident to those who knew and admired him. His passing is a great loss to the country, and particularly to the State of New York, and an irreparable blow to Buffalo. He leaves behind him a united and uplifted profession in the building of which he was a large factor. The memory of his wisdom, charming personality, generosity and integrity will remain in the minds of the younger generation, who have known him, as a stimulating and inspiring legacy.

H. R. G.

DEATHS.

THOMAS JEFFERSON ACKER, M.D., Croton-on-Hudson, died February 15, 1914.

GOEFFREY R. BOURKE, M.D., New York City, died January 22, 1914.

JAMES J. BURNS, M.D., New York City, died February 19, 1914.

STANLEY H. MACGILLVARY, M.D., Brooklyn, died February 16, 1914.

ROSWELL PARK, M.D., Buffalo, died February 15, 1914.

RALPH LYMAN PARSONS, M.D., Ossining, died February 26, 1914.

WILLIAM KELLY SIMPSON, M.D., New York City, died February 6, 1914.

NEW YORK STATE JOURNAL OF MEDICINE

A Journal Devoted to the Interests of the Medical Society of the State of New York

JOHN COWELL MAC EVITT, M.D., Editor

Business and Editorial Offices: 17 West 43d Street, New York, U. S. A.
Address Journals sent in Exchange to 1313 Bedford Avenue, Brooklyn, N. Y., U. S. A.

Vol. XIV. APRIL, 1914 No. 4

EDITORIAL DEPARTMENT

BREAKING THROUGH THE BARRIERS.

ONE by one we see our inherited ideals sepulchered in the tomb of materialism. Imbued with the highest motives of humanitarianism and living in the most enlightened age we feel ourselves being irresistibly swept into a vortex, which carries us perilously near, if not into the current of commercialism. Cadmus has ever walked in advance of Esculapius bearing the torch which has lighted the way to the science of medicine, but now he would batter down the barriers, place Publicity in a niche in the Temple, that the populace may be the interpreters of the mysteries of this beneficent science.

"The Council on Health and Education of the American Medical Association to-day decided to present to the full convention at Atlantic City, next summer, the question of removing the ethical ban on medical publicity. The Council was practically unanimous in its favor."[1] We were not aware that there existed a ban on medical publicity but that the proscription was on self-exploitative declarations of physicians at variance with established truth, misleading and prejudicial to the public welfare. The medical profession is not dissatisfied with the existing principles of ethics of the American Medical Association. The public has made no demand for their abrogation, though somewhat mystified at the accusations and assaults made by the daily press against an ethical law observed by all honorable physicians for the purpose of safeguarding the public against its own ignorance, in its attempt to grasp and apply the theories of some near charlatan who avariciously attempts to fatten his purse, before scientific experiments determine the falsity of his doctrine. The brain of a sufferer from an incurable disease is in a turbulent sea of hope and despair, and the marsh will-o'-the-wisp is a beacon of safety for which he will ever strive. Viewing the probable results which will follow unrestricted license to appear in the lay press by physicians, why should we show moral cowardice in not continuing to show to flagrant offenders the contemptuous regard in which their conduct is viewed. We would like to believe the press' desire for medical news is sincerely altruistic, but when we read on one page an account of some truly marvelous discovery in medicine and on another the advertisement of quack

[1] N. Y. TIMES, FEBRUARY 24, 1914.

"So far as we know there is no intention or indication of any change in the position of the American Medical Association on this question; the reports in the newspapers were due to a misapprehension of the character and intent of the writer." —*Journal A. M. A.*, March 14, 1914, p. 855.

nostrums for incurable diseases, abortifacients, and the cards of arrant quacks who prey upon the afflicted, we grow somewhat skeptical and wonder if it is the same press which is so anxious for the advancement of medical knowledge. We are never surprised to see the medical articles in the news columns partake of the wildly marvelous, capitalized in a style to excite the imagination of the unthinking reader. Matter of such moment should appear in the editorial columns where one expects to find a dispassionate expression of comment on questions relating to life and death. Experience has taught the profession and the public as well, that the complexities of disease and its treatment are fraught with the greatest uncertainties. However, let us view this issue between the profession and the press without undue warmth of feeling, if we can—optimistically.

Let us hope to find some common meeting ground upon which we can coöperate in giving to the public information on medical topics from an authoritative source. Is it not better to make some concessions as the lesser evil? We can no more prevent this publicity than could Canute stay the rising tide. We desire to live in peace and amity with the press whose potency for good in disseminating medical axioms is recognized by all. We believe the press can be made to see the justice of our contention, that the subtlety of self-exploitation is not always recognizable and its potency for harm great. We furthermore believe the misunderstanding on the part of the press has been the refusal of conscientious physicians, through the fear of misrepresentation, to grant interviews to reporters who though conscientious in their efforts, often distort or destroy the ideas sought to be conveyed.

The fundamental laws in medicine of value and capable of being understood by the public, are sanitation, hygiene and preventive medicine, and upon these subjects we are expressly advised to instruct the public as physicians and as public-spirited citizens.

What we particularly object to and will continue so to do, is exploitation of theories, remedies, operations, modes of treatment, and above all personality in which the naked "I" affronts modest merit. There is no denying the fact that the competition between medical practitioners was never before so strenuous. This competition should be honorable and no unfair advantage taken of one over another. If there be one of the many, who in an interview to the press gives out knowledge common to all, the reporter grateful for the interview, knowing full well the vanity of human nature, adds to his report a laudatory biography and perhaps a photograph of the physician interviewed, who must himself admit that however beautiful, it adds neither truth nor cogency to his statement, but if he possess any sensibility there will lodge in one of his cerebral cellules a little black man, to remind him that in the eyes of his confrères, he is an advertiser and has lost something he will never regain. Remove the ban of medical publicity, establish a free-for-all race to the news columns, and who will be able to tell the quack's advertisement in one column and that of the legalized practitioner in the other. The delegates to the meeting of the American Medical Association are representative men from every section of the country. It is to be hoped that in their deliberation on any such resolution, they will bear in mind that though we are living in a practical age where the necessities of existence transform sentiment into utilitarianism, yet there is implanted within us the tradition of centuries,—that intangible something which separates the gold from the dross, the physician from the doctor of commerce.

THE PUBLICITY COMMITTEE OF THE MEDICAL SOCIETY OF THE COUNTY OF KINGS.

OWING to the appearance in the daily newspapers of sensational articles on medical subjects in which the names of members of the Society figured conspicuously, at the April meeting, 1913, of the Council of the Medical Society of the County of Kings, on a motion offered by Dr. John C. MacEvitt, the president was authorized to appoint a committee consisting of three members to seek coöperation with the editors of the public press in order to devise some plan whereby articles and interviews on medical topics by members of the Society, published in the daily papers, should be truthfully and correctly reported. President Dr. J. M. Winfield thereupon appointed the following committee: Dr. John C. MacEvitt, Dr. Joshua M. Van Cott, Dr. Frederick Tilney.

At a meeting of this Committee it decided that its objects were:

1. To prevent the publication in the daily press of misleading and erroneous statements on medical topics.

2. To prevent the publication of cures and surgical operations so exaggerated and false that mental anguish, physical suffering and expense would be imposed upon the sick and afflicted.

3. To prevent the reporting of ordinary medical cases and surgical operations of no interest to the medical profession which are misunderstood by the public and serve but to exploit the narrator.

4. To act as an advisory committee if so desired to members of the Society who contemplate publishing medical articles in the newspapers and who desire to conform to the principles of ethics.

5. To further the publication of scientific articles on medical subjects relative to the public health.

6. To seek the coöperation of the editors of the public press to accomplish these purposes.

The Committee added: "That it desired it to be understood that it did not discourage publicity, but on the contrary advocated the greatest publicity possible on the liberal ethical lines of the American Medical Association which encourages members of the medical profession to give as wide publicity as possible to all matters pertaining to hygiene, sanitation and public health, but discourages all direct or indirect self-advertising. That the Committee recognized the futility of any attempt on its part to dictate to the press what it should or what it should not publish. It was thought by the Committee that the adoption of these suggestions would relieve members of the Society of any fear of criticism and aid representatives of the press in securing interviews without difficulty. The Committee wished it thoroughly understood that it would in no sense act as a complainant body against offenders but would willingly extend its advice to those who sought its aid."

REPORT OF THE COMMITTEE ON PUBLICITY AT THE ANNUAL MEETING OF THE MEDICAL SOCIETY OF THE COUNTY OF KINGS.

To the Medical Society of the County of Kings.

The Committee on Publicity has the honor to report as follows:

Since the appointment of the Committee the daily press of this city has been singularly free from self-exploitative articles by physicians.

It is most gratifying to relate that two leading newspapers, the Brooklyn *Daily Eagle* and the New York *Press,* have availed themselves of the advice of the Committee regarding the publication of communications of a suspiciously doubtful character. It is also pleasing to add that prominent members of this Society who contemplated submitting contributions on medical subjects to the lay press consulted the Committee on the propriety of their proposed action, stating at the same time that they desired to be guided by the advice of the Committee. A most satisfactory agreement followed in each case. When it becomes plain to the medical profession of this city that the Publicity Committee advocates the publication of articles relating to medicine of value to the community, that it is neither inquisitorial nor prosecutory, that its duties are simply advisory, the wisdom of your appointing this Committee will appeal to every member of this Society who holds loyalty to tradition above ephemeral notoriety.

Signed: John C. MacEvitt, M.D.,
Joshua M. Van Cott, M.D.,
Frederick Tilney, M.D.,
Committee.

THE NEXT ANNUAL MEETING.

FULL information regarding the scientific program will be found on page 221. Members are urged not only to attend the scientific session and illustrative clinics, but to prolong their stay over Friday and Saturday, when all the hospitals of Greater New York will grant them an opportunity to witness surgical, medical, and special work by prominent members of the profession.

The banquet to be held on Wednesday, April 29, bids fair to be the most interesting one in the history of the Society. The Medical Society of the County of New York will hold its scientific session on Tuesday evening, to be followed by a collation to which all visitors are most cordially invited.

On Thursday afternoon there will be an opportunity to visit the Quarantine Station and view the beautiful harbor of New York. Another excursion will be to the institutions of the Department of Health, situated on various islands in the East River.

It is hoped that the efforts of the different committees to make the meeting the most successful one in the history of the State Society will be rewarded by the largest attendance ever known.

Thomas J. Harris, *Chairman,*
Committee on Scientific Work.

Original Articles

THE RELATION OF THE ILEOCECAL VALVE TO "LANE'S KINK."

By WILLIAM FRANCIS CAMPBELL, M.D., F.A.C.S.,
BROOKLYN-NEW YORK.

DURING the past five years we have been systematically studying the gastro-intestinal tube, primarily for the purpose of observing and classifying its developmental defects. Some five hundred cadavers have been thus examined and the variations and anomalies carefully noted. In conjunction with this may be added some two hundred clinical observations which form the material from which many of our conclusions are adduced.

Many and curious are the defects of this important tube which are the result of evolutionary changes,—the price man has paid in evolving from a quadruped to a biped. One of the most interesting and illuminating studies is the comparative anatomy of the gastro-intestinal tube,—to note the changes which the erect posture has imposed.

It will be observed that the viscera of the lower animals are loosely attached, that they fall forward, supported by the belly-wall acting like a hammock. In man, however, the erect posture imposes certain mechanical changes. This hammock-like function of the belly-wall must be replaced by some substitute to meet the new mechanical conditions.

How has the obligation been met?

Change in posture has been met by a corresponding change in the mesenteric attachments,—these mesenteric attachments have been shortened, or altogether eliminated by direct fusion of the larger viscera with the posterior abdominal wall.

Nor is this evolution complete. It is still going on, and will continue its beneficent mission of adaptation to environment.

Nature, however, does not attain her ends in all cases, she is often thwarted; the forces do not properly coöperate to achieve her purpose. Thus the abdominal viscera sometimes revert to the lower type; viscera with loose attachments, and long mesenterics; and here we find the relaxed abdominal wall, with the "pot-belly" of enteroptosis.

These defects give rise to intestinal stasis and that mild, but constant fecalemia which produces a chronic toxic state, constantly depleting the vital income and responsible, in a large measure, for that vital insolvency which is expressed by the term neurasthenia. And more, this fecal stasis, long continued, is the etiological factor in the production of those mild infections of the peritoneal covering of the intestinal tube, which results in the formation of those pseudo-membranes which ankylose and constrict the intestine.

These membranes, it will be noted, are invariably formed at points along the intestinal track where the fecal current is slowest, hence at the points of greatest potential toxicity.

It will be noted, when we observe the gastro-intestinal tube in its entirety, that its anatomical structure is modified according to function. Furthermore, there are sharp lines of demarcation as the structure and function changes, and at these points are placed valves, so that each section of the gastro-intestinal tube has its door of entrance and exit which is opened and closed automatically as the contents of the tube is prepared for its next stage.

For example: The stomach triturates and prepares the food for the small intestine, but it is by means of the pyloric valve that it is able to control its own contents; and not until the contents are sufficiently acidified does the pyloric valve relax and allow the finished product to pass on. The "acid control of the pylorus" is one of the most remarkable mechanisms in the body.

Again: The small intestine is the organ of nutritional absorption, and it is by means of the ileocecal valve that it controls its own contents and prevents a reflux of material from the colon.

The function of the large intestine is to take care of the fluid waste-material which is the by-product of the small intestine,—this it does by extracting the water and passing on the semi-solid residue, to be unloaded periodically through the sphincter ani,—the valve at the end of the gastro-intestinal tube. Thus you will observe, it is the valve which permits individual effort on the part of each section of the digestive tube.

I desire to direct your attention to one of these valves,—the ileocecal, and consider its relation to an important pathological condition known as "Lane's Kink." This condition we found in eighteen per cent of our subjects. It is a veritable ankylosis occuring near the end of the ileum, within a few inches of the ileocecal junction, a membranous attachment which deforms the ileum and produces a "Kink" or obstruction, which is known in surgical lore as "Lane's Kink." (*Fig. 1*).

This ankylosis of the ileum produces definite symptoms of obstruction and abdominal distress which often simulate chronic appendicitis.

Note the clinical findings in the case of Miss B., twenty-four years old, operated two years previously for chronic appendicitis with symptoms unrelieved. She complained of distress in the right iliac region, chronic constipation, and general malaise.

The patient exhibited a sallow complexion, loss of muscular tone and nervous irritability.

Upon opening the abdomen there was found a membranous band forming a distinct ligament which was attached to the terminal portion of the ileum opposite its mesenteric border and anchored it to the peritoneum of the iliac fossa. Thus was formed a distinct kink ("Lane's

Kink") which obstructed the ileum near its termination. When the bands of adhesion were severed, the intestine rolled out and assumed its normal relations. Complete, immediate relief of symptoms followed recovery from operation.

Fig. I.—"Lane's Kink."

Some three years ago, the author operated upon a patient presenting symptoms of chronic appendicitis. Upon opening the abdomen the appendix presented a normal appearance, but there was a distinct "Lane's Kink" which rationally accounted for the indefinite symptoms. This "Kink" was relieved in the usual manner by severing the bands of adhesions, the tube then straightened out and the raw surfaces were covered over with an omental graft. The patient was apparently relieved of her symptoms and disappeared from the author's observation.

About four months ago, this patient again consulted the author for symptoms similar to those presented before the first operation. Upon examination nothing definite could be found but a retroverted uterus.

The patient again submitted to operation for the purpose of having the round ligaments shortened to correct the backward displacement of the uterus. Upon opening the abdomen our interest naturally centered upon the condition of that portion of the ileum which had been the site of the previous "Lane's Kink." To our astonishment, another "Lane's Kink" had formed involving the very same segment we had previously relieved.

About this time we began to hear a good deal from the Roentgenologists,—Jordan, Case, and others,—about incompetency of the ileocecal valve, and it occurred to the author that it was not a far-fetched hypothesis to suppose that "Lane's Kink" did not explain itself, but that it was the by-product of an incompetent ileocecal valve; and further, it is not too much to suggest even, that "Lane's Kink" is an effort on the part of nature to compensate for an incompetent ileocecal valve.

With this hypothesis in mind we began systematically examining the ileocecal valves in our cadavers to determine whether "Lane's Kink" is an evidence of ileocecal incompetency; for if this is true we are not curing our "Lane's Kinks" by simply severing the bands of adhesions and straightening out the ileal tube, this is only a preliminary step. If our hypothesis is correct, we can only cure our "Lane's Kinks" by correcting the incompetent ileocecal valves.

The ileocecal valve is one of the most beautiful mechanisms in the body, it must be seen to be appreciated. (*Fig. II*).

Fig. II.—The ileocecal valve seen through an opening in the cecum—The upper lip projects over and beyond the lower lip.

The opening of the ileum into the cecum is guarded by a valve to prevent regurgitation from the colon into the ileum. The valve is formed like a button-hole and consists of two segments or lips, an upper and lower segment, which project into the lumen of the large intestine. When the cecum is full the lips of the valve are drawn together and the ileum shut off. When the cecum is emptied the lips of the valve are relaxed and the ileum opened. Thus the ileocecal valve works automatically according to the state of the cecum.

Note a second peculiarity of this valve. This valve is formed by an invagination of the ileum into the cecum, this is why intussusception occurs so frequently at this site.

And again note that the upper lip projects over and beyond the lower lip forming a perfect shed which protects the opening by directing the antiperistaltic current over, instead of into, the ileal opening. (*See Fig. II*).

In examining our ileocecal valves we first filled the cecum with water and noted whether under slight pressure there was leakage into the ileum. We then examined the valves and noted the anatomical changes in those which proved incompetent. (*Fig. III*). In the latter group there was atrophy of the valvular segments, retraction and a sort of disinvagination of the ileal segment. (*Fig. IV*).

FIG. III.—Incompetent ileocecal valve seen through opening in cecum—Note atrophy of upper lip.

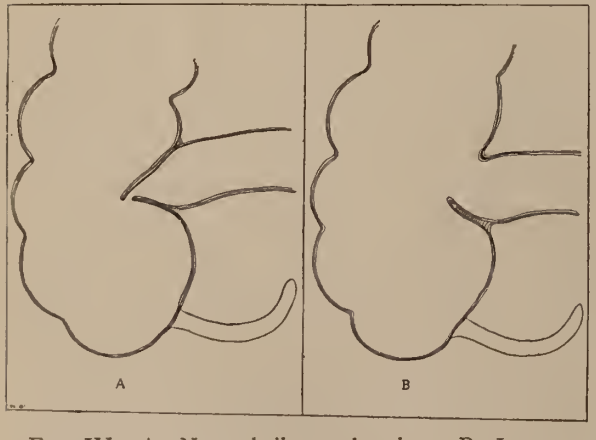


FIG. IV.—A. Normal ileocecal valve. B. Incompetent ileocecal valve.

In every instance of "Lane's Kink" we found an incompetent valve; and this, after all, is the most rational explanation of its pathology, for the fluid waste backing up from the cecum into the ileum will influence most markedly the portion of gut nearest the source,—*i. e.* the terminal portion of the ileum. This distended portion of gut will sag down because of its own weight, and a long continued fecal stasis will be followed by a mild infection of the peritoneal covering, producing pseudomembranes or adhesions which ankylose and finally anchor the intestine in a permanent kink.

If our hypothesis is correct, the present treatment of "Lane's Kink" is futile. There must be a restoration of the function of the ileocecal valve or the kink will return as in the case already cited.

THE TREATMENT OF TYPHOID FEVER.*

By W. STANTON GLEASON, M.D.,

NEWBURGH, N. Y.

PREVENTIVE medicine has made great strides within the past twenty years. State and local boards of health have been given greater power and scope, and the general practitioner, by force of requirement, has been roused from partial lethargy in sanitary matters, and is now striving to protect those of his community who depend upon his advice and guidance. The treatment of typhoid fever parallels the history of preventive medicine both in advancement of method of prophylaxis and the actual principles applied in the management of the individual case from incipiency to convalescence. No acute disease is treated, to-day, with as deep a knowledge of the practical underlying conditions existing as in typhoid fever. In fact the advanced ideas applied in the direction of the treatment of our patient marks the progress of general medicine. Typhoid fever is plainly an accident, which can usually be traced to a positive source; and, as Osler emphasizes, it is not only the duty of the physician to skillfully treat the disease, but to be also solicitous that no other cases arise from that patient. If the specific germ could be destroyed as soon as it left the human body typhoid fever would soon be extinct.

If, however, the disease-bearing agent slips away from its immediate host, then a train of possibilities follow through the medium of water, milk, oysters, and that conservation of energy, the omnipresent fly. The typhoid bacillus is probably not capable of multiplying in water; but can live in it from two to three weeks. The potability of water is best guarded in large centers of population by filtration plants. In the suburbs and country districts boiling the water renders it

* Read at the Annual Meeting of the First District Branch of the Medical Society of the State of New York, at Yonkers, October 9, 1913.

safe and sanitary. Jensen states that where the water supply is safe, local outbreaks come principally through milk; if the milk supply is suspected, possible infection should be traced to its source.

The United States Department of Agriculture has proven conclusively that oysters will take up the bacillus typhosus and when so infected, eaten raw, will cause infection. The intermediary plan of fattening oysters in fresh or contaminated waters is now practically eliminated through the active work accomplished by government officials. Flies we have always with us, and the best argument against them is careful observance of general sanitation.

Vaccination as a prophylactic measure is gaining a stronghold upon the profession and laity. We have two varieties of bacterial toxins; those that are easily diffusible and are called extoxins, and those not easily diffusible, called endotoxins, which are set free only when the bacteria die and disintegrate.

When endotoxins are injected into the human body they produce antibodies which have a special effect upon corresponding micro-organisms. The method of injecting dead typhoid bacilli into the individual to protect him against the disease, originated with Fraenkel, and was first used extensively by Sir A. E. Wright. The antityphoid vaccine of to-day, as elaborated by Pfeiffer, is a strain of typhoid bacillus that will produce great numbers of antibodies when injected into human beings. The favorable reports of Wright up to 1902, and the army statistics of Russell, are so well known, that it is not necessary to recapitulate. It has been held that it is unsafe to vaccinate during an epidemic, because of the increased susceptibility during the "negative phase" following an inoculation. Russell and Pfeiffer, however, state that it is very doubtful if there is any increase of susceptibility following inoculation.

A most important factor in the successful treatment of typhoid fever is the judgment used in keeping the patient's vigor up to the highest standard. The disease is prolonged and enervating and there is a constant and serious drain upon the vitality, a greater demand for food, and a varying diminished power in the digestion. It is apparent in acute fevers that the fats, albumens, and proteins of the tissues are under a heavy tribute to sustain the patient in the long serious illness. The diet in typhoid fever a few years ago was absolutely insufficient to sustain the patient during a prolonged sickness and if our charge retained sufficient energy to weather the febrile activity, a condition of almost starvation remained with great emaciation and a tedious convalescence.

Coleman's plan of caloric feeding has pointed out to us a most satisfactory method of sustaining the patient's energy and vitality throughout the siege of fever. We should aim to give our fever patients from twenty-five hundred to three thousand calories of nourishment in the twenty-four hours, meeting this average gradually, as the condition of the patient indicates. The estimated calories are charted daily by the nurse in charge. Solid food has no place in the dietetics of typhoid fever, as its use frequently causes serious gastric and intestinal irritation. Milk was long deemed the ideal diet for the disease, but recent ideas and experience have limited its use, or omitted it entirely. It is held that the caloric value of pure milk is too small for the patient's sustenance and consequently the body consumes a large amount of its own fat and protein. This is proven, for two quarts of milk in twenty-four hours represents only one thousand three hundred calories, while our patient requires over twenty-five hundred calories. On this basis we must limit the milk, and equalize the balance with other food elements. It has been my plan to use milk as a menstruum for lactose, and in addition, one to two raw eggs every four hours. Following this method the total calories for twenty-four hours can be made to equal the necessary requirement, and the condition of the patient during the fever and convalescence fully justified the procedure.

Vaccination during typhoid fever is attracting considerable attention from the medical profession. Smallman uses three hundred millions of dead bacteria at an inoculation, making the interval every third day. He reports a mortality of 8.3 per cent. Sappington prepared autogenous vaccines, being governed by the opsonic index. Leishman holds that decided curative properties were shown by using three to four hundred million every fourth day. When the diagnosis was well established it has been my practice to inoculate the patient at once with one hundred million dead bacteria, repeating the dosage every third day until four hundred million have been given. This procedure in a record of thirty-two cases, both in hospital and private work, has been satisfactory. The majority of those inoculated showed but slight reactions, the temperature as a rule ranged lower and the activity of the symptoms moderated. Deductions, however, cannot positively be drawn from the experience in one or two epidemics, but we can assume that the therapeutist of the future will continue the inoculations during the early stages of typhoid fever in progressively increasing dosage.

Intestinal Antiseptics.—The particular choice of intestinal antiseptic in the past frequently marked the individuality of the man in his treatment of typhoid fever, and statistics were often furnished extolling the relative value of one special drug over another. Some idols of the past decade, however, have been rudely shattered. A research was conducted under the auspices of the "Therapeutic Research Committee on Pharmacy and Chemistry," of the American Medical Association, by Norman M. Harris, M.B., of Chicago, to determine the value or inefficiency of intes-

tinal antiseptics. A voluminous report was made at the Atlantic City Meeting, in June, 1912, and the conclusion of his findings was, "That insofar as figures go, his did not go to prove that any of the antiseptic agents employed exerted any beneficial action, and in spite of favorable reduction being obtained by any method whatever, his plate cultures plainly informed him that antiseptic drugs fail to kill off per gram of feces, millions of indol-producing bacteria, whose habitat is the large intestine." This report with the fecal findings made before and after the special antiseptic was used covered every drug that could be employed as an intestinal antiseptic. No report was made as to the value of pure cultures of the Bulgarian lactic bacilli, the experiments being along the line of drugs which have a preconceived value on intestinal antisepsis. There are many of us who have faith in the value of the lactic bacillus as an inhibitor of fermentation in the digestive tract, and this faith has been borne out by practical tests of its utility, in typhoid fever and intestinal diseases of childhood. George Herschell, Fellow of the Royal Society of Medicine, London, England, published a paper in the *Lancet,* in 1908, on "The Lactic Acid Bacilli in the Treatment of Disease." Herschell following out the lines laid down by Metchinkoff and Cohendy, deduced a series of impressive results in a varied number of cases. Since that time the medical profession have gradually accepted the use of the pure cultures as an efficient means of checking the anærobic bacteria in the large intestine. Tympanitic distention of the abdomen, due to gases set free by fermentative action, has long been a menace to the satisfactory progress of our typhoid patient. The triple defense of the system mentioned by Combe against auto-intoxication, the liver, the intestinal mucosa, and such glands as the suprarenals and thyroid, are so weakened in the second week of fever that their protective action against intestinal toxins is reduced. The pure cultures of the Bulgarian bacillus can be given to overcome the putrefactive bacteria which must be greatly increased in such conditions, and also given to take up the defense of the system against impending toxæmia. Metchinkoff and his pupils have announced this year, that the intestinal lesions found in typhoid were not wholly due to the Bacillus typhosus, but these lesions were also produced by several groups of anærobic bacteria. Of these groups they found the Bacillus satellitis in the stools of nearly every case of typhoid fever examined; but never found in the stools of the normal individual. The Bacillus satellitis when injected into guinea pigs always produced ulceration in Peyer's patches. When the Bacillus typhosus, however, was injected into guinea pigs, there was simply swelling of the patches, without ulceration, the argument being that the Bacillus satellitis was the cause of the ulcerative process. These findings, while not entirely convincing, are certainly impressive, and point to the potency of mixed infections in typhoid fever and the imperative necessity of combatting them. I usually give four drams of the pure culture of the Bulgarian bacilli during the twenty-four hours, and under its use there is little or no discomfort from gaseous distention of the abdomen, and it is reasonable to believe that the patient is at least partially protected from toxæmia. We know that the pure cultures of the Bulgarian bacilli have no action against the bacilli of Eberth, but they will act against the anærobic flora of the intestines.

Hydrotherapy.—It is evident from published reports of typhoid treatment that the use of cold water as laid down by Brand is losing favor. Whether our typhoids are not as severe through modern methods of treatment, or the typhoid state rarer than twenty years ago, is a question, but it is positive that the cold sponge, wet pack, and ice-water enema are much more in evidence than the tub plan of Brand. We appreciate that persistent high temperature must be combatted, and after eliminating any unusual cause, cold water is our best aid, applying it judiciously and holding in mind the principles of governing the temperature curve. Outside of the lines of treatment laid down, the general management of typhoid fever is largely expectant. It is for us to meet emergencies as they arise, using little medicine, but maximum doses of common sense. No summary is necessary in closing this paper, for it is essentially a recapitulation of modern thought, with a tinge of original investigation and method which I present for your consideration.

REFERENCES

Hare, *Modern Treatment,* vol. I.
Herschell, *Lactic Acid Bacillus in Treatment of Disease.*
Citations:
Gleason, *Diet in Acute Diseases, Lactic Acid Bacillus.*
Also citations from medical notes in various medical publications.

RECOGNITION OF EARLY HEART-INSUFFICIENCY.*

By ALBERT T. LYTLE, M.D.,
BUFFALO, N. Y.

THE first to come in contact with a patient suffering cardiac insufficiency at a time when the institution of proper management will indefinitely prolong useful activity, is the family physician; it is wise, therefore, that the earliest signs of such failure be frequently emphasized so that they may not escape recognition.

How common it has become to see men of great activity in business, in professional life, or in agricultural pursuits compelled to give up at an age when past experience is of greatest value, to retire from the arena either to an early grave

* Read before the Medical Society of the County of Chautauqua, at Fredonia, May 27, 1913.

or to the armchair and slippers of old age,—all owing to cardiac failure. I have always pictured the curve of the development and efficiency of a human life to be like the profile line of the ascent, top and descent of an elevated plateau. The first four decades of a normal life being spent to reach the level, the next two decades to travel upon the plateau, and the last decade of the biblical three score years and ten to a quick run down the decline, or a more gradual one of several decades to oblivion. It certainly seems that the efficiency of man is completely developed in the first forty years of active life and that the next twenty or thirty years are spent in a losing effort to maintain an even adjustment of income to expenditure.

In the scheme of nature there is provided a large surplus of reserve force which S. J. Meltzer has so graphically described as the "Factors of Safety." If only a small modicum of these factors remain intact in each organ necessary to life, the integrity of the individual as a whole is secure, his efficiency is one of stability; but the progressive loss of these factors at once determines loss of capacity to do work, a negative instability and diminished integrity.

A normally functioning heart is one that is always capable of meeting the demands made upon it. The function of the heart is to supply to the tissues a constant stream of material capable of nourishing them and of replacing their loss of energy and to remove such waste products of tissue life as are capable of entering the circulatory channels. Physiology teaches that the heart muscle is possessed of five functions: (1) Stimulus Production,—the power of producing stimuli which can excite the heart to contract; (2) Excitability,—the power of being able to receive a stimulus; (3) Conductivity,—the power of conveying a stimulus from fiber to fiber; (4) Contractility,—the power of contracting when stimulated; and (5) Tonicity,—the power to retain a certain amount of contraction even when the active movement has ceased. A heart is only normally efficient when these five functions are coördinating. Deficiency of power in any of these functions would eventually produce an insufficient heart.

An insufficient heart is incapable to a greater or less degree of exercising the coördinated function of contractility, it is a heart in which the factors of safety are being exhausted. As McKenzie says: "Heart failure is due to the exhaustion of the reserve force of the heart muscle as a whole or of one or more of its functions." This is physiological for advanced age, but early heart insufficiency is a premature exhaustion of the heart muscle and its power to regain tone determines the degree of permanent failure to normally functionate.

The importance of the early recognition of heart insufficiency lies in the value of prophylaxsis, in conserving the damaged factors of safety, in converting an incipient failure into a normally healthy action. At this time hygienic and dietetic measures, as well as the regulation of habit of mind and body, will almost invariably put the heart into a condition of compensation so that life activities may be continued in a safe and sane manner to a merited successful completion.

Cardiac insufficiency is entirely due to degenerative changes in the heart muscle, the integrity and tonicity of which are dependent upon the fullness of its blood supply. Owing to high specialization the heart muscle, when injured, does not easily regenerate,—such injury is all too frequently followed by fibrosis; the inherent weakness of which is permanent, the presence of which neutralizes some of the factors of safety.

A pericarditis, or an endocarditis always involves the myocardium; an endarteritis lessens the food supply of the heart muscle; an injury to the vagus system may involve the whole heart; a slight damage to the sino-auricular node or to the auriculo-ventricular node interferes with coördination of the heart-muscle functions. Hence a disease involving any of these parts during the life of the individual may determine the loss forever of enough of those factors of safety to handicap this organ so that the heart is unable to weather the stress and strain put upon it during the critical period of life, the sixth decade. An inherited syphilitic taint, an unstable nervous system, failure to develop normally, the infectious diseases of childhood,—diphtheria, measles, scarlet fever,—those of early adult life,—rheumatism, typhoid, malaria, an old kidney difficulty,—all may destroy enough of these factors of safety whereby an otherwise healthy heart early becomes insufficient under the demands of a strenuous life. The stress and strain of modern life, with its auto-intoxications from over-eating, over-drinking, under-sleeping, vicious habits and nerve-racking excitement, are responsible for the premature destruction of many of these factors determining an efficient heart during the journey across the plateau of life. These subtle and ever-changing effects cause an additional burden to a heart, the physiological load of which becomes constantly heavier during the first forty years of life. All of which but indicate that the onset of heart-failure is gradual and never sudden, that there is a time early in the progress of these degenerative changes when slight but persistent symptoms of cardiac insufficiency are present and demonstrable, that if these symptoms be recognized and heeded the heart can be made efficient for many years of active, constructive life.

The early recognition of these compass-signs requires careful observation over a considerable time. The records of such modern instruments of precision, as the sphygmomanometer, the sphygmograph, the polygraph and the electrocardiagraph would, of course, offer the very earliest evidence of failing heart muscle, but

unfortunately most of these instruments are complicated and require so much technical skill as to be almost out of the question for the average practitioner; yet he is the one, who coming early in contact with a failing heart can conserve its reserve force more surely than the later coming expert ability of the specialist. The blood pressure instrument has been so simplified that now no practitioner need be without its aid in studying cardiac conditions; until the other instruments have been equally as simplified the complaints and history of the sufferer combined with the observations of the examiner will have to be depended upon to determine the importance of certain symptoms.

As the first sign of heart failure is invariably subjective, so by far the most useful indices are the symptoms of which the patient complains. The first symptom of importance as well as in point of time of appearance is some difficulty with respiration,—a little hurry,—a little smothery feeling very unusual and under conditions in which the heart is seldom if ever accused of being at fault. How frequently is one told in reply to careful questioning that shortness of breath comes upon slight overexertion, or upon exertion that never before produced such phenomenon, or that the patient had of late awakened with a smothering sensation supposedly the result of a dream. In estimating the diagnostic value of this very important symptom, such causes of hurried and difficult breathing, as indigestion, obesity, emphysema, tuberculosis, neuroses must be carefully excluded. In my experience this symptom preceded all other signs directly due to heart-failure by a considerable period of time; not infrequently it remains unnoticed by the patient until after the onset of other symptoms brings the patient under observation, but quite invariably careful questioning will prove its early appearance. While the reason for this prompt occurrence of dyspnea or "air hunger" is a moot question, in the light of modern interpretation of heart function, it is probably caused by a disturbance of the sino-auricular node, a change in the tonus of the pneumogastric (vagitone). Recent studies on respiration and the circulation by Henderson and Barringer of Yale seem to establish that "The first indication of circulatory failure is a deviation of the volume curve" (that is, the systolic discharge of blood is less in volume for the rate of ventricular contraction than under normal conditions); and that "tonus of heart muscle is strikingly affected by blood gases and the coronary blood supply," and, that "the utmost assistance that respiration can afford the circulation is to maintain a venous pressure sufficient to distend the right ventricle as rapidly as it relaxes and as fully as the duration of diastole allows," and, that increased respiration aids in maintaining venous pressure at a point of maximal efficiency for the prevailing rate of heart beat, which rate determines tonus of heart muscle and volume of the blood stream. Applying these physiological experiment-deductions to a failing heart, an explanation of the early appearance of respiratory hurry is the calling into use factors of safety to maintain cardiac tonus and a proper circulation in the heart itself.

One early sign is pain of the type very frequently described as pseudo-angina. The pain is not lancinating in character, but is rather a feeling of pressure over the precordium, which the patient often tries to relieve by pounding the chest. The classical constriction-pain, or that shooting to the left shoulder and down the arm accompanying true angina is seldom found early. The discomfort is commonly described as if the heart were held in a grasp much as one holds a fluttering bird. Again, the pain is more or less neuralgic in character and referred to those areas which Ross and McKenzie have described as viscero-sensory reflex areas. Beginning loss of the food supply of the heart from endarteritis of the coronary vessels; an occasional, more or less intense spasm of these pathologic vessels easily explain the occurrence of this pain. In my experience the earliest manifestations of pain from heart insufficiency have been located at the second and third interspaces, and they have been constricting in character, with occasional sharp pains of short duration at, or near the apex area, described by the patient as the well-known "stitch in the side."

A very noticeable feature accompanying these cardiac failure symptoms of dyspnea and pain, is an insuppressible sense of fear of the presence of a morbid process out of all proportion to the gravity of the pathological condition present.

Another very early symptom is a consciousness on the part of the patient of a general lack of that feeling of well-being so constantly normal to the healthy individual, and which is voiced in the expression, "I guess I'm growing old." The individual feels without knowing why a lessening of *"vis vitae,"* a loss of ability, or power, or force to initiate and to carry through projects which formerly incited to physical and mental effort. This is not the kind of wholesome tired feeling which comes to the normal person after physical exercise; there does not seem to be a grossly measurable loss of muscle power or nerve force, but rather a general loss of tone so symptomatic of neurasthenia. The patient frequently says, "I do not feel like doing that to-day for some reason or another," or "I am not quite up to it," or "These problems bother me more than they used to do." Under pressure the individual is as capable of accurately and completely doing the mental or physical work demanded, as before, but the fatigue of the sustained effort is greater. There is seldom complaint of this symptom by the patient, it can only be elicited by careful questioning.

Another early symptom is associated with the digestive tract. Certain things formerly eaten or drunk with impunity, that left no apparently

bad results, produce more or less digestive disturbance and are voluntarily avoided, quite frequently with the statement that they are not cared for any more.

Still another symptom, often noticed quite early, is an extremely mild grade of cyanosis, constantly apparent under the finger nails and lips.

And yet another symptom occasionally present, never intense, always quite transient, is vertigo. These spells of dizziness are usually laid to a disturbance of digestion, or to a badly acting liver. Cerebral circulatory spasm is the probable explanation for this symptom.

Almost invariably careful pulse records show variations in rate, rhythm and force from the normal for the individual. Quite early, being decidedly infrequent, so that one might be misled, as heart weakness and frequent pulse are usually synonymous. I have always thought this phenomenon to be due to an effort to secure needed rest.

In considering these symptoms it is to be recalled that they are those of advanced cardiac insufficiency at which stage they are pronounced and unmistakable. All these signs are not present in the very beginning and as I have endeavored to indicate, they are so transient that only by careful, almost daily observation, or as the result of persistent questioning is one made suspicious that heart insufficiency is really at the bottom of their appearance. Individuals so affected are usually carrying an excess load, so that the circulation is unable to properly maintain the metabolic balance; it follows, therefore, that unless some relief is given the overburdened heart it will manifest its intolerance by a strike. The condition is then for the first time realized. Activities are largely curtailed, and to live any length of time the patient must retire from the firing line; but if the signs mentioned above are recognized sufficiently early, the elimination of certain useless, extravagant, expenditures of physical energy will allow the individual to remain at the front. These cases undoubtedly demand careful watching and control. Their management depends largely on what might be described as masterly inactivity. At no time is the aid of drugs required. The questions of personal hygiene and of carefully arranged diet are all that are demanded.

As the degenerations at the bottom of heart-failure so frequently follow the infectious diseases, the heart being slower to recover from the effects of the poison than are the other organs of the body, it is imperative that longer periods of convalescence and freedom from responsibility, than are usual, should be advised so that the highly specialized heart-muscle cells may regenerate instead of degenerate.

How truly writes Andrews of St. Bartholomew's, London, as mentioned in *American Medicine*, that it is dangerous to pass the fiftieth mile-stone of life at the speed, and under the pressure, developed in the years preceding. Nervous, mental and physical labor must be done under less pressure; only the exception can maintain the pace and live. Those who successfully maintain their places in the conflict do so at low pressure, with even expenditure, and careful conservation of energy,—never to exhaustion.

The following are brief synopses from three of my case reports which seem to me to illustrate the points emphasized in this paper. I believe these patients were materially benefited, and the usefulness and comfort of their lives prolonged by considering each, almost from the initial consultation, as a case of early heart insufficiency.

Case I.—"H." Male, married twice. Under my observation for fifteen years. Fifty-five at time of death. Managing partner in large, very successful lumber concern. Spare in build, weight steady at 135 pounds. Family history negative. An immoderate user of tobacco, habits otherwise negligible. Very energetic and quick in all movements. A very hard worker, everything else in life being made secondary to business. Took practically no recreation from childhood, began business life at twelve. Took no exercise to offset office confinement. Ate three hearty meals a day, the mid-day one, of the kind furnished a hard-working laborer or farm hand. Never had had any long or serious illness. Between forty-five and fifty had three attacks of nervous exhaustion, each of short duration. Just after the first attack, upon earnest solicitation, began taking a yearly vacation of one month, usually during February or March, on a plantation in the West Indies. Physical examination always negative, except to suggest arteriosclerotic changes probably active. The heart was not enlarged. The apical sounds were good but slightly ringing with second slightly accentuated; at the base the aortic closure was accentuated but not thought excessive at the age; the intervals were normal, the rhythm was regular; the pulse rate was seldom less than 75, more often 80, but always less than the nervous symptomology would indicate. Systolic blood pressure averaged about 140 m.m. Hg. The urine was negative except that the acidity was usually high. At the time of first attack of prostration, after careful questioning, the patient stated that his breath was short now and then, apparently without cause. As time went on shortness of breath became more frequent following slight exertion, such as hurrying for a street car. After curtailment of duties so that the demands upon time and energy were diminished about one-half, these attacks subsided. In addition to the dyspnea there was an occasional feeling of discomfort about the heart, which caused apprehension, at such times no abnormality, other than that mentioned, was dis-

covered. In the summer of 1910 while taking his vacation, and after three weeks of rest, when feeling, as he stated, the best in years, he died suddenly, probably instantaneously, from heart failure just after the mid-day meal.

CASE II.—"B." Male, single. Under my observation for about ten years. Sixty at time of death. A lawyer, prominent in professional and political circles. Stocky in build, weight average 165 pounds. Deliberate in both mental and physical activities. Family history good. Indefinite history of rheumatism. Habits model during my acquaintance, although formerly free user of both tobacco and alcohol. Graduate of one of the great universities of the United States; stroke oar on the 'varsity team at a time when careful medical supervision of growing young men, active in athletics, was unknown; returned from college with a permanent heart damage, causing marked hypertrophy. Although warned by medical advisers that he must beware of both nervous and muscular over-exertion, for several years, he filled an important public position, and fought many vigorous, political campaigns with success. He came to me complaining of difficulty in breathing on slight exertions; the heart was irregularly intermittent, the "sinus irregularity" of to-day; there was a loud systolic bruit heard in both aortic and apical areas; pulse rate low, average highest record 80; systolic blood pressure seldom exceeded 150 m.m. Hg. Urinary findings low specific gravity and high acidity. Rest, carefully regulated exercise and diet always improved the cardiac efficiency; but after the second of two severe attacks, two years apart, both following an automobile journey of a few hours against the wind, the patient died in 1912 from right-sided dilatation.

CASE III.—"H." Male, married. Under my observation for thirteen years. Present age sixty-two. Specialty manufacturer, business constantly growing, manages the buying, selling, and financing, the manufacturing being in the hands of a partner. Rather slight build, weight average 135 pounds. Always well. Family history negative. Habits good, probably too great a smoker. Nervous temperament, very energetic. Grippe short duration in 1906, nearly a year before he felt himself. In 1909 noticed occasional attacks of difficult breathing laid to "bronchial catarrh." Felt a lack of power, tired easily. Early in 1910, during an attack which included severe coughing, systolic blood pressure was 180 m.m. Hg. Pulse rate averaged 90, regular. Heart not enlarged, heart-sounds varied in ratio of intervals with diminished muscular tone. Slight precordial discomfort. Urine negative, except high acidity. Breathless on running for a car, on going upstairs in the factory, on driving auto, especially against wind. To correct his lack of muscular power, patient had adopted one of the many physical systems advertised in the magazines, "positively to make the weak strong." Spent first three months of 1912 in bed to recover from right-sided dilatation with all the classical symptoms. During 1912 systolic blood pressure dropped to an average of 160 m.m. Hg. and heart occasionally showed apical diastolic murmur, pulse rate about 75. After very earnest advice, gave up a large part of his business cares, but still objected to the curtailment of his physical exertion, such as running for cars, walking against the wind, particularly at low thermometer. Developed peculiar breathing, especially while asleep; from the description, it belonged to the Biot, sometimes to the Cheyne-Stokes' type of respiration. On Christmas day, 1912, walked about two miles up-grade, across a meadow with little grand-children; too tired to eat Christmas dinner; had attacks of difficult breathing, growing worse, unable to sleep in a recumbent position. Systolic blood pressure ranged as high as 190 m.m. Hg., pulse rate in the neighborhood of 90, marked irregularity, "extra systole" type. Rigid confinement in bed, and careful medication prevented the onset of another grave dilatation. During past year had had two attacks involving exact pronunciation and coördination movements of right side, simulating partial apoplexy probably due to spasm of cerebral vessels, recovery complete in less than a week. Last observation April 17, 1913, systolic blood pressure was 146 m.m. Hg., pulse rate 66 and regular, heart normal except for an occasional apical diastolic bruit. Of course the apical second and the aortic second sounds are accentuated.

THE MANAGEMENT OF HIGH BLOOD PRESSURE.*

By FRED C. RICE, M.D.,
RIPLEY, N. Y.

IN choosing this subject for consideration the writer was accuated by purely selfish motives in the desire to know your methods of treatment of a class of cases that have, to him, been the occasion of much concern and study in the attempt to arrive at a satisfactory classification for therapeutic purposes.

I cite the following case as an example: "A man at fifty, in active life and apparent good health, presents himself complaining of dyspnœa and dizziness on exertion. No other symptoms. Heart and lungs normal; slight accentuation of second aortic; urine sp G 1015; no casts; blood pressure 170. Arteries somewhat sclerosed. Has this man arteriosclerosis, or beginning interstitial nephritis? Is there any difference in diagnosis? Is there any difference in the satisfactory or adequate therapeutic procedure?

* Read before the Medical Society of the County of Chautauqua, October 16, 1912.

Take another case, or the same one ten years later, with a partial paralysis due to cerebral hemorrhage, some hypertrophy of the left ventricle. Poor muscle tones of heart. No accentuation of second aortic. Pronounced arteriosclerosis. Pulmonary edema at the basis; some bloating of feet; dry skin. Urine 1000 c.c. in twenty-four hours; fair trace of albumen, hyaline casts. Blood pressure 130. What disease has he now? Is it cardio-renal disease, or cardio-vascular disease, and what about its therapeutic management?

A large number of cases after forty, consulting a physician in which arteriosclerosis and hypertension are a factor, force us to give it due consideration. Especially has it been brought to our attention by the facilities placed at our disposal for its accurate testing.

A careful search through the literature as to the etiology of hypertension reveals the fact that there is no general concensus of opinion as to any one cause. Some believe strongly, in a toxæmia as to the underlying factor; others in alcoholism; still others in emotional factors and excesses, all of which go to show that various causes acting on various subjects may produce this disease.

I think the statement is warranted, that, as we see arteriosclerosis, it is most frequently caused by the exactions of the busy life so many of our people lead. Added to this, the rapid eating of a possibly badly balanced diet at irregular intervals and you may easily bring about a toxæmia which surely is an additional factor in the production of the arterial change.

These workers work under pressure, so to speak, and blood pressure is maintained at a high level until the arterial wall, to defend itself, thickens the media purely as a protective agency. Next the soft parenchyma of the kidneys begins to feel the effects of the increased pressure within the capsule; this brings about the phenomena of the passing a large amount of light-colored, light-weight urine, deficient in total solid and uria, which poisons, being left in the blood stream, serve further to increase the tension. Occurring at the same time is the hypertrophy of the left ventricle to be followed later by degeneration, bringing in its train all the pangs of myocarditis which is the final break in a large number of cases. Thus we have a cardio-renal disease and a cardio-vascular disease both systems being progressively damaged; and the patient who started with a simple and curable toxæmia and hypertension, now ends with a complex and incurable interstitial nephritis.

If all cases followed the foregoing classical outline of events, the difficulties attending their diagnosis and treatment would largely disappear.

The writer now has under observation a patient aged forty, with easily palpable arteries; albuminuric retinitis; albumen and indican in the urine; occasional hyaline casts; deficient urea with blood pressure reading of only 100. His heart muscle and the muscular elements in the arterial wall are, apparently at least, so disturbed by the toxæmia that he cannot bring about sufficient blood pressure for his needs, the treatment with this need in view does not meet with desired results. I am not at all sure but his present low pressure follows a previous high one and may be one of a class of cases that the writer believes to be not infrequent in which, after a considerable time, the compensatory blood pressure is for some reason no longer maintained. It will be readily seen that the attempt to further reduce a secondarily low blood pressure, even though it be above what we regard as normal, cannot help but result disastrously.

A case will illustrate this point. "J. W." aged sixty-four, weighing 225 pounds, suffered a mild apoplectic seizure, January 22. Blood pressure taken at that time registered 200. Treatment of rest in bed, veratrum viride, calomel, and fasting, reduced the blood pressure in one week to 174, when the patient was allowed to sit up; a diet of rice, toast, and fruit juices, with continued veratrum viride gradually brought the reading to 164. The urine during this time contained no albumen; was 2000 c.c. average in twenty-four hours. No indican. During the first two months under the régime of restricted diet and allowing no proteids, with gradually increased exercise, the patient's condition remained satisfactory. However, at the end of three months his weight had fallen to 175 pounds. Blood pressure was 150; average output of urine in twenty-four hours had fallen to 800 c.c., urea deficient; patient had gastric distress after eating; soreness of liver; insomnia; loss of appetite. Patient was then allowed more liberal diet, given strychnine and at the end of three weeks, blood pressure was 160; urine 1400 c.c. in twenty-four hours; urea 27 grams and all the annoying symptoms cleared up.

This case I think illustrates the point I wish to make, that there is a point of compensatory blood pressure in arteriosclerosis that must be maintained, and below which the functions of the liver and kidneys are very much impaired.

Since using a sphygmomanometer the writer has had his ideas in regard to blood pressure and its treatment radically changed. Blood pressures are found now where it had been overlooked and in cases where not expected. It has also shown the fallacy of expecting to reduce blood pressure very materially by the use of drugs alone.

In order to prevent the baneful organic changes of hypertension we must recognize its presence early, and successful treatment must depend upon a clear understanding of the etiology in each individual case. This can

only be done by painstaking care in getting the history in which heredity, previous illness, habits of living, exercise, coffee drinking, and especially diet, must all be carefully considered. If we find a patient already suffering from impairment in functions of liver and kidneys, we may be forced to the conclusion that the hypertension is purely compensatory and it may be our great duty to maintain, instead of reduce it.

The toxins most frequently the cause of hypertension are those from the ingestion of proteids whenever their metabolism is disturbed. This is demonstrated by the presence of indican in the urine in a surprisingly large number of these patients.

The dietetic and hygienic treatment of hypertension and arteriosclerosis is most important. No abnormalities from which we suffer are more favorably influenced by rational living. Where the food contains more proteid than the metabolism of the body will care for kindly, hypertension is brought about and arteriosclerosis is the result. Each case is a case unto itself. Articles of diet may be tolerated by some which, for some unknown reason, exaggerate symptoms and are harmful to others.

Agreeable occupation which favors a quiet mental state is of great value. The overworked brain and the apoplexy which follows the abuse of that organ must be closely associated. Such persons should have periods of relaxation; they should be temperate in all things.

It is highly important to enter into the most minute details of the hygiene of each individual case, because broad, general principles and statements will not prove satisfactory. For treatment to be successful it must have the hearty coöperation of the patient, and this can only be secured by the utmost of confidence, on their part, and a clear understanding of the aims of treatment. Properly regulated exercise in the open air; warm bathing; strict attention to the emunctories. Alkaline laxative and diuretic waters should not be regularly employed, because of their blood-pressure raising principle and also their tendency to limit the growth of the acid-producing bacteria in the intestinal tract. Liver regulation, preferably by calomel, at short intervals, is usually indicated.

The drug treatment is far from giving entire satisfaction. Nothing seems to start elimination quite as well as calomel and sweats. The sweats to be by dry, hot air, the increase in temperature being brought on slowly, a competent attendant being constantly at hand. Sodium iodide, and sodium nitrate may be given over long periods of time and will eventually aid in materially reducing the tension. To be of the most value they should be used early and in conjunction with the means to promote elimination. Veratrum viride will markedly lessen the pains of arteriosclerosis which sometimes will occur in the back of the neck and head. It also aids in relieving the pain in the head in threatened eclampsia.

For the amelioration of the vascular spasms such as angina, 1/50 of Nitro glycerine with ¼ grain morphine, hypodermically, brings about comparatively quick relief. In cases in which a cerebral hemorrhage has occurred and the tension is high, the writer believes veratrum especially indicated.

In the case of loss of compensation in the arterial wall or in the power of the heart muscle accompanied by low blood pressure, it would seem perfectly logical to use digitalis.

The writer has only within the last two years been using the blood-pressure apparatus; but it has been of great aid in the management of this difficult class of cases because it furnishes opportunity to test results of treatment. It is a valuable aid in diagnosis and a dependable guide in treatment.

Unfortunately the many physiological factors, which may and do continually cause minor variations in our readings in the same patient from time to time, make impossible the adoption of fixed and absolute dividing line between normal and pathologic.

The sphygmomanometer finds its greatest range of usefulness in the diagnosis and treatment of cardio-vascular and cardio-renal diseases when we can follow day by day the changes in a dangerously high pressure and note the efficiency of treatment. In detecting the toxæmias of pregnancy this test is of great value, almost equalling that of uranalysis. A constantly rising blood pressure in the latter half of pregnancy is one of the earliest and most common signs of toxæmia. This symptom precedes albuminuria.

SUMMARY.

The systematic use of the sphygmomanometer has shown us that:

First. The treatment of a large percentage of all cases after forty years, from any cause, must include the tr. of arteriosclerosis.

Second. The sphygmomanometer has also shown us the futility of depending alone upon the arterial depressors.

Third. That a certain percentage of cases in order to carry on their metabolism, even imperfectly, must maintain a relatively high tension, and it may be our greatest duty to aid them in sustaining this.

Fourth. That (in the writer's opinion) the treatment of arteriosclerosis is the treatment of chronic interstitial nephritis.

BLOOD PRESSURE IN PULMONARY TUBERCULOSIS.*

By LOUIS SHALET, M.D.,
NEW YORK CITY.

A BRIEF resumé of the various more or less accepted beliefs about blood pressure in pulmonary tuberculosis may be divided into the following three classes: (*a*) That a persistent low tension with no assignable cause is a priori due to incipient tuberculosis, pulmonary or otherwise. The more advanced of this class believe that the minus tension will be present before there are demonstrable physical signs. (*b*) That the physical signs of tuberculosis appear first, to be invariably accompanied by a minus tension. (*c*) Those that hold that there are no characteristic changes in blood tension in pulmonary tuberculosis any different from what is to be expected in all definitely diseased conditions that are accompanied by general weakness and greater frequency in pulse rate. From the above remarks one is struck by the great discrepancy in the views on blood pressure in tuberculosis that are held by various observers.

My own experience with blood tension in pulmonary tuberculosis covers a period of about four and a half years' residence at the Otisville Sanatorium of the Department of Health. During that time there passed through the Institution tuberculous men, women, and children, to number, in the aggregate, about three thousand five hundred patients. I can say without fear of exaggeration that during my long stay up there I must have taken the blood pressures of one-quarter to one-third of that number, or well over one thousand cases. The method of procedure was as follows: The patient's history was taken within the first twenty-four hours after admission, to be followed immediately thereafter by sphygmomanometry; at the men's unit by the Janeway apparatus, and at the women's unit by the Tycos sphygmomanometer. The patient is seated, and the average of three readings (systolic) is recorded. Now, you all know very well indeed the class of cases that are admitted to the Otisville Sanatorium (Turban I and II+). You select and recommend them yourselves, so we need not discuss that phase of the subject. As for the blood-pressure readings, I can say that in my experience these do not differ markedly or constantly from what has been accepted as the normal, namely, close around 125 m.m. Hg. according to age and sex.

Dr. James Edlin, who is on the Staff at Otisville,[1] and is doing much careful work on blood pressure in pulmonary tuberculosis, tells me that the systolic tension is affected by external stimuli of various kinds, such as excitement, apprehension, etc., which makes it inconstant and therefore misleading. But the diastolic blood pressure is unaffected by temporary external stimuli; thus being constant, it offers an indication of the state of the circulation, particularly the myocardium. Furthermore, in his experience, the systolic tension in tuberculosis may be and very often is normal, thus confirming my own findings. But the diastolic tension in cases of pulmonary tuberculosis who are not doing well is nearly always minus. This, however, does not occur by itself, but, as is to be expected, the same is always associated with the well-known other clinical signs of tuberculosis to be met with in those who are not doing well.

Assuming for the nonce that as a general thing the blood pressure in active pulmonary tuberculosis is lower than normal, as is to be expected in all asthenic conditions with increased pulse rate, it is somewhat difficult to explain why the same should be at about normal in the patients on their admission to Otisville, unless the stimulation of the cool, fresh air, and the change in living conditions, is responsible for the same. This, in spite of the altitude at Otisville, as compared with New York city, a difference of eleven hundred feet.

Although much has been said of the diagnostic significance of hypertension in pulmonary tuberculosis, it is hard to see wherein this is specific for that disease. By itself it is no more diagnostic of tuberculosis than fever or a rapid pulse. That in the absence of any assignable cause, a minus tension may be looked upon, among other things, as a possible expression of a masked tuberculosis, is admitted. Nearly all observers are agreed that a normal reading is of good prognosis in pulmonary tuberculosis. So it is. But, then, a tuberculous patient with a normal tension presents the other evidences of what are commonly looked upon as being of good prognosis in this disease, such as good nutrition, normal pulse rate, absence of fever, etc. That the tension is apt to reach normal with the general improvement in the patient's condition is also admitted. It would be strange if it did not.

In short, it may be affirmed without much fear of contradiction that there is nothing characteristic of tuberculosis in the blood pressure, as it occurs at the clinical onset or during this disease; that, by itself, could be used either in the diagnosis or prognosis thereof.

* Read before the Association of Physicians Attending the Tuberculosis Clinics of New York City, at the Academy of Medicine, June 11, 1913.

[1] Since resigned.

HEMATURIA: ITS PATHOLOGICAL AND DIAGNOSTIC IMPORT.*

By LEO F. SCHIFF, M.D.,
PLATTSBURGH, N. Y.

HEMATURIA is the passage of blood in the urine. The blood may be so scant as to require the use of the microscope to detect the blood elements, or so profuse as to be nearly pure, but in order to come in under this

* Read at the Annual Meeting of the Fourth District Branch of the Medical Society of the State of New York, at Fort Edward, October 14, 1913.

heading it must be passed with the urine; in other words, we exclude by the definition, cases in which the blood contaminates the urine from an external source; e. g., menstruation; cases of pure hemorrhage from the urethra, and cases in which blood pigment is present in the urine, but no blood. The causes of hematuria are many, and it is to the tracing of any given case to its cause that this paper is devoted. Guiteras[1] in his *Urology* gives the following table of hematurias, adopted from Castaigne:—

I. *Traumatic:*
- *a.* Wounds and injuries.
  - 1. Urethra.
    - Rupture.
    - Operation.
    - Fracture of pubis.
  - 2. Bladder.
    - Wounds.
    - Injuries to pelvis.
  - 3. Kidney.
    - Wounds.
    - Injuries to loin.
- *b.* Stone.
  - 1. Pelvis.
  - 2. Bladder.
  - 3. Urethra.
- *c.* Sudden change of pressure (hematuria ex vacuo).

II. *Inflammatory:*
- *a.* Urethritis.
  - 1. Anterior.
  - 2. Posterior.
- *b.* Cystitis.
- *c.* Pyelitis.
- *d.* Nephritis.
  - 1. Acute.
  - 2. Hemorrhagic.
  - 3. Chronic.

III. *Tumors:*
- *a.* Prostate.
- *b.* Bladder.
- *c.* Kidney.

IV. *Tuberculosis:*
- *a.* Prostate.
- *b.* Bladder.
- *c.* Kidney.

V. *Parasites.*

VI. *Blood Changes:*
- *a.* Infections.
- *b.* Drug toxicosis.

To these I would add:

VII. *Passive congestion:*
- *a.* Cardio-vascular.
- *b.* Perirenal tumor.

VIII. *Essential hematuria* which is considered to-day as a clinical entity. This is a hematuria arising from the kidney in which no organic change can be found to account for the bleeding. It is quite probable, that with the increase of our knowledge and experience in pathology, more of these cases will be found to have some definite pathological foundation, and fewer be left in this class; as is the case with all of the so-called functional diseases.

The blood in the urine may be of three types:—

1. Very scant; it can be detected only by microscopic examination,—by finding red-blood cells in the urine (which usually has to be centrifuged for this purpose).
2. Bloody urine, detectable by the naked eye.
3. Almost pure blood.

The cases in which hematuria is a symptom fall under the following classification:—

1. Cases in which the bleeding is one of the most prominent symptoms, and usually the sole cause of the patient consulting the physician; as bladder tumor. (Types 2 and 3.)
2. Cases in which a history of hematuria is elicited in the anamnesis (as in renal tumor, with slight intermittent hemorrhage); or in which the blood is found in the urine upon examination without any especial knowledge of its presence by the patient; as in some cases of tuberculous kidney. (Types 1 and 2.)
3. Cases in which we look for blood merely to confirm an already probable diagnosis as in cases of renal colic. (Usually type 1.)

It is with the first two classes of cases that this paper deals principally, in order to answer the questions that naturally arise to the physician: "Where is the blood coming from? How shall I determine it, and the cause?"

In considering a case which presents the symptom, hematuria, we do it somewhat according to the following scheme:—

1. History:
   - *a. Family,*
   - *b. Personal.*
2. Habits.
3. Present Illness.
4. Examination of the urine.
5. Examination of the patient.

This is not necessarily,—nor usually,—the order in which these points are taken up. It is my practise to begin with whatever seems most important to the patient, and gradually work out the other points as they come to light by questioning and examination.

History.—There is very little to be gained from the *Family History;* still tuberculosis, malignancy, hemophilia, the uric acid diathesis, and nephritis ought to be inquired into. In taking the *Personal History,* one first investigates the question of genito-urinary disease, or injury which will cover the points of urethritis, prostatitis, orchitis, epididymitis, stricture, cystitis, bladder ulcers, pyelitis and nephritis; attacks of ureteral colic; injuries and instrumentation, especially recent. Also, whether there has been bleeding previous to the present attack; and if so, its nature, along the same lines as the inquiry into the present attack, which will be taken up shortly.

Other points are any other form of urinary

disorder, as manifested by pains, disturbances of urination, variations in the quantity of urine, and in its appearance; uric acid deposits, pus, etc. Diseases other than genito-urinary are then considered, especially tuberculosis. The inquiry in this regard may be for symptoms as cough, night sweats, bone and glandular disease, rather than the bare question as to whether the patient has ever had tuberculosis. Syphilis, hemophilia, evidence of malignancy in other parts of the body; heart disease, with especial reference to venous congestion, and finally the question of medications. Cantharides, turpentine and other renal irritants are well known. I have had two cases with hematuria which I attributed to hexamethylene tetramine (urotropin), and which cleared up immediately upon discontinuing the use of the drug.

Habits.—Alcoholism,—especially as a producer of nephritis; habits of diet, with reference to lithiasis; venery,—in prostatic cases are the most important points.

Present Condition.—This is usually the most important part of the history, and as I have indicated above, is usually elaborated first, the other parts of the history being filled in later. The presence of concurrent disease, or the medication that is being taken may practically make the diagnosis. Genital tuberculosis is very suggestive of a similar condition in the bladder. Then comes the inquiry into the hematuria itself, and here permit me to digress a moment and present a table of hematurias on an anatomical basis, as it is usually from this part of the history and the examination of the urine that the probable source of the blood is determined, and a provisional diagnosis made.

HEMATURIA.

1. *Urethral:*
   - Injury.
   - Inflammation.
   - Calculus.
   - Stricture.
2. *Vesical and Posterior Urethral:*
   - Injury.
   - Inflammation.
   - Ulcer.
   - Calculus.
   - Tumor.
   - Tuberculosis.
3. *Renal and Ureteral:*
   - Injury.
   - Inflammation.
   - Calculus.
   - Tumor.
   - Tuberculosis.
   - Infection (hematogenous).
   - Toxicosis.
   - Congestion.
   - Essential.

In investigating present condition, inquire into *Time of Appearance of Hematuria,*—whether recent or of long standing. *Mode of Onset,*—sudden or gradual. *Course,*—stationary or increasing or decreasing. *Occurrence,*—continuous, remittent, or intermittent. *Character of the Bleeding;*—this is very important, and is best observed by the physician himself, by having the patient void in his presence; the first part of the urine being passed into one glass, most of the remainder into a second glass, and the last urine into a third. The first glass contains the urethral washings, the second the urine as it was in the bladder, and the last glass is the same as the second, plus any sediment that may have been lying at the base of the bladder, or any hemorrhage that is due to the final contraction of the bladder itself. If it is not possible to have the patient void, or in an intermittent case when the patient comes to us during the intermission, we endeavor to find out whether the bleeding was diffuse, or more marked at some stage of the urinary act.

Relation of the bleeding to external influences.—The influence of exercise, medicines, alcohol, and any previous treatment on the hematuria should be ascertained.

Concomitant Symptoms. Urinary.—Frequency suggests bladder irritation, either from a bladder lesion or irritating urine; a decreased capacity of the bladder; or polyuria. Strangury indicates irritation of the trigonal or prostatic regions. Polyuria is present in chronic nephritis, and tuberculosis of the kidney. Involuntary stoppage of urine during urination may mean a stone in the bladder, or a new growth. Variations in the size of the stream are due to stricture. Anuria may be either retention (usually from an enlarged prostate), or suppression (nephritis or renal calculus). Pain in any part of the urinary tract may point to the seat of the trouble. The pain may be constant or intermittent, may or may not have a relation to the amount of bleeding, and varies in character (dull, sharp, aching, gnawing, burning; stationary, radiating, wandering). In traumatic cases it is usually at the site of injury. At the head of the penis it may be due to a lesion there, or referred from the prostate. Along the course of the urethra, it points to a lesion there. In the rectum, usually due to prostatic trouble. Bladder pain, usually aching in character, is due to a local lesion. In the iliac regions, it comes from the ureter, and is often paroxysmal (renal colic). When on the right side it has often been diagnosed as due to appendicitis. Pain in the loins indicates the kidney.

Constitutional Symptoms.—Fever, loss of weight, symptoms of infection, tuberculosis and nephritis are sought for.

Examination of the Urine.—The three-glass test as a means of determining the source of hemorrhage, has already been referred to. If the first glass contains all or most of the blood, it points decisively to the urethra. In bladder hematurias, the urine may be diffusely tinged with the blood, but very often there will be a

little almost pure blood at the very last, especially if the lesion be at or near the sphincter. There may be large clots; sometimes in cystitis, gelatinous masses tinged with blood; fragments of tumor tissue may be passed (in tumor the bleeding is very free); calculi or fragments of them may appear. Renal hemorrhage is diffusely distributed in the urine, and is often very scant, requiring the microscope for its detection. It is in such cases (class 2, *above*) that the hematuria is very often first discovered by the physician on microscopic examination of the urine, thus perhaps materially changing the aspect of the case; or in other cases (class 3) the search for blood is made merely to confirm an already probable diagnosis. Thin worm-like or thread-like clots come from the ureters; we often see them after ureteral catheterization.

Qualitative examination has not played much part in my hands in clearing up the cause of the hematuria, though it may throw light on some concurrent condition, as nephritis.

Microscopic examination should always be made. First the presence of blood is confirmed, by finding red-blood cells, and no matter how bloody the urine may appear to be the microscope should be used, as the case may be one of hemoglobinuria, or merely highly-colored urine. In apparently clear urines we often will find many red-blood cells. The epithelia of the various portions of the urinary tract sometimes furnish a clue, when present in large numbers. Casts are a sure indication, cylindroids are suggestive, of nephritis, but this, of course, may have no direct bearing on the hematuria; red-blood cell casts, however, are diagnostic of nephritic hematuria. Pus when present, may or may not have a direct bearing on the bleeding. Tumor fragments may be found, and, of course, are diagnostic. In cases of parasitic hematuria, seldom or never seen in these latitudes, there may be parasites in the urine. If crystalline or amorphous deposits are present in large amount, they suggest calculus.

The *sediment,* obtained by centrifugation, and washed with distilled water, should be stained and examined in all cases in which pus has been found, and in all cases in which we suspect tuberculosis. In the latter case, should repeated examinations fail to reveal the tubercle bacillus, it may be necessary to resort to guinea-pig inoculation in order to make a diagnosis.

As regards *quantitative examination,* polyuria points to chronic nephritis, or tuberculosis of the kidney (if a concurrent diabetes can be ruled out). A decreased urea output means damaged kidneys.

The *examination of the patient* should include the routine physical examination, including blood-pressure reading, and whatever special examinations are necessary. We will not here take up the details of the routine physical, but a few points will bear special mention. The external evidences of trauma, swellings, points of tenderness, palpation of enlarged kidney, or thickened bladder, or tumor; or a distended bladder, may point at once to the offending organ.

Before proceeding further, we may now sum up the results of our investigation and make a provisional diagnosis. This I prefer to do according to the anatomical table given above.

1. *Urethral Bleeding.*—The three-glass tests positively localizes this by the bloody urine in the first glass, clear or only slightly bloody in the second, and clear in the third. What is the cause? If injury, we have history, and external evidence of it (include here the injuries due to instrumentation). Inflammation gives a history, —there is usually pain, and pus. If the inflammation is chronic, the urethroscope will reveal the source of hemorrhage. Calculus may cause the symptoms of stricture by partially blocking the urethra, or may entirely block it. Sometimes a calculus may be felt from without, but the positive diagnosis is made with the sound. Stricture gives a history of urethral inflammation, sometimes diminution in size of the urinary stream, sometimes pain, but here again the sound or bougie makes positive diagnosis.

2. *Vesical and Posterior Urethral.*—Having eliminated the urethra as the seat of the trouble, it is not always possible with the information at hand at this stage of the examination to differentiate between vesical and renal hematuria. However, there are a number of points that help. Bleeding at the end of micturition nearly always comes from the region of the bladder sphincter. Injuries usually give a history, and may be apparent on the physical examination. Inflammations (posterior urethritis and cystitis) give history, and the symptoms of strangury, frequency, etc. However, a cystitis may be present in cases of renal hematuria, so too much dependence should not be placed on this symptom, and the diagnosis must be confirmed by other means. Prostatitis is recognized by the above symptoms, plus enlarged and painful prostate and, perhaps, fever; but again the same may be said as of cystitis. Calculus may give a history of previous attacks, or of passage of calculi, or the sudden, involuntary stoppage of urine during micturition. In cases of bladder tumor the bleeding is usually very profuse, remittent or intermittent, and is not affected by exercise, whereas calculus hematuria *is* affected by it. Tuberculosis causes a very painful form of cystitis, with decrease of capacity of the bladder. Tubercle bacilli may be found in the urine, or a guinea-pig test may be needed to prove the presence of tuberculosis. The family history, patient's own previous history, and the discovery of tuberculosis in other parts of the body, especially the genital tract, may put us on the right track; but even then we must know whether or not one or both kidneys are affected. Simple ulcer can hardly ever be recognized by any of the means mentioned above. We must then go further. Catheterization is helpful at times, especially when com-

bined with bladder irrigation. If the bladder is emptied, then filled with saline or boric solution, and this immediately withdrawn and found to be appreciably bloody, it will tend to prove that the hemorrhage is in the bladder, especially if a second washing still shows traces of blood. If the solution comes back clear, and then if a second injection be made and left in to be voided later, it should show, if the bleeding is from the kidney, a slight tingeing. A sound or searcher may detect a calculus. The cystoscope gives the most reliable information, and it should be used whenever the condition of the patient will permit. With it, we at once differentiate renal from vesical hematuria. If the source of hemorrhage be in the bladder, the cystoscope makes it at once apparent.

3. *Renal and Ureteral.*—Having satisfied ourselves that the cause is in the kidney or ureter, we again go over the information at hand to see what help it gives us. As before, in traumatic cases we usually have history, and external evidence sufficient to make a diagnosis. Inflammation, when acute, gives the local pain, and fever, with albumin and casts in the urine. Chronic nephritis may be diagnosed as present, but as a cause of the hematuria one should only make the diagnosis after excluding all other possible causes. Calculus often gives a history of renal colic, and when the bleeding follows these attacks the diagnosis is fairly certain. It were better confirmed by radiography. In favor of tumor are cachexia, and the finding of recognizable tumor elements in the urine. In tuberculosis, the same points hold good as for tuberculosis of the bladder (and these two usually go together), while a local pain and tenderness, and a palpably enlarged kidney, may draw attention to the site of the lesion in advanced cases; but, then we want to know how the other kidney is. In the presence of an infectious disease capable of causing hematuria, it is best to wait until the disease has subsided before investigating further, as the hematuria may subside with it, if it is the cause of this symptom (unless another very evident cause is present). This applies also to cases where a drug has been taken that may be the cause of the bleeding. Congestion from heart disease can occur only in advanced cases, and the same rule will apply. If it is caused by external pressure (as appendical abscess as reported by Frisch),[2] the cause may be determinable on physical examination, or the case may have to be put down as one of Essential Hematuria, until the diagnosis is established by operation or autopsy.

From the foregoing it is readily seen that we need some further method of examination than those taken up, to complete our diagnosis. Cystoscopy is of most value, together with ureteral catheterization. The value of the cystoscope in vesical hematuria has been referred to. In the renal and ureteral cases, it tells us which side is affected, or that both are; and also shows the presence of a renal hematuria when combined with a vesical. The wax-tipped catheter may prove the presence of calculus. The specimen obtained by ureteral catheterization may show tumor cells, tubercle bacilli, or a unilateral nephritis.

Next in value is the Roentgen ray. Flouroscopy is not very reliable. The radiogram, taken either alone, or in combination with ureteral catheterization, or injection of the bladder or ureter with some shadow-casting substance, is often of great help in outlining bladder tumors and calculi, renal and ureteral calculi, and some tumors, both in and about the kidney.

Test of renal function is more a guide to operation than an aid to diagnosis, but a marked unilateral diminution in function may confirm the diagnosis in a case suspected of malignancy.

Having now done all in our power to make our diagnosis, there will still remain some cases which have been negative to all tests. These we call provisionally, Essential Hematuria, until such time as further developments, operation, or autopsy reveal the cause. Among the interesting, but rare, conditions found by the pathologist or surgeon, in cases supposed to be Essential Hematuria, are angiomata in the pelvis reported by Fenwick,[3] cystic pyelitis, reported by Haynes,[4] and pressure from inflamed appendix, by Frisch,[2] and localized nephritis. The latter also reports the cure of several cases of hematuria by appendectomy, although at operation there were no signs of anything to cause pressure. Finally there are a small number of cases in which the examination of the kidney removed by nephrectomy reveals no lesion. We must, therefore, consider Essential Hematuria as a clinical entity, until some new advance in pathology may reveal a hitherto unknown cause for it.

REFERENCES.

1. Guiteras, *Urology,* vol. i, p. 277.
2. Frisch, *Wiener Klin. Wochenschrift,* 1912, xxv, No. 1.
3. Fenwick, reported by Braasch, *J. A. M. A.,* lxi, No. 12, p. 937.
4. Haynes, *Annals of Surgery,* March, 1908.

TREATMENT OF FIBROIDS BY DEEP ROENTGENOTHERAPY.*

By J. J. LEVY, M.D.,
SYRACUSE, N. Y.

THE remarkable results obtained by Krönig and Gauss in the treatment of fibroids by the Roentgen rays has stimulated renewed interest in Roentgenotherapy. There is scarcely a gynecological clinic in Germany which has not from one to three X-ray outfits for therapeutic purposes. Gauss has convinced the gynecologists that the treatment of fibroids by Radiotherapy is a safe, rational, and quick method. He has popu-

* Read before the Syracuse Academy of Medicine, January 20, 1914.

larized this method of treating myomata, and in Germany the gynecologists seem to be even more enthusiastic than the radiologists. Over one thousand cases have been treated by this method with uniformly good results. Prof. Krönig, who is at the head of the gynecological clinic at the University of Freiburg, read a paper before the Clinical Congress of Surgeons of North America held last November in Chicago. He gave his experiences in three hundred and fifty cases of fibroids treated by the Roentgen rays. He has come to the conclusion that Roentgenotherapy is far superior to operative treatment by means of total extirpation, or by supravaginal amputation of the myomatous uterus. This is the opinion of one of the most famous gynecologists in the world. All forms of fibroids can be treated successfully by the Roentgen rays except pedunculated submucous fibroids and those undergoing malignant degeneration. The question arises, should women under forty years be treated by the Roentgen rays? Yes. Of course, we must inform our patients that they will be made sterile by this method of treatment. The rays have a direct effect on the fibroid tumors, but the most important influence is on the ovaries. It causes the ovaries to atrophy and the fibroid only disappears when amenorrhea is gradually established, as menstruation is dependent on the activity of the ovaries. It is possible to cure a fibroid without producing an absolute amenorrhea, but in most cases we find that the tumor only disappears when absolute amenorrhea is established. We are justified in producing sterility in women under forty years of age, when we consider that thirty per cent of married women suffering from fibroids are sterile, fifteen per cent abort. Furthermore, when we realize the dangers and complications that may occur when delivery is obstructed by a tumor in the lower uterine segment, we are more than justified in producing sterility by artificial means in these cases. Fortunately fibroids occur most often during the period of sexual maturity, and the majority of cases, I believe, occur in women over forty years of age. Radiotherapy is not only valuable in the treatment of fibroid tumors but in all conditions due to a perverted function of the ovaries, as in climacteric hemorrhages, chronic metritis; in fact, in these latter conditions, it may almost be called a specific.

Roentgenotherapy has the following advantages over surgery.

1. It is a harmless method; whereas the mortality after fibroid operations is at least five per cent in the hands of the most skillful surgeons.

2. There are many cases associated with severe kidney or heart lesions in which the surgeon dare not operate. The most radical surgeon will admit the great value of the Roentgen rays in this class of cases.

3. There are many women who have a horror and a great fear of an operation and these would welcome a method which would cure without the use of the knife.

The length of time to bring about a cure is from one to three months depending on the age of the patient. A woman of fifty will be cured in a much shorter period than a woman of thirty-five. In women over fifty a cure can be brought about in a comparatively short time, but in women under forty, it demands much larger doses and a longer period, for the younger the individual, the more resistant are their ovaries to the action of the X-rays.

The radiologist should work in conjunction with the gynecologist. If we find after two months of treatment, we have failed to benefit or cure our patient, we can positively state that this case is not a favorable one for Roentgenotherapy. In order to get positive results, we must employ the proper technique and this must be carried out in great detail. There have been great advances made in Radiotherapy in the last two years. We have given altogether too small doses in the past. We were working with a mysterious force which could not be measured. To-day we can measure the rays qualitatively and quantitatively. We can give enormous doses without any danger to the patient. Dermatitis or burns are things of the past.

Deep or intensive Roentgenotherapy means:

1. The use of a very hard tube. The rays from a coil are better suited for our purpose than those of a transformer. The hard rays are very penetrating and we employ them exclusively in gynecological conditions.

2. The tube should be near the part to be treated. The anticathode should not be further distant than twenty centimeters.

3. The use of a thick filter. Three millimeters of aluminum is the best filter. Filters make X-ray therapy perfectly safe, as the soft rays, which only irritate the skin, are filtered off, while the deep, penetrating hard rays are the only rays that can pass through the filter.

4. Cross-fire Technique. Instead of having one point of entry for the rays we can have as many as twenty or more, but for the average case we utilize only six points of entry. The lower part of the abdomen is marked off into six areas and each area is given a full Sabouraud dose. This constitutes one series. This procedure is repeated every two weeks until five series have been given, or in all thirty full Sabouraud doses. The treatment is started just after the menstrual period. After the third series, improvement is very marked, and after the fifth series, a cure generally results. It is essential that the Sabouraud pastille be placed two centimeters from the tube and under a three-millimeter aluminum filter, the same thickness that is used for covering the abdomen. Kienbock's quantimeter is also a very scientific method to measure the amount of radiance administered. A standardized photographic paper is used and after development it is matched with a standard

scale. We should always use the Sabouraud pastille and Kienbock's quantimeter in our therapeutic work as it is extremely essential to be accurate in our dosage. This new technique of intense, filtered, deep, penetrating rays has brought about splendid results, not only in gynecological cases, but also in many other conditions; and even more may be expected in the future with further improvements in technique.

SUMMARY.

1. Every case should be examined by a gynecologist to be sure we are dealing with a myomatous uterus.
2. Pedunculated submucous fibroids and those undergoing malignant degeneration are surgical cases and, therefore, they should not be treated with X-rays.
3. X-ray therapy is perfectly safe and is without danger, provided we select our cases and the proper technique is employed.
4. Seventy-five per cent of fibroids can be treated successfully by deep Roentgenotherapy.

THE PATHOLOGY AND TREATMENT OF CHRONIC GONORRHOEAL URETHRITIS IN THE MALE.*

By J. D. OLIN, M.D.,
WATERTOWN, N. Y.

THE purpose of these remarks is to outline briefly and without detail the modern conception of the pathology of chronic gonorrhœal urethritis, and the best methods of modern treatment based thereon.

Chronic gonorrhœas are mixed infections in which some of a multitude of germs, chiefly of the colon, staphylococcic, and streptococcic groups (normally harbored in the anterior urethra with impunity) take part. Though in a limited number of cases of progressive proliferation, especially those of many years' standing, the original invader is discovered, neither in the discharge, nor expressed secretions, it is proverbially uncertain when we are rid of the gonococcus. It may survive for decades inert, when, given new conditions for its development, especially a new host, it is capable of resuming its virulence.

Caspar says that prostatitis is associated with 85 per cent of all cases of chronic urethral catarrh. The condition of the prostate in these cases may be completely masked, presenting none of the classical symptoms. There may, indeed, be no enlargement of the gland noticeable to the palpating finger. The incontrovertible microscopic findings, in the examination of the expressed secretions, give the diagnosis and indicate the rational therapeusis of this and other complications in the urethral adnexa. They are beyond the scope of this paper.

To comprehend its pathology we must recall some points in the structure of the urethral mucous membrane. Briefly its epithelium is of a stratified squamous type in the fossa navicularis, simple columnar in the penile portion, stratified columnar in the membraneous part, and transitional in the prostatic urethra merging into that of the bladder. There are many infoldings or crypts of the mucosa, especially in the roof and sides of the penile portion; and throughout the urethra in the submucosa, and often extending into the cavernous tissue, are the small racemouse mucous glands of Littré, the ducts of which pierce the mucous membrane to open on its free surface. Excepting in the fossa navicularis the mucous membrane is arranged in many longitudinal rugæ. There are also certain transverse folds. Many papillæ exist throughout the canal, being especially numerous in the region of the fossa navicularis. When put on stretch the membrane is seen to be marked by fine longitudinal striatims.

In the process of the acute attack the germs have entered the submucous layers and produced an exudative inflammation. As the disease abates, they are first carried out of the deeper tissues and then from the epithelium. There is reabsorption of its morbid products and the urethra returns to its normal histology.

Under certain circumstances, however, (perhaps the severity of the attack, with or without complications, or an insufficient reaction so that the attack may have seemed a particularly mild one, or indiscretions on the part of the patient, or faulty treatment, or what not) in some locations, the tissues are not freely cleansed of the invading germs. They are harbored especially in the glands and crypts and adjacent parts, a round-celled infiltration takes place and gradually the connective-tissue cells proliferate and new connective tissue is formed.

Oberlaender, Neelsen and other investigators, chiefly among the Germans, have done much to elucidate the pathology in the light of endoscopic appearances. Oberlaender divides the infiltrative processes into Soft Infiltrations and Hard Infiltrations. The soft infiltrations are chiefly cellular. There is no new connective tissue of account. The elasticity of the urethral wall is not impaired. Clinically they correspond to sub-acute gonorrhœa, and may be found six to eight weeks after the onset of the acute attack. They may disappear within a few weeks or even days, but untreated are apt to progress to a more chronic form. Through the endoscope they are chiefly apparent where these are most longitudinal folds and in the orifices of the crypts in the anterior urethra. The swelling diminishes the number of the folds and makes each more prominent. Marked swelling obliterates the striæ; but, if the swelling is less marked, they are more prominent than in health. As is

* Read at the Annual Meeting of the Fifth District Branch of the Medical Society of the State of New York, at Owego, N. Y., October 3, 1912.

the case in health, the central field is closed. Soft infiltrations are common in the posterior urethra; here the inflammation is apt to be diffuse, and in simple cases most marked in the membraneous urethra.

Hard infiltrations are characterized pathologically by the presence of proliferating connective tissue which diminishes the elasticity and distensibility of the urethra. They are of later development than the soft form and clinically show a persistence, under treatment, proportionate to their age and to the degree of sclerosis. Except in the most sclerotic, there are still present enough cellular elements in these cellosities to render them capable of absorption. Their favorite location is in the pendulous urethra. Two varieties are distinguished, though the two often blend. *Moist or glandular infiltrations* are characterized by congestion and catarrh of the glands and crypts. As seen through the endoscope their orifices project and are reddened. *In the dry or follicular* form, the process in the glands runs a more chronic course, or has reached a further stage,—the contents of the glands and crypts are inspissated and encysted, or the glands are atrophied,—their orifices are not conspicuous through the endoscope. Infection of the glands may produce periurethral abscess with its sequela. In the dry form these cysts frequently produce nodosities, readily palpable from the external surface of the penis. In all marked, hard infiltrations the central field is more or less open.

In Oberlaender's classification hard infiltrations are of three degrees: In those of the *first degree* the caliber of the urethra is only slightly decreased. Those of the *second degree* will admit sounds under 23 F. without laceration. The *third degree* comprises all infiltrations where the caliber is narrower than this. Infiltrations of the second and third degrees are clinically known as strictures, though pathologically any hard infiltration is a stricture, inasmuch as it interferes with the distensibility of the canal.

Hard infiltration of the first degree develop from some months to a year after the infection. Seen through the endoscope the mucous membrane over the diseased area is slightly paler than normal. The longitudinal folds and striæ are indistinct or absent. In the glandular form are elevated reddened points corresponding to the orifices of the glands and crypts. The epithelium is less glistening than normal and there is a more or less advanced stage of desquamation seen in filmy patches.

Hard infiltrations of the second degree require at least three or four months for development, and more often much longer. The endoscope shows all the folds in the affected areas to have disappeared. The worst forms present a patchy, granular appearance. The proliferation goes often into the sinuses and envolves the tissue in other than the periglandular areas.

Hard infiltrations of the third degree may require several years for development, though it is not impossible for them to form in three or four months in the anterior urethra. In these cases of light stricture a much greater area is involved than is apparent to the sound. In such a stricture, midway in the pendulous urethra, usually the greater part of the anterior urethra is more or less infiltrated. Back of a tight stricture the canal may be dilated and contain shallow pockets. In the posterior urethra, slight, hard infiltrations may form within one year, but stricture requires several years.

As to changes in the epithelium, disease usually diminishes the normal lustre of the epithelial cells, though they may appear more brilliant than normal in superficial infiltrations where there is considerable mucous catarrh. In the hard infiltrations, nutritional changes are such that the columnæ epithelium gives place to the squamous type, desquamation is more or less rapid, and in advanced lesions the superficial cells tend to cornify and heap up in opaque crusts. In spots, the epithelium may be absent, the capillaries of granulation tissue appearing on the surface and bleeding easily when disturbed.

Based on this pathology, here merely outlined, the broad lines of treatment are indicated. We are dealing here with an essentially chronic process. Our aim is to aid the natural forces of the tissues clogged with pathological products to reassert themselves that they may regain, as far as possible, their normal tone and function; absorption must displace proliferation. Of what avail is reliance on internal medication in these cases? At times it can act as a valuable aid to local measure, but alone, such treatment is about as disastrous as unaided mental suggestion in the treatment of a broken bone. It may temporarily check the discharge, but the mischief in the tissues progresses, while the patient is deluded by an abeyance of his symptoms. Yet this is frequently the only treatment given the earlier cases. These local lesions are within the reach of mechanical and surgical measures, and the sooner these measures are instituted the better. *Restitutio ad integram* is possible in early cases only, the soft infiltrations. But, fortunately, in all but the advanced cases with serious complications, if the coöperation of the patient is secured, a symptomatic cure may be expected.

The first essential is an accurate diagnosis. This requires special study and experience with the ingenious methods and instruments which able surgeons and clinical pathologists, who have labored in this field, have devised. Misdirected and ill-judged surgical treatment is capable of much harm; the diagnosis must be accurate, the treatment careful, as gentle as may be, but persistent.

The electrically lighted endoscope, in the hands of one practiced in its use, offers a means not only for the direct observation of the canal from meatus to bladder, but also for accurately

directed local treatment of various foci. By it, as by no other one instrument, the progress of the treatment may be watched, the success or failure of each treatment being directly revealed. Through it, too, the skilled observer may see the signs which presage the relapse (which must occasionally occur) and take timely measures to modify it.

The steel sound, as a dilator, has the unique advantage of exerting equal pressure on all points with which it comes in contact, and has not yet been displaced by any of the dilating instruments subsequently devised. As it is forced into the opening for this purpose, its surface must be smooth and well lubricated. The smaller sizes must be used with great care, and in beginning the dilatation of a stricture of small caliber, especially of the posterior urethra, it is usually safer to begin with the more yielding bougies. For dilating the posterior urethra, sounds with a narrow neck, producing a minimum trauma at the meatus, are preferable. In stretching this part it is not advisable to introduce many instruments at a seance.

Various expanding dilators have been devised. The modern instruments of this kind now in use have the following advantages: They obviate the necessity of extensive meatotomy, also that of the introduction of more than one dilator at a seance. They are shaped in such a way that a given portion of the urethra may be more fully dilated than with the sound, and still leave the healthy tissues comparatively undisturbed. With them, too, the required dilatation for the seance may be obtained so gradually as to cause a minimum of pain.

The Kollman four-bladed dilators have superceded, in the main, the two-bladed instruments of Otis and Oberlaender, though the latter still have a place in the treatment of some strictures of small caliber. The maximum pressure of the Kollman blades is distributed to double the number of points, the stretching takes place in two planes instead of one, and less traumatism results.

Kollman recommends gradual dilatation for all kinds and degrees of infiltration except the usual cases of soft infiltration of the posterior urethra which respond promptly to irrigation alone. On soft infiltrations, in the anterior urethra, he uses dilatation combined with irrigations and expects a cure after three or four dilatations, and from six to eight irrigations with nitrate of silver; *i. e.,* in five to six weeks' time.

The hard infiltrations of the first and second degrees,—the average cases of chronic gonorrhœa are more resistant to treatment. They require also greater stretching at each seance. The intervals are six to ten days or longer in the moist form according to the severity and persistence of the inflammatory symptoms of reaction. Irrigations, and sometimes internal medication, and hot baths are used to control these reactive phenomena. The results of treatment are watched carefully with the endoscope and premonitory signs of relapse are looked for.

The lesions react differently to dilatations. In the soft and in the moist forms of the hard infiltrations the discharge is temporarily increased by the treatments, due in great part to the breaking down of the soft tissues. In the dry, hard forms the discharge, if any, usually disappears for several days.

In hard infiltrations of the third degree great care must be used, for in these cases, particularly baneful germs may lurk in the urinary tract, and certain of these patients are already in a bad condition from urinary retention and its sequela. It is a good plan to take cultures from these urethras and to give a preliminary course of treatment with vaccines, internal medication, and urethral injections, till the discharge and urinary symptoms are much abated. Then dilatation is commenced, very gradually at first, with elastic and filled bougies till a caliber of say 20 F. is obtained, when steel sounds may be used before the more active treatment with dilators is begun. In all cases, but here, especially, this rule should be adhered to; never repeat instrumentation till the reaction has subsided, and then, very guardedly.

Any considerable bleeding following dilatation means an error in technique. The aim in the treatment is not to directly increase the lumen by force, as was that of the old practice, but, by the inflammatory hyperæmia induced, to produce absorption of the new connective tissue. It is expected, indeed, intended, that there shall be some traumatism and it is around the minute subepithelial lesions thus made that absorption is seen to commence. But rents of any degree, in the mucous membrane, are baneful; besides the immediate dangers of relapse and system infection, and the distress caused thereby, they are seen to be locations upon which soft infiltrations are prone to develop, they at all events greatly delay the treatment by dilatations (which may not be resumed till they are firmly healed) and when healed they leave a permanent scar. For this reason divulsion and extensive electrolysis are pernicious. Internal urethrotomy must be practiced in a limited number of cases. It is indicated particularly in strictures of the anterior urethra, corresponding to the unyielding or "resilient" hard infiltrations of the second and third degree of Oberlaender. The complications demanding external urethrotomy will not be here considered.

In the chemical treatment of the mucous membrane, astringents and oxidizing agents are used. The astringents, among which nitrate of silver takes first rank, are employed here in stronger solution than in the acute form and for the purpose of destroying the diseased epithelium

and creating an absorptive, inflammatory reaction in the deeper lesions. Their greatest use is on limited areas of the mucous membrane where they may, through the endoscope, be injected into the crypts or applied on applicators, the excess being wiped away. There should be an interval of two or three days between these treatments. Janets' deep injection is a useful procedure in soft, posterior infiltrations, but it should not be repeated too frequently, and often gradual dilatation will accomplish more in the way of absorption and with less damage to the epithelial covering.

Bland antiseptics, such as boric acid and weak permanganate solutions are used to wash out the urethra before and after dilatations. Mild oxidizing agents, such as weak solutions of potassium permanganate, and zinc sulphate, with the less irritating organic silver preparations, are useful injections in the hands of both physician and patient between seances, and, in conjunction with weak solutions of astringents to control a severe reaction.

Internal medication is also very useful at these times. Oil of sandalwood, the balsams, and hexamethylenamin are among the best drugs to be thus employed. Salol is at times a good adjuvant. Their effect on the digestive organs, and especially on the kidneys, must be watched.

Vaccine treatment may be a valuable aid to the measures above-mentioned. It is the rational ally of hyperæmic treatment here, as elsewhere. In using it, dilatations or string injections should not be given during the negative phase. The pure gonococcus vaccine is not, as a rule, wholly efficient. For these mixed infections a mixed stock vaccine, including besides the gonococcus, colon streptococcic and staphylococcic organisms should be used, or a fresh autogenous vacine should supplement that of the Neisser organism.

Finally we must not neglect the dietetic and hygienic treatment of these cases, nor the diseased conditions of other organs which may coexist. The diet in the average case is not of so much importance here as in the acute stage, but alcohol is a poison to the mucous membrane and, at any rate, an unsafe indulgence which, as a rule, should be absolutely interdicted.

Results in the treatment of chronic gonorrhœal urethritis, as well as of any chronic disease, are slow of attainment, but with the coöperation of the patient, careful and judicious treatment should accomplish a complete cure, in a short time, of the uncomplicated soft infiltrations, and with patience, a symptomatic, permanent cure of most cases of stricture, and, what is of far greater value, render these men, so far as specific infectiveness goes, safe members of the community.

RECENT ADVANCES IN NEUROLOGY AND PSYCHIATRY.*

By EDWARD L. HANES, M.D.,

ROCHESTER, N. Y.

WHEN your President invited me to address this assemblage some weeks since, he expressed a wish that the topic for consideration on this occasion be the "Recent Advances in Neurology and Psychiatry," but left it to the judgment of the speaker as to just what constitutes real advance in these allied fields. The vantage-ground from which this determination has been attempted, therefore, is largely that of the clinician, in the belief that it is in the clinical aspect of medicine, with its problems of prophylaxis and the diagnosis and treatment of actual disease-processes, wherein the ultimate test of true advance must always reside. This is, likewise, the essentially practical side, and I take it that as practical physicians our mutual interest lies in that direction. The consideration of medical progress from this view-point does not, however, preclude interest in, and reference to, the researches of those investigators and laboratory-workers who are responsible for the metamorphosis of theoretical and experimental knowledge into practical utility by clinical medicine, so that the speaker to-day, is inclined to avail himself of the widest latitude in the present dealing with our subject.

As we glance backward over the achievements of the past few years we are impressed, in this as in other medical fields, with the wealth of material which has accumulated behind us which might properly be considered in such a review as we contemplate: so extensive, in fact, that the limitations of our available time imperatively demand a judicious discrimination in the selection for discussion of that which seems most important and best adapted to necessarily brief analysis. With your kind indulgence, therefore, the speaker will refer only to those things in the way of recent advance in neurology and psychiatry which have impressed him as coming within the scope of this meeting.

While the older psychiatrical nomenclature bore the impress of cosmopolitan writers, during the later years of the nineteenth century, great advance in the methods of psycho-pathologic study had taken place abroad,—especially in Germany, under the leadership of Kraepelin, Wernicke, Ziehen, and others,—of which we were apparently unaware. With the wonderful forward movement in the housing and care of the insane which had taken place during those years had gone a subconscious feeling of self-sufficiency on the part of English and American psychiatrists, which either precluded thoughtful consideration of the work of their German contemporaries, or at least rendered them passive

* Read at the Joint Annual Meeting of the Seventh and Eighth District Branches of the Medical Society of the State of New York, at Sonyea, September 25, 1913.

thereto. I recall distinctly the uncertainty which characterized our studies of the psychoses during the early period of my own asylum experience, and the seeming inconsistencies of which we were often even then aware, but which with our methods of investigation we were quite unable to correct. Our studies of patients as embraced in our case histories were hap-hazard affairs, usually bringing out in an indefinite way the data concerning our patients which was largely apparent on the surface, and no painstaking inquiries along the lines of psychologic analysis on the basis of definite mental reactions to definite tests were made. Our recorded descriptions of psychopathic phenomena as observed by us, were narrative in character without guiding principle other than to note that which impressed us as unusual in point of general demeanor and conduct, delusions and hallucinations, mental capacity, etc., to which were appended brief references to whatever physical symptoms we observed. Inevitably, with such methods, the case histories reflected in large degree the individual observer, and since we followed no definite lines of systematic inquiry it is not surprising that the records of observation should vary so greatly in character, even in the studies of similar groups of cases, as to lend themselves but poorly to efforts at correlation. It could not be otherwise than that our "manias" and "melancholias," for instance, —groups constructed on purely symptomatic grounds,—when studied in such manner, should include large numbers of quite dissimilar types of cases. Physicians thus classified under "maniacal exaltation" nearly all cases of excitement, over-activity, irritation, violence, destructive tendencies, and impulsiveness arising on purely symptomatic bases; and under "melancholiac depression" the greater number of cases manifesting real emotional depression, apathetic lack of emotional expression, mutism and inactivity, as well as most cases of stupor, arising on similar grounds. As will be readily inferred, this led to the classification under these two heads of the vast majority of all cases admitted to institutions for the insane. Clouston, of Edinburgh, whose text-book was one of the standard authorities, and a work most frequently consulted by students for diagnostic purposes, records the total admissions to the Royal Edinburgh Asylum during the seven-year period between 1874-80, as 2377 cases, of which 1310, or fifty-five per cent, were classified as "mania," and 729, or thirty-six per cent, were considered cases of "melancholia," leaving only 338, or nine per cent, to be otherwise classified. Casual reference to the Annual Report of the State Commission in Lunacy of our own State of New York, for the year 1896, shows that 5615 insane cases were admitted to the eleven state hospitals during that year, of which 3362, or practically sixty per cent of the entire number were classed under "mania" and "melancholia"; and these figures constitute a fair index of those of other years both prior and subsequent to 1896.

Little attention was given to course, prognosis and probable outcome of the various cases included under these designations of *mania* and *melancholia;* nor, indeed, were the individual symptoms, themselves, carefully studied. Quite arbitrarily a mild excitement was called "simple mania," or if prolonged unduly, "sub-acute mania"; moderately intense excitement was called "acute mania," but if the case had not recovered after a year's residence in an institution the diagnosis was revised to "chronic mania," occasionally to "terminal dementia." Recurrent excitements which cleared up rapidly and were discharged "recovered" were not at first recognized as such, and the diagnosis of "acute mania" was usually offered; but after the third admission, when the character of the case was apparent, the diagnosis was "recurrent mania," and subsequently the discharge record must read "improved" and not "recovered", notwithstanding the disappearance of every mental symptom. Extreme motor excitement, with or without obscured consciousness, but showing a tendency to rapid exhaustion from the intensity of the symptoms was called "acute delirious mania" and had an almost uniformly fatal prognosis. Periodically recurring cases characterized by excitement, depression and normality occurring as successive symptoms in the form of a cycle, was a combination of "mania" and "melancholia" which was recognized and was called "circular insanity." Mild depressions or states of mental hebetude, apathy, physical lethargy, or partial stupor without delusions, were designated "simple melancholia." As these respective symptoms deepened to the point of loss of spontaneous speech, motor inactivity with stupor and mental inaccessibility, or moderate motor activity without excitement, but with fantastic, hypochondriacal and pessimistic delusions and hallucinations, the cases were denominated "acute melancholia," and if not recovered and still under treatment at the end of one year the diagnosis was revised to "chronic melancholia." It was assumed that about fifty per cent of each group recovered, "melancholia" being somewhat more frequently followed by favorable termination than "mania," but the greatest confusion existed in our efforts to make prognoses, and each case was a matter of arbitrary speculation in this regard,—sometimes we guessed right and sometimes wrong. Clouston, to whom we have previously referred, gives this caution in his discussion of "melancholia"; "be guarded in giving a definite prognosis in almost every case. The greater my experience becomes the more guarded I am. Some of the most favorable looking cases will deceive you, while some that look most hopeless will recover."

It would take us too far afield in a review of this kind to go further into all the idiosyncrasies of the various English and American

writers on psychiatry, more than to say that all sorts of cases were classified in all sorts of ways, while there was little systematic effort to study the fundamental issues in the psychoses for prognostic purposes; and this want of definiteness and guiding principle commonly left the physician almost as confused, mentally, as his patient. The affective emotional states of exaltation and depression were not at all necessary in the diagnosis of "mania" and "melancholia." It held little significance for us that some of the cases included under these heads had hallucinations, while others did not; that in some, the content of thought was silly and inconsistent, in the extreme, and uninfluenced by the changing conditions of the surroundings, while in others thought processes were keen, their remarks often witty and flippant, being constantly guided by conditions in the environment; that in some consciousness was obscured, while in others it remained clear; that in many the type of activity displayed was totally different from that observed in others; that some made perfect recoveries, while others pursued an essentially chronic course, or manifested evidence of a deterioration process. It was further erroneously asserted by a majority of our psychiatrists that repeated attacks led inevitably to deterioration changes in practically all cases. We seemed not to appreciate the doubtful importance of exophthalmic goitre, rheumatism, gout, phthisis, oxaluria, phosphaturia, menstruation, lactation, masturbation, etc., as specific, etiologic factors in the causation of mental disease, quite apart from trying to establish them as special types of alienation, as was often done. And the fallacy of puerperal insanity, and similar groups, in which we deliberately tear from their proper settings cases of dementia præcox, manic-depressive insanity, and toxic-exhaustive delirium, was not apparent to us.

Kraepelin, of Munich, whose ideas in recent years have exerted a definite shaping influence on American psychiatry, undertook careful studies of groups of cases, surveying the changing symptomatology from the incipiency throughout the course to the termination of the disease. He considered the evolution of the whole life history of his insane patients, passing in retrospect on the development in such as had reached terminal states. By such methods he was able to determine certain fundamental differences between the groups of cases commonly included under the "manias" and "melancholias." He observed the fact that a large proportion of these cases deteriorated intellectually, while others did not, and that by reason of certain fundamental differences in the symptomatology of those who did and those who did not so deteriorate, it was possible to render reliable prognoses of the probable outcome in the typical cases. It was his experience that the emotional affect in the two classes was quite different—in the one, being characterized for the most part by its absence; in the other, consisting of true exaltation in the nature of exhilaration and excited irritation, or true depression and sadness. He noted differences in the content and elaboration of thought of each class; one being characterized by him, from its peculiar senselessness, inconsistency and incoherency, as "dilapidation," while in the other, according to whether there was exaltation or depression, there was an uncontrollable flow of rapidly changing ideas leading to what he termed "flight," or inability to formulate and elaborate ideas with facility, leading to a "dearth of ideas." He also saw differences in the motor reactions of these two classes, being normal, impulsive without guiding thought, or resistive and negativistic in one, while in the other it was remarkably free and purposeful and in keeping with the content of thought in the excited cases, but deficient, delayed or retarded, though not usually at all resistive, in the depressed cases, constituting in them an index of the unusual facilitation or inhibition of the intropsychic thought processes. He found that one type usually manifested hallucinations freely, while in the other they were comparatively rare. The first group he called *Dementia Præcox*, and pursuing his studies further in the second, he came to the conclusion from the data specified above, that the exalted type of the disease was the complete antithesis of the depressed form. Moreover, though they uniformly made good recoveries, they were particularly liable to subsequent attacks, and that such attacks, in many cases, were often prone to alternation, on several occasions the maniacal complex being presented, then an attack coming on and presenting the typical depressive symptom-picture, or vice versa. In this connection, too, he saw cases beginning with the depressive phase of the disease and passing within a short time to the maniacal complex; or, beginning with the latter symptoms, soon passing into a state marked by the typical depressive symptom-complex. There were no tangible symptoms whereby he could foretell which cases would suffer recurrences, or how long an individual attack would last, but in certain cases a peculiar periodicity was noted, while in others, in addition to periodicity, the psychosis was marked by a course of alternation between exhilaration, depression and normality in the form of a cycle of longer or shorter duration. These latter cases, though separated from the "mania" and "melancholia" groups by former writers, under the head of *folie circulaire*, or circular insanity, were maintained by Kraepelin to possess no other differentiating characteristics from the complexes of symptoms presented by the excited and depressed types under consideration than the periodic and cyclic arrangement, and they were all included by him because of their related and interchangeable characteristics under the term Manic-Depressive Insanity.

Such then, is the résumé of Kraepelin's principal contribution to psychiatry, a contribution

so rich in intrinsic value, as well as in method of sizing up mental phenomena, as to undoubtedly constitute a distinct epoch in psychiatry. The work of Jellife, Hoch and Meyer, in our own country, and of Jung, in Switzerland, has since, greatly amplified our knowledge of the dementia-præcox group, the former, having described the type of individuals especially liable to develop this disorder, because of their peculiarities of make-up, inability to balance the experiences of daily life, and anti-social qualities, while Hoch and Meyer have recognized the psychogenetic mechanisms underlying its development. Jung, on the other hand, has formulated the principles of psycho-analysis through the medium of which it is possible, in many instances, to unravel the tangled skein of development in otherwise obscure cases.

While but few startling additions to our former knowledge of the organic pathology of the psychoses, have been recorded, there are two note-worthy exceptions to this statement. In the *Journal of Experimental Medicine,* February 1, 1913, Noguchi and Moore reported the isolation of the treponema pallida from the brains of twelve cases of general paresis. These organisms, by reason of their motility and penetrating powers, had wandered deeply into the nerve-cell layers of the cerebral cortex, in regions distinctly removed from the blood vessels, where the usual lesions of paresis and brain syphilis are commonly found. The important fact of these observations, of course, is the actual finding of the syphilitic organism in paretic brains, but their conclusions as to *why* the organisms of brain syphilis and general paresis are found in widely variant situations are most interesting. They state, that "it is not difficult to conceive in the former of a localized syphilitic disease in the meninges with or without endarteritis but with the preservation of a protective barrier against invasion of the brain substance; while, in the latter, a generalized spread of the organisms is permitted either by the weakening effects of alcohol or heredity, or by the predilection of a certain strain of the organism to attack the nervous tissue. In the actual presence of the treponema which, in at least one case, had the appearance of being in an active state, is seen an adequate reason for the serological findings in paresis, and in their deep location and wide dissemination the inefficacy of antisyphilitic treatment is made clear." And they add most pointedly: "How much more satisfactory it is to have a tangible etiology than to labor with theories of metabolic disorder, over-production of syphilitic antibody, deficiency of lecithin, etc. Paretic seizures can be understood as results of new invasions of the organism rather than that they are due to vague metabolic disorders or cerebral congestion. The leukocytosis which accompanies them agrees with this explanation." Finally they state, that their "position with regard to the syphilis-paresis question remains unchanged in certain respects. Unless the treponema pallida can be shown in all cases of paresis our argument for 'no syphilis, no paresis' is not strengthened. We still have no explanation for the long interval of years between syphilitic infection and paresis. That the organism has lain dormant during that time seems to be shown by certain cases, in one of which with positive syphilis ten years before a negative complement-fixation test of the blood serum had been noted, but a year and a half later paresis had developed and with it a positive reaction in the blood serum was obtained. For the widespread degenerative changes in the nervous system which seem to have no relation to the chronic inflammatory reaction we must seek elsewhere for a cause than in the presence of the treponema. The question of whether or not paresis is true syphilis is also still open, but the strongest argument against that assumption has been removed."

In 1901, in an issue of *Brain,* Dr. Adolf Meyer, then Director of the Psychiatric Institute of the New York State Hospitals, described under the term "Central Neuritis," a disease of the cerebral cortex attended by characteristic changes in the cortical nerve cells and manifested by a fairly constant and recognizable clinical syndrome. Since that time a considerable number of cases have been clinically and pathologically recognized and described by other students in psychiatry. "Clinically the disorder seems to be an acute or subacute process lasting from a few days to several weeks. It occurs as a terminal disorder in a number of psychoses, particularly in certain asthenic conditions, frequently accompanied by diarrhœa and febrile reactions, and is characterized, for the most part, by loss of weight, progressive weakness, muscular tension and rigidity, peculiar twitchings, incoördinate movements and motor restlessness, the latter at times amounting to jactitations of the limbs. The mental condition is usually that of an anxious, perplexed agitation, or a stuporous and, at times, delirious state. Anatomically, gross changes are absent, or are those incident to the period of life. Microscopically, a diffuse parenchymatous affection, especially of the largest nerve elements in the neural tube (most evident as a biaxonal reaction in the Betz cells) and decay of the myelin sheaths,—the process involving the supra-segmental elements much more than the segmental ones." (Somers, *State Hos. Bul.*)

In 1906, Alzheimer described a disease of the cerebral cortex occurring in the presenile period of life and attended by mental symptoms. These changes consisted of widely disseminated plaques occurring throughout the cortex and in the basal nuclei, accompanying which were definite changes in the neuro-fibrils. No discussion of this disease, beyond its mention, will be undertaken as its status apart from senile changes has not yet been definitely determined.

With the great increase in the numbers of

insane, now being cared for in our state hospitals, has gone a corresponding increase in the cost of maintenance of these institutions, last year amounting to about $8,000,000, in the State of New York. Both from the humanistic and from the economic aspects of the insanity problem, therefore, it is but to be expected that a positive demand should be felt as to the necessity for investigation of the ascertainable causes of mental disease, the various reasons for its increase, and the utilization of such knowledge in an effort to restrict, so far as possible, this great tax upon humanity and upon our financial resources. Studies relative to the influence of heredity have been undertaken with no small degree of enlightenment into this mysterious and baffling problem. Most notable, perhaps, have been those of Davenport, Secretary of the American Breeders' Association, at Cold Spring Harbor, L. I., Goddard, of the Vineland, (N. J.) Training-school for Feeble-minded, and Rosanoff, of the Kings Park State Hospital, L. I. While there is still lack of unanimity of opinion among psychiatrists as to what legislative action should properly be taken looking to the limitation of marriage among the unfit, and the control of defectives, as a result of such studies in heredity, the fact remains that scientific men generally are alive to the problem and its bearing on the prevention of an unstable progeny, predisposed to mental disease. At the last meeting of the American Medico-Psychological Association, in June, 1913, this topic aroused the greatest amount of interest and discussion among its members, and it was voted that an entire session of this great medical organization should be devoted to the consideration of this problem of eugenics, preliminary to placing itself on record as advocating some definite stand in the matter of legislation, at its next meeting in 1914. Already several states have enacted laws aiming to restrict marriage among the so-called unfit, but as yet no universal plan for dealing with this complex question, based on incontrovertible scientific fact, has been determined.

An exhaustive enquiry as to the nativity of the 33,000 patients confined within the state hospitals of New York, last year, has brought out the fact that nearly one-half of this number are of foreign birth; and since the great port of entry for incoming immigrants is New York city, there has, for several years, been maintained by the New York State Hospital Commission a board of trained alienists, at this port, for the purpose of precluding entrance into our country of those foreigners who present recognizable evidence of an unstable or aberrant mentality. In addition to this task at the time of landing, this board also undertakes the deportation of those patients of foreign birth who have found entrance into our state hospitals within three years of the date of their arrival in this country. While this work is undertaken primarily from the economic standpoint, indirectly it undoubtedly likewise has a distinct influence on this problem of eugenics among our people.

Within the last few years the State Charities Aid Association, of New York, has undertaken active work of preventive character in the field of mental disease. Realizing the wide range of etiologic factors in the production of the various psychoses, this philanthropic organization decided to establish as a branch of its general work in charitable fields, a committee on mental hygiene, with Prof. Everett S. Elwood, as an Assistant Secretary under Hon. Homer Folks, in direct charge of this department. A systematic plan of campaign for popular education as to the nature and causation of mental disease has been vigorously prosecuted through the medium of public meetings, newspaper articles, and special publications issued by the Association, itself. In the larger cities of our state, local committees to work in association with Prof. Elwood have been formed, and there has been noted a healthful public interest in these problems. In addition to this effort at public education, the State Charities Aid Association has advocated the establishment of psychopathic wards in connection with the larger general hospitals of the various cities throughout the state for the more adequate treatment of incipient cases of mental breakdown before commitment to a state hospital is possible, or where it may be undesirable. Likewise, on the part of the state hospitals it has urged the appointment of specially qualified investigators to get into close touch with the families of those predisposed to mental disease, in an effort to study the possible influence of environmental conditions, such investigators being known as "field workers." The state hospitals have entered into the spirit of this preventive effort and have, during the past several years, opened their doors to certain proper and appreciative cases on the verge of mental collapse as so-called "voluntary patients," without the necessity of legal formality and judicial commitment. Many worthy individuals have availed themselves of this privilege in the hope that early treatment might prevent complete loss and destruction of their mental faculties. In further extension of this work the present legislature at its winter session passed a bill permitting the establishment of free out-patient clinics under the auspices of the various state hospitals, which it is believed will prove productive of good results. Another interesting and helpful activity on the part of these institutions which deserves mention as possessing decided merit as a preventive measure, though not primarily conceived in that capacity, has been the establishment of so-called "aftercare committees" at many of the state hospitals, through the medium of which the attempt is made to follow discharged patients into their homes and employment in a helpful way, so to prevent relapse or recurrence where

prudent management would give prospect of such success.

Closely allied to the psychoses are the so-called psychoneuroses, in which particular field the principles formulated by Freud stand forth as a most remarkable advance in our knowledge of the mechanisms underlying the development of these peculiar mental states. In fact the conclusions of this investigator are so revolutionary. and yet elaborated only after such painstaking and tireless effort, as probably to transcend in importance and accuracy all other philosophic attempts to understand and interpret the mental mechanisms of abnormal psychic states. Freud's work is not widely understood or accepted in this country because of the startling and distinctly repugnant character of some of his conclusions, though principally for the more pertinent reason that his studies deal with subtleties of the human mind which have hitherto seemed totally inexplicable, to such an intricate and philosophic degree that very few of us are, ourselves, sufficiently philosophic to permit us to follow him in his deductions, especially in the absence of definite training in psychology and in the application of the principles of psychoanalysis. It would be impossible to undertake any extensive résumé of Freud's work here, but briefly, it may be said to postulate an intimate and comprehensive survey of the manner in which the elements of human intellect are originally acquired; of the orderly arrangement and associations of ideas in groups, or complexes; of the various levels of consciousness at which these complexes reside; of the influence of the emotional states, and of the methods of action and reaction, especially those of dominating and instinctive character under stress of abnormal conditions in individuals of poor balancing power and neuropathic make-up. These mechanisms are in the nature of a defense against psychic shocks, or traumata, under the influence of the primitive instincts of fear, rage, sorrow, etc., or towards mental concepts which are intolerable to us and from which our minds instinctively shrink because of moral or other reasons. It is easier for us to understand these reactions if a simile is drawn between this idea of psychic defense and defense of a physical character. Thus, we dodge if a blow from the weapon of an opponent be directed toward us, and so strive to protect our bodies from injury. If, however, the blow be in the nature of a thought, or an idea which we cannot bear, our minds seek to ignore it, usually by rejecting it from our thoughts and refusing to consider it,—in other words, simply by submerging it below the level of ordinary conscious awareness, and trying to forget it. According to Freud's deductions, repressed and unreacted to concepts of strong emotional content tend to become dissociated from consciousness and are prone to cause subsequent explosions and to demand satisfaction, if not consciously, then unconsciously, through the medium of what is termed conversion and compensation. It is this subconscious demand for satisfying reaction, with tendency to conversion and effort at compensation, which gives rise to the bizarré, and often seemingly inexplicable conduct of the hysteric. We can get a suggestion of this mechanism if we recall the common experience of being suddenly angered or grieved under circumstances which necessitate stifling our feelings. Every one is familiar with the feeling of being pent-up and ready to explode, so to speak, and of the relief afforded by talking it out to a friend, or using an expletive, or, as the ladies say, "having a good cry"—all of which reactions really constitute a safety-valve effect on the part of our mental mechanisms against possible damage of an intellectual character. Freud formerly believed that the psychic traumata responsible for setting these mental mechanisms in operation were usually in the nature of up-setting sexual experiences, frequently traceable to the early and impressionable period of childhood, and many of his followers still hold inexorably to this view. It is difficult for most of us to understand if these mechanisms of mental reaction be founded on fact and not on purely theoretical bases, why the unexpected death of a relative, or being brought suddenly face to face with the fright of an injury threatening loss of life or limb, may not serve to initiate such reactions just as surely as the up-set arising from a repugnant sexual experience. It was this inflexible pre-conception that, in the last analysis, all hysteric phenomena must be established on a sexual basis which has prevented the unbiased investigation and acceptance of Freud's mechanisms in this country. I think there can be no question among the open-minded that the restrictions which civilized society throw about the sexual instinct during childhood, and adolescence particularly, serve to render this a fertile field,—perhaps the most fertile field,—in the psychic life of many for internal conflict and maladjustment. It is the one, primitive instinct within the human species which is denied free play or free discussion, but which the individual attempts to meet, either wisely or morbidly, for himself and, unaided, by himself. Can we doubt, then, that all too often the balancing qualities of the individual are insufficient and that these instinctive mental mechanisms are set in operation, just as Freud has for many years taught? At any rate his method of therapeutics in handling these cases consists in attempting to uncover these buried complexes by means of psycho-analysis, and bringing them into harmonious relationship with consciousness. He seeks to make the individual better acquainted with himself and with his own psychology, and leads him up to the cultivation of that great essential of human character, so sadly lacking in these particular cases, the quality of philosophic dealing with events and harmonious adjustment to his difficulties.

Time forbids the consideration of many other noteworthy advances in neurology and psychiatry, but we should be guilty of important omission were we not, at least, to mention the valuable work of Crile, Cushing, Frazier, and others, in the field of neurological and brain surgery.

Crile, in advocating the theory of what he terms "anoci-association," really deals with the reactions of brain cells to peripheral stimuli. As you recall, he found that the large cortical cells of experimental animals subjected to fright and to the pain of operation exhibited marked change in their reaction to certain stains, largely losing this property. It is Crile's belief that the pain transmitted centripetally from the seat of operation is not inhibited by the anesthetic, but registers itself cortically by inducing characteristic protoplasmic alteration in the cellular perceptive elements, the anesthetic serving merely to obscure the conscious appreciation thereof. As a result of these cortical cellular changes throughout the sensorium he postulates the occurance of surgical shock. The wonderful effect of a general anesthetic in the direction of limitation of surgical shock is appreciated, but he feels that the technique, so to speak, is not complete through the agency of general anesthesia alone. Therefore, he attempts to limit the influence of any possible fear or apprehension which the patient might feel prior to operation, by hypodermic administration of morphia, and he blocks the transmissibility of the peripheral nerves about the seat of operation by infiltration anesthesia with quinine-urea hydrochloride, or other local anesthetic, so that the painful impressions are unable to reach the cortex and so contribute to the condition of surgical shock. Crile claims that the statistics of his recent operative work amply sustain this theory of "anoci-association" in actual practice, in which event the importance of this contribution to surgical technique is most obvious.

Cushing in his monograph on the affections of the pituitary body has made one of the most important contributions to American medical literature of recent years; while his decompressive operation for the relief of symptoms in cases of obscure brain tumor is a valuable surgical procedure, resulting specially in the prolongation of life and in the prevention of rapidly occurring blindness, so commonly a distressing complication of this unfortunate condition. Cushing, Frazier, Taylor, and others, have advanced our knowledge very greatly as to the possibilities of nerve and spinal cord surgery, specially in the matter of engrafting one nerve trunk upon another,—the so-called anastomotic operations.

And in the more strictly medical field, as a closing word, the work of Flexner and his assistants in their bacteriologic and serologic studies of the blood and cerebro-spinal fluid; especially the elaboration of a serum for the cure of cerebro-spinal meningitis, may be referred to as occupying a high place among the benefactions which laboratory investigations have conferred upon the science of medicine, and so upon humanity. Rosenau, and Frost, in their studies of the transmissibility of the virus of anterior poliomyelitis through the medium of the *Stomoxys calcitrans,* or common stable fly, have done much to stimulate in definite channels future investigations of this vexed question as to the manner of dissemination of this contagion. Therapeutically, too, the place of salvarsan in the treatment of syphilis of the nervous system deserves consideration, Collins, and others, having expressed themselves very strongly as to its value here, not only in the active cerebro-spinal syphilides, but also in those conditions which have hitherto proven so resistive against therapeutic control, viz. general paresis and specially, tabes dorsalis.

But it is appreciated that all these mere references might well be expanded into a review fully as interesting as any of the material which we have already considered, so with my thanks for your courteous attention, I offer it as a suggestion for some future meeting.

Discussion.

DR. EVELINE P. BALLENTINE, Rochester: The reader has so fully reviewed the present trend in psychiatry that little can profitably be added to what has already been said in regard to recent advances in psychiatry and neurology.

Mingled with that subconscious feeling of self sufficiency of the psychiatrist to which the reader refers, on account of the great forward movement in housing the insane, there must have been a feeling of dissatisfaction with the former views to account for the rapid and universal adoption of the new theories of Kraepelin. As a result much less stress is put upon a tangible physical basis as a cause of disease.

Leaving out diseases due to organic lesions and toxines, such as alcohol and syphilis, there is comparatively only a small group, auto-intoxications and exhaustive-infectious psychoses; much smaller than is believed by the laity and those who have not given the subject careful study. And, as the writer has said, much less stress is laid on rheumatism, lactation, masturbation, puerperal conditions and other specific etiological factors.

On the contrary great emphasis has been put on two great groups of psychogenic origin; the so called manic-depressive psychoses and the essential deteriorating psychoses or dementia præcox.

Much time has been put upon the study of the essential deteriorating psychoses, and much knowledge has been gained in regard to their development and course. The number and chronicity of these cases appall us, both from a humanistic and economical standpoint. Probably the statistics of the hospital with which the

speaker is connected, although limited, are typical of most rural communities of this state.

We have, at present, nine hundred and twenty women in our hospital, five hundred of these are classed as dementia præcox,—one-half of the population of the hospital made up of this demented class. Many of this class remain in the hospital for many years; as an example,—a patient, who is recorded number "one" on our records, has been in continuous custody for fifty-four years and probably will remain many more as she is in good physical health, for a woman of her age.

There is no sadder picture than this so-called school at the R. S. H., made up mostly of young women of the dementia præcox group, especially to one knowing these patients individually. Many of them come from superior homes, most are well educated and had apparently bright prospects but they gradually began to fall back mentally and are gradually but surely going down to dementia. Special care and re-education does considerable for them and is of economical value, but the question is forcibly impressed on the psychiatrist who has them in charge,—What is the cause of this psychosis?—why is not something being done to prevent its recurrence? The future demands advance along preventive lines.

Psycho-analysis is throwing some light on the subject. The tendency is to teach that not only the psychoneuroses, hysterias, etc., are due to some early shock,—frequently of a sexual nature,—but that similar causes together with bad habits of mental functioning are responsible for dementia-præcox cases.

It is along the line of prevention of this large class of cases that future advance must be made. As the reader has said,—both from a humanitarian and economical point it makes it imperative for us to ascertain the cause. It has prompted that great advance that has been made in the study of heredity and eugenics and the coöperation with those who are engaged in social-service work. It has led to recent legislative enactments, such as the making possible voluntary commitments; it has put the care of the insane, pending commitment, in the hands of health officers, etc.: it has prompted the great work that has been done along educational lines instituted by the State Charities Aid Association, working through their committee on mental hygiene.

In speaking of the psychogenic cause of some of the neuroses and of psycho-analysis, the reader asks, why the unexpected death of a relative, a physical injury or a fright may not serve to initiate a reaction resulting in a neurosis as well as a repugnant sexual experience. The explanation might be that the ordinary conventions of society, as it is, to-day, allows freedom in reacting to the former but leads us to submerge normal reactions to the latter. We err in our conception of the specific term used by taking too narrow a view and fail to look upon the sexual as one of the great principles of biological development which includes all family and sociological relations and when sublimated may be the basis of our higher æsthetic feelings. Also as the writer has said limited advantages in training in psychology and in philosophy as applied to the principles of psycho-analysis have prevented an unbiased investigation and acceptance of Freud's mechanisms.

THE BURDEN OF MENTAL DEFECT.*

By HERMAN G. MATZINGER, M.D.,

BUFFALO, N. Y.

THE reason for bringing this subject to your notice, is the fact that there is occasion to believe that the rank and file of the medical profession is least well informed in the matter, and is allowing its biological, economic, and sociological bearings to obscure the fact that it is essentially a medical question. Mental defect is the direct result of a permanent abnormal condition of the central nervous system, which, like other structural defects, produces definite symptoms of disordered function and is bound to be transmitted in obedience to the Mendelian law of heredity. That it, therefore, is the plain duty of the profession to undertake and sustain a sane propaganda looking not only to the amelioration, but especially to the prevention of this defect.

The greatest achievements of our honorable profession have been in the way of prevention. Individual workers have already blazed the trail toward a solution of this problem of the mentally defective. It remains only for us to recognize our responsibility in the matter and to make a determined effort to at least check the growth of this great social menace.

What is meant by mental defect or unsoundness of mind? In the narrower sense it means insanity, idiocy, and imbecility, or the grosser disturbances of the mental faculties, which are recognized as such even by the lay observer. In the broader sense it includes such nervous disorders as hysteria, epilepsy, hypochondriasis, psychasthenia, etc. Even neurasthenia, because there are always marked mental symptoms in this disorder. It is inconceivable that the normal brain could under any circumstances show such disturbances.

But we must include still more. Be it remembered that mind is not solely intellect, it includes the emotions and the will as well. In short, unsoundness of mind or mental defect means not only disturbances of reason, but ab-

* Read at the Joint Annual Meeting of the Seventh and Eighth District Branches of the Medical Society of the State of New York, at Sonyea, September 25, 1913.

normal expressions of the emotions and disorders of the will, which show themselves in anomalies of conduct and behavior and perversion of feelings.

Indeed we may go still farther and say that the occurrence of severe delirium is evidence of an unsound, unstable brain. Fever and alcohol have come to be, to the psychiatrist at least, touchstones of mental equilibrium. More and more we are coming to understand that delinquency, criminality, vagrancy, prostitution, and pauperism are very closely connected with mental defect.

It is not difficult in the light of this, to see how mental defect becomes a great burden to the nation.

The economic burden, in itself, is stupendous. Dr. Charles L. Dana, estimated that in 1904 the cost of caring for the insane and diseased and defective brains, in this country, was over $8,000,000, and that the amount is increasing at the rate of four per cent. Others have estimated the cost to be more than $100,000,000 per annum. These estimates include only idiots and the insane. The amount would be much greater if we included the cost of caring for the defective delinquents. If, to this, we add the economic loss to the nation entailed by the removal of so many from productive employment, the sum total would be appalling. As you know this is estimated on the basis of $700.00 per annum from the age of fourteen to forty-five.

But that is not all. Think of the cost in human suffering and sorrow of those in whose families the mental unsoundness occurs, to say nothing of the afflicted individual himself.

The United States Census of 1910 shows that there were 187,454 insane persons in public institutions at that time, at a cost of $32,804,450. The average cost per capita being $175.00. The economic loss was $130,000,000.

The same census shows that there were 32,830 mental defectives in public institutions. Of these 2,097 were in reformatories. No less an authority than Dr. Walter E. Fernald has estimated that only ten per cent are in suitable institutions and that 166,000 are uncared for.

The State of New York now cares for 33,000 insane in its fourteen hospitals, for which it expends over $7,000,000 annually in maintenance alone. One-sixth of all moneys appropriated by our state legislature is needed for the insane.

A carefully made estimate of the number of idiots and imbeciles in this state gives the large figure of 20,000, all of them acknowledge to belong in this class by their parents and guardians. Many parents who have such children will not admit that they are really defective, so that the actual number is still greater.

New York state now has seven institutions for defectives, in which between seven and eight thousands are cared for. This care costs the state $161.20 per capita per annum. Last year there was a waiting list of applicants for admission of over 1,100 children.

What it costs to have mentally defective persons a large, is incalculable, because they never can support themselves.

As suggested above, we have only begun to understand the importance of mental defect as a factor in the causation of crime, pauperism and other social problems.

Hereditary pauperism or pauperism of two or more generations of the same family, means mental defect. In every community there are families who have been paupers for many generations.

Dr. Fernald insists that every feeble-minded person, especially the high-grade imbecile, is a potential criminal, needing only the proper environment and opportunity for the development and expression of criminal tendencies. "The unrecognized imbecile is most dangerous in the community, and there are many crimes committed by imbeciles, to one committed by an insane person. It has been truly said that feeblemindedness is the mother of crime, pauperism, and degeneracy."

Of the inmates of penal and reformatory institutions generally, at least twenty-five per cent belong in the mentally defective class.

A recent psychological examination of the inmates of seven penal institutions for young offenders, in five different states, shows an average of forty per cent. This shows that twenty-five per cent for all is a very conservative estimate.

A surprisingly large number of immoral girls found in rescue homes and shelters are incapable of reform and selfsupport, because they are mentally defective. Their chief function in life seems to be the spreading of venereal disease, and this they do remarkably well. Some one has estimated that nine of every ten prostitutes are actually feeble-minded,—defective.

Indeed, a large proportion of the mothers of illegitimate children are found to be feeble-minded. In one county almshouse in Pennsylvania there were 105 mothers of illegitimate children, and of these 100 were feeble-minded.

The most surprising and at the same time the most encouraging result of the study of the whole group of mentally defective persons, the insane, epileptics, criminals, prostitutes, hereditary paupers, and mentally defective, is the fact that these various conditions are often merely phases or expressions of the same fundamental inferiority. This makes the problem somewhat more simple.

It has been observed that in degenerate families the particular form in which it manifests itself often varies from generation to generation, so that in one it may be pauperism, in another criminality, in still another insanity or alcoholism or epilepsy, and finally idiocy and imbecility.

It must be remembered that not all mental defect is inherited. A considerable amount is

due to congenital defect, to injuries during birth, and to the more serious diseases of infancy. But these cases do not transmit their defect, because in the first place acquired characteristics are not handed down to the decendant, and in the second place, because, as a rule, they are usually so unattractive, that they are either not sought in marriage or they are so helpless that they are under constant supervision. The hereditary cases far outnumber all the rest. Tredgold, the English authority, says, ninety per cent are hereditary.

If you wish further evidence to substantiate this statement, read that most carefully prepared study of the heredity of feeble-mindedness published by Dr. Goddard, of Vineland, called *The Kallikak Family*.

Right here let me call your attention to a significant fact, which really belongs at the end of this paper, but which will give a less pessimistic turn to your thought. It is a commonly observed natural tendency for birds of a feather to flock together. This really is only one way of expressing one of the natural laws which operate to prevent the mixture of races and species, and which, at the same time, works the very certain destruction of undesirable forms.

Natural hybridization is practically unknown among plants and animals. Men work hard to bring it about, in their endeavor to improve on nature, but the inevitable result is unfitness to survive or sterility.

The single flower which has been made to bloom double makes no seed. "The mule has neither pride of ancestry or hope of posterity."

Now, everyone, who observes at all, has seen that the criminal associates with and marries, in his own way,—the criminal. The consumptive marries, or makes of his mate, a consumptive. The simple and foolish easily and quite naturally find a mate of their kind. The drunkard marries someone who either does not mind, or also drinks, and so on.

This is Nature's way of ridding herself of the undesirable, and you can see that in the human species it quickly results in the production of non-viable children, and idiots, and so closes the chapter.

But in the past, and quite generally in this day, philanthropic effort of every kind has worked to defeat this natural process of elimination, and has encouraged and made it possible for the mentally defective to live with normal people, indeed, has not only favored and tolerated marriage with better specimens, but has forced it after accidents have happened, thus increasing instead of diminishing, the number of defectives. It is a well demonstrated fact that the feeble-minded increase twice as fast as normal people.

This brings us to a brief consideration of the important causes of mental defect.

We know, and can demonstrate, that fifty per cent of all insanity is due to alcohol and syphilis, either in the individual, himself, or his ancestors, and we know that alcoholic parents do beget epilepsy and mental defect. The children of the syphilitic are notoriously defective both physically and mentally.

There can no longer be any doubt about the fact that the occurence of defect is the direct, if not the invariable result of a tainted, poisoned, or abnormal germ plasm. The constant presence of alcohol, the poison of syphilis, or of any systemic poison, can so modify germ plasm that normal development is absolutely impossible. Prevention of the inevitable result can only be accomplished, if at all, by a long process of careful admixture of better stock until it becomes dominant. There is no such thing as eliminating the bad entirely. If not carefully watched it will surely reappear some day.

The greatest factor among non-preventable causes is war. In less than four years our civil war wiped out over 360,000 northern men, and as many southerners. In all, about 720,000 of our best stock,—the great majority of them, at least,—if health, physique, courage, and loyalty to principles of right and wrong are any criterion of good stock.

In the natural order of things these were intended to be the progenitors of the future citizen. But it was not to be so. The weaklings, physically and morally, with the feeble-minded remained at home and bred, with this result, shown by the census of 1870: a twenty-two per cent increase of the entire population, including 4,400,000 newly enfranchised negroes, and a thirty-three per cent increase of the idiotic.

In the further development and growth of our defective population, the diseased, broken, and alcoholic veteran, of course, added his get to the increment.

How can it any longer be a matter of indifference, that in our Empire State there are over 20,000 idiots and imbeciles, that there is one feeble-minded child in every 500 of our school children, that there is one insane person in our state hospitals to every 200 adults of the population.

We may take some sort of negative comfort in the fact that immigration has much to do with this state of things. It has, to this extent, that the immigrants settling here outnumber the births,—37,000 in 1911,—and that the percentage of immigrants in the general population is fourteen per cent, while the percentage of the foreign born in the hospitals for the insane is thirty. But it really makes the situation worse and complicates the problem.

The social and economic burden of the insane and the mentally defective with anti-social tendencies can be approximately estimated, but the burden of uncomplicated mental defect, though too well known by those whom it touches directly, cannot be estimated. They cause unspeakable sorrow, and are a constant menace to

the community in which they live. Especially is this true of feebleminded women, because they are almost invariably immoral.

What can we do about it? In the first place, we must look it squarely in the face and recognize that it concerns us and that we have a duty in the matter. Strip it of all sentimentality. Then convince yourself and the community which you serve, of the reality of the heredity of mental defect. No other profession or group of people can do as much as the medical profession, to educate the public in such things.

Convince yourself and the public of the truth that individuals are born, not made; that heredity cannot be changed by environment, but is an inherent characteristic of germ plasm. That you can no more change the heredity of your child, after you are married, by thought and care and environment, than you can make a sour apple tree bear sweet fruit by fertilizing, pruning, and spraying it. You may indeed materially improve the individual and increase its seeded fruit, but it will never be sweet.

Never lose sight of the fact that the individual, however low, is entitled to all the comfort and happiness he can get, but insist *that he shall not bring more of his kind into the world.*

The first and most important step in accomplishing this, is to segregate the feebleminded women during the childbearing age. Your state is spending millions for the care and cure of the degenerate, but only a pittance to prevent it. There is only one institution in this state, set aside for this purpose, and that is and has been full. There is no hope of getting anyone in for years, if the men in charge are allowed to hold those who are already in their care. In the meantime the vast majority of them, who are at large, are breeding their kind as fast as they can without let or hindrance.

We must make a concerted and strong effort to have our representatives at Albany pass enabling acts for the erection of more institutions for the mentally defective, and to enact laws which will commit them to such institutions for life, where they can become at least partially selfsupporting by their work and be happy.

"The state is avowedly the guardian of the insane and the defective. But what would you think of a guardian who constantly spent his time and money in getting his ward out of trouble, instead of keeping him from getting into trouble."

The state has wonderful agencies of power and influence in its educational department, its health department, its excise department, its conservation commission, its police department, and its board of charities. Urge at all times that it is the duty of the state to undertake this campaign of prevention, "purely as a matter of finance, as a matter of prudence, and as a matter of maintaining its resources."

The State Board of Charities and the State Charities Aid Association, especially the latter, have made a splendid start in this work, but we must give them more power by active support. So far the work has been principally directed to the prevention of insanity. It must be enlarged so that it will cover the remote causes which not only produce insanity but all mental defect.

The more recently organized National Committee for Mental Hygiene is also doing most admirable work in this cause. It had its inception a few years ago in the mind of a man who, recovering from an attack of insanity, decided to give his best thought and strength to the prevention of insanity. Grouped about him is a splendid body of able and representative men, physicians and men in other walks of life, who need our support and our help in their work of educating the public.

Our state legislature followed seven other states in passing a sterilization act in 1912, allowing and directing the sterilization of certain inmates of state hospitals for the insane, state prisons, reformatories, and charitable institutions, also rapists and confirmed criminals in penal institutions. But the commission that was empowered to enforce the act has so far done nothing that we know of.

There is of course much difficulty in enforcing such an act, and there is good reason for doubting that much good can come from enforcing it.

But it shows that something, at least, can be done looking toward the prevention of the increase of defect.

The best and ablest workers in this field, all believe that the best way to meet the existing condition, is by enforced and permanent segregation of all classes of mental defect, beginning with the women of childbearing age.

These men look to us for intelligent appreciation and support, and it is not only our privilege, but our solemn duty, as conservers of health and happiness, as well as loyal citizens, who have the welfare of their people at heart, to work for this cause without ceasing.

THE RELATION OF THE GENERAL PRACTITIONER TO PUBLIC HEALTH.*

By ANDREW MACFARLANE, M.D.,

ALBANY, N. Y.

IN these days of complex civilization, all the relationships of man with man have become more complicated and involved. When man lives isolated, he is responsible to himself, alone, and can do practically anything he wishes. If he has his dwelling in a sparse community, he has to consider the rights of his neighbors to only a limited extent. When he resides in a

* Read before the Medical Society of the County of Essex, December 17, 1913.

congested area, as in a large city, he is no longer a free agent, but must bend and accommodate himself to those about him, considering their feelings and rights.

Freedom in a crowded area means the giving up of personal freedom to a very large extent for communal freedom. This truth is even more applicable to the domain of medical science. Medicine, to-day, is no longer a personal matter, but is becoming every day more and more a question of public weal. Wherever and whenever disease assumes the possibility of a public menace, then it immediately becomes a subject of public concern. Individual freedom and personal convenience are matters of no importance. This, at first sight, seems in contradiction to that part of our Hippocratic oath wherein we promise to keep inviolate and sacred all knowledge of our patients' illness.

In the days of Hippocrates, however, medicine was purely personal. To-day, this viewpoint must be seriously modified, or at least interpreted in the light of present-day knowledge. One of the permissible exceptions to privileged confidential communications is that in which we seek to prevent the commission of a crime. Although crime might truthfully in that case be held to be the ordinary criminal act, still I believe it is no straining at definitions to give it a broader interpretation and a deeper significance. Is it not a crime to knowingly allow tubercle bacilli to be spread to the four winds, to infect with death those poor victims who have not the vigor to resist? Is it not a crime to permit children to spread scarlet fever, diphtheria, and other highly contagious diseases among their innocent and unsuspecting schoolmates and friends? Is it not worse than the ordinary crime for the profligate to infect the innocent and virtuous with disease which may bring in its track conditions worse than death? It would seem as if this admitted of no argument. Death due to a bullet, stab, or poison, is no different in its result to the poor victim than death due to the virus of tuberculosis or any other communicable disease. It is only a question of intent, and intent in all legal procedures determines the extent and character of the punishment. If the physician, to-day, does not realize this danger, then he had better begin to take thought and ponder deeply over his responsibility to his fellowman. If the healer or other quack refuses to recognize his communal obligation, then it is the bounden duty of the State to make him or her realize that such an actual crime cannot be excused by any fantastic belief or pseudo-religious dogma. There is, however, a condition about communicable diseases which I believe is frequently largely responsible for the neglect of the physician and the opposition of the family to the observance of a strict quarantine; i. e., the question of expense. If a child is taken ill in a mechanic's family with a highly contagious disease, as scarlet fever, diphtheria, etc., the establishment of an efficient quarantine is a matter of considerable expense as well as anxiety. In addition to the outlay entailed primarily by the disease there are the other charges due to the separation of the rest of the family from the home; no small matter in a poor man's family where the danger is especially great from the natural congestion in which the poor have to live. The thought arises,—who is benefitted by a strict quarantine? The immediate family of the patient primarily; but in a broader sense, the community. I believe it is axiomatic, except in the case of dependents, that he should pay who receives the benefit, unless he wishes to be regarded as a pauper. The time is almost at hand when the community must more and more assume its responsibility, if it demands efficient protection, either by providing suitable hospitals where these cases can be cared for at no charge to the family, or by directly assisting in the expense of this care at home.

This academic question does not absolve the physician from his manifest responsibility and duty at the present time. He must ever keep in mind, whether he wishes or not, that professionally, every physician has a dual responsibility, one which considers the private patient, the other which includes the public weal. He cannot free himself from this latter responsibility, and if he neglects the voice of the community, calling upon him for protection and appropriate action, he will sooner or later be regarded as an enemy of his kind and treated accordingly. When we enter upon the practice of medicine, we assume this semi-public responsibility which each year is becoming greater. It may develop into a duty well and easily done or a burden which will weigh us down.

Science has been truthfully defined as knowledge based upon the greatest number of facts and the logical deductions therefrom. To-day, we know more than our fathers, simply because we are acquainted with more facts. Therefore, the accumulation of facts, although apparently dull and prosaic, and too often regarded as of no consequence, is in very truth the fountain and source of wisdom. To-day, that country is most advanced in medical science whose medical statistics are most complete and comprehensive. That nation, on the other hand, where no attention is paid to vital statistics is still in a state of medical barbarism. What progressive action and effective work can be accomplished, unless we know what we are trying to do, and have clearly in mind the end we are seeking to attain? Our statistics are worse than useless if they are misleading. If a death from typhoid fever is attributed to malaria, and one from tuberculosis, to bronchitis, or La Grippe, then, indeed, we are in a sorry plight without any true comprehension of our real state and actual needs. Upon each individual physician rests the responsibility for complete and accurate reports of deaths, births, and contagious diseases. No

work of ours will be more indicative of our true interest in the progress of medical science than the accuracy and completeness of these reports.

The physician of to-day must be the educator of the community in which he lives. He must combat the follies of mankind and keep in the public mind the tremendous saving of life and treasure directly due to modern scientific medicine. He must tell the story of the Panama Canal whose successful completion, to-day, is due to medicine rather than to engineering skill. The French were and are, to-day, probably the greatest constructive engineers in the world, and they had at their head the successful builder of the Suez Canal, DeLesseps, but they failed, because they could not withstand the frightful onslaught of the pernicious malarial and yellow fevers, and they died actually by the thousands and tens of thousands. To-day, the Canal Zone is a health resort with a mortality less than that of cities of the United States. A few years ago, about this time, the whole South would be in a state of frenzy and terror on account of the possible entrance of yellow fever, from Cuba. Many lives would be sacrificed and millions of dollars lost. For one hundred seventy-five years Cuba had been the hot-bed of yellow fever. To-day, the disease is unknown. Is that chance? As the result of lives of physicians nobly sacrificed, we know that the transmission of yellow fever and malaria is by the mosquito, and the problem is at once solved.

To-day, a part of the American army is encamped on the Mexican border. Sad experience tells us that camp typhoid is much more fatal to our soldiers than bullets. In the Spanish-American War, for every soldier, who perished in battle, more than ten contracted typhoid and died. We are absolutely sure that not a single soldier of that army, on the border, will contract typhoid. I need only mention cholera which caused 7416 deaths in Hamburg, so recently as 1892. It was, for years, a constant menace to New York city. Small-pox, which Macauley called the most terrible of all the ministers of death, and which, in 1885, caused the deaths of 3614 inhabitants of our neighboring city of Montreal, has become a medical curiosity and it takes an expert to recognize it.

Marvelous as has been this progress in medical science, we cannot rest on our laurels. The real fight against disease has just begun. Typhoid fever, an easily preventable disease, claims each year 35,000 unnecessary victims, and incapacitates half a million more for a period of at least three months. With our boasted progress, our mortality in typhoid is seven times that of Germany and ten times that of Switzerland, proof that municipally we are that much less clean. Frightful as is our record in typhoid, that of tuberculosis is still worse. Each year, more than 150,000 of our people die from the "White Plague." In this state, last year, 15,969 people died from tuberculosis, an economic loss of $60,000,000. The combatting of these diseases is much more an educational, than a medical question, and much more economic, than professional. The people must be taught that disease means the breaking of some great law; that it is due to ignorance and, therefore, preventable by intelligence; that it is an economic waste on account of the direct loss of money and human efficiency which follow. In days, not so long ago, disease was supposed to be the punishment of the Almighty and the evidence of His personal wrath. It is a punishment, but not due to wrath. It is a punishment because we have broken the inexorable laws of the universe and must suffer the consequences.

If a community will drink diluted sewage, it must expect to have typhoid, and the only regret is that it cannot be limited to those who are responsible for the pollution. If a community will permit the filthy habit of expectoration, it must expect numerous cases of tuberculosis. Unfortunately the innocent suffer with the guilty. Time does not permit me to more than mention Diphtheria, a disease only recently the nightmare of both the physician and the parent, now curable in almost ninety-seven per cent of the cases if recognized early and treated vigorously; Measles, which had, during the past year, 1050 victims in this state; Scarlet Fever, 789 deaths; and Whooping Cough 683,—a total death-toll of 2522. The day is past when medicine should be shrouded in mystery and the laity kept in ignorance. The people are eagerly alert to know about all advances in medicine, and the magazines and Sunday newspapers are keen to satisfy this desire. There is no period depicted in fact or fiction more wonderful than the progress of medicine in the last three decades, and each one of us should take every opportunity of making that wonderful record known to every intelligent person in our respective communities.

SOME OBSERVATIONS IN THE SURGICAL TREATMENT OF CHOLECYSTITIS.*

By MARK O'MEARA, M.D.,

KINGSTON, N. Y.

THE classification of gall-bladder disease into the acute and chronic types is usually based upon the period of time that the patient has had the disease. It seems to me that in this connection, it would be well to consider

* Read at the Annual Meeting of the Third District Branch of the Medical Society of the State of New York, at Troy, October 1, 1912.

in many cases, more carefully the actual progress which the disease has made without reference to its duration, and the secondary changes, especially those of the pancreas which may occur, and so frequently do occur, as a result of cholecystitis.

Latterly one or two writers have attempted to make a further classification based upon the presence or absence of gall stones. It seems to me that this classification does not possess any very great practical value except insofar as it may guide one somewhat in giving a prognosis. I do not know of any symptom or symptoms by which one can tell, with any degree of accuracy, whether, in any given case, gall stones are present or absent. It is certain that very little reliance can be placed upon jaundice as a symptom in this connection, for, as has been so well said by William Mayo, "Jaundice has nothing to do with gall stones in the gall bladder and it is a symptom not to be expected so long as the calculi remain in their natural habitat."

It is a matter of common experience to note that a patient may have just as much pain; it may be just as severe in type and just as paroxysmal in character in those cases in which gall stones are absent as the cases in which they are present. In this connection, I would like to cite briefly a case which was referred to me some time ago for operation. This patient was a clergyman, forty years of age, who had complained for a period of four or five years of so-called stomach trouble. For a period of two months previous to my seeing him, he had attacks of epigastric pain of a most severe type, coming on at intervals of from ten days to two weeks. The physical examination with the other symptoms, seemed to point quite conclusively to cholecystitis and that diagnosis was made. I was somewhat surprised upon exposing the gall bladder, in this case, to find an apparently normal gall bladder and appendages so far as inspection and palpation were concerned. Owing to the apparently normal condition of the gall bladder, I concluded that there had been a mistake in diagnosis, and that we had to deal with an ulcer of the duodenum or pylorus. The examination of those organs, however, showed them to be perfectly normal. The gall bladder was then aspirated with a hypodermic syringe and I was able to obtain a few drops of a very thick, black, viscid bile. The finding of this bile of course established the diagnosis. Simple rubber tube was inserted, which, by the way, I think forms the most efficient kind of drainage either for the gall bladder or anywhere else where drainage is indicated. This patient went on to a complete and full recovery.

I cite this case to emphasize the point that if the symptoms point to cholecystitis, no matter how normal in appearance the gall bladder may be, we cannot exclude cholecystitis without making an examination of the bile directly from the gall bladder.

The ordinary case of cholecystitis does not present any very great difficulties as to diagnosis, but there are a good many cases in which the diagnosis is certainly a matter of considerable difficulty. The chief conditions from which we are to differentiate are ulcer of the duodenum and of the pyloris, and appendicitis. There are one or two others, but these I think are the chief ones. There is a condition, however, which I have not seen mentioned in any of the text books,—a condition which, in my opinion, should always be kept in mind in making a differential diagnosis, and that is right-sided perinephritic abscess.

In this connection, I would like to cite a case referred to me a few months ago for operation, the clinical symptoms of which I think are of sufficient interest to justify my briefly reporting it. This patient was a young woman, thirty-five years of age, the wife of a practicing physician, and who had been, herself, a trained nurse of many years' experience. Possessing these qualifications, she deemed herself competent to diagnose her own condition which she proceeded to do, diagnosing it first, as appendicitis, later as typhoid fever, and then I was called, and I could not diagnose it at all. I advised her removal to the Sanitarium where a more thorough examination could be made. She had been running an afternoon temperature for a period of two weeks, of 101½. Upon her admission to the Sanitarium, the physical examination showed a good deal of epigastric tenderness which seemed to be more especially localized over the region of the gall bladder. The point of maximum tenderness, however, was not directly over the gall bladder, but about an inch to the right. A blood examination made at this time was negative except for a slight leukocytosis. An examination of the urine was absolutely negative, both microscopically and chemically. I frankly admitted my inability to make an accurate diagnosis and a surgeon of wide experience from a neighboring city was called in consultation. He at once diagnosed the condition as one of cholecystitis. The following day I operated and found a perfectly normal gall bladder and appendages, but evacuated an abscess containing about four ounces of pus which came from around the right kidney,—a true perinephritic abscess. Ordinary rubber-tube drainage was inserted and this patient made a very complete and rapid recovery.

I cite this case to emphasize the fact that this condition of right-sided perinephritic abscess is one which ought to be always kept in mind, and one which may at times present considerable difficulty even to men of wide

experience in the matter of a differential diagnosis.

It seems to me that in many cases cholecystitis ought to be diagnosed and operated much earlier. It is a matter of common experience to note the great rapidity with which some of these cases go on to the development of very dangerous complications, if unoperated, and this is, of course, especially true of those cases in which empyema of the gall bladder is present.

In this connection, I would like to report a case which was referred to me a short time ago for operation. This patient was a man sixty-five years of age who had been ill only four days when I saw him. Previous to that time, no history of symptoms referable to the gall bladder could be obtained. His temperature, when taken to the hospital, was 102 rectal. A physical examination made at this time showed a good deal of right-sided abdominal tenderness, but it did not seem to be especially localized over the gall bladder. The physical examination was otherwise negative; no mass or tumor of any kind could be palpated. As the question of typhoid fever had been raised, in this case, by the attending physician, the patient was kept under observation for a period of twenty-four hours. At the end of this time, a rather well defined mass could be felt at the border of the liver. The finding of this tumor in connection with other symptoms, made the diagnosis of empyema of the gall bladder a reasonably certain one, and he was immediately operated. I found in this case a gall bladder markedly distended with pus and containing a large gall stone.

Here is a case in which I believe if it had been allowed to go on without operation for another forty-eight hours, we would have had perforation of the gall bladder, with its attendant train of very dangerous complications. And so I emphasize the point that many cases ought to be diagnosed and operated earlier, first to avoid the immediately dangerous complications which may result from delay; second, to relieve the patient of very distressing symptoms which are so invariably associated with this condition, and third, to avoid secondary involvement of the pancreas,—a condition which we know so frequently follows cholecystitis.

We know now that one good means for the prevention of this type of pancreatitis is drainage of the gall bladder, and we know further, that when pancreatitis exists as a secondary result of cholecystitis, that one effectual and, so far as I know, the only effectual cure for that condition is drainage of the gall bladder.

LICHEN IMPLANUS.

By WILLIAM B. CUNNINGHAM, M.D.,
NEW YORK CITY.

ONE of the prettiest of dermatological pictures is a perfectly typical lichen planus. The discrete, flat, glistening, angular, or rounded papules, with depressed center and violaceous color, favoring certain localities, such as the back of the neck, the wrists, the inner surfaces of the knees, the penis, the ankles, and dorsa of the feet, accompanied by considerable itching, possess distinct and positive diagnostic qualities that are unmistakable. But another thing entirely is the lichen planus that has been scratched out of all semblance of its original beauty, and has been metamorphosed into a hideous, rough, scaling, or crusted simulacrum of "eczema". At this stage it is rarely recognized except by the specialist. It is usually treated on the routine lines laid down for eczema, and the patient circulates from one physician to another, with steadily increasing discomfort. At the beginning it was a lichen planus. One oblique glance across the affected site should have discovered the minute, burnished, sparkling specks with the more minute central depressions, so characteristic of this unique infection, for, in truth, you can liken naught to lichen. Failure to recognize it emphasizes the absence of a careful examination. The violaceous, punctate sheen of lichen planus is as significant to the dermatologist as the glitter of the auriferous quartz to the trained mineralogist. But this stage passed, and the patient's busy fingers having responded vigorously to the call of the pruritus, the tell-tale points are smothered in the infiltrated dermatitis still familiarly known as "eczema".

In a large number of cases, failure to diagnose it, even in this stage, must be ascribed to want of thoroughness in the examination; for it is seldom, indeed, that all the luminous points are obliterated especially at the periphery. The cursory glance, the snap diagnosis on gross appearances, the omission of a careful search for elementary lesions, are severally and conjointly responsible for the incorrect decision. Out on the edge of the patch, perhaps quite a little removed, will be found here and there a demonstrative papule or two, the skirmishers, as it were, of the advancing line of lichen. One slant at these (the vernacular perfectly expressing the oblique direction of our gaze) should suffice to clear the case of all obscurity. One caution must be given at this point to obviate a possible source of error. There is a condition of the skin called lichenification. It consists of a marking-off of the surface into little rectangular figures, caused by an accentuation of the normal striæ. It is found in diseases that thicken the skin, especially about the joints. It is distinguished from real lichen by the fact that all the little squares fit accurately together, after the manner of a mosaic, whereas, in the contrasting condition, the component parts

are individual, discreet, and have no such intimate correlation. It is a meaningless, misguiding, mischievous term, whose whole effect has been to make confusion worse confounded. It could be very satisfactorily discarded, in the interest of clarity and its purpose perfectly effected by the substitution of "striation" or "hyperstriation".

As the title of this paper indicates our main business is not with lichen planus but with those variations, aggravations, aberrations which ring the changes on the original disease to such a degree that its identity is extremely difficult to trace. We have spoken of the obscuration caused by complicating dermatitis. But there are other and even more confusing manifestations developed by the departure from type in the primordial lesions. Lichen hypertrophicus is more than a chronic, thickened lichen, such as we have been describing. The papules are large, oval or circular, conical, instead of flat, and tend to coalesce into patches of variable size. The dominant hue is purple. The favorite site is the lower extremities. Slight scaling may further accentuate its dissimilarity to lichen planus. It is a rough, hard, dense plaque bearing some resemblance to psoriasis and some to chronic eczema. It is itchy, the scaling is scanty, the hue is purplish, it is limited to the lower limbs; all these considerations distinguish it from psoriasis. The absence of vesiculation, its sharp limitation, its persistence in the one spot practically unchanged, for months or even years, and the peculiar color heretofore described; these considerations serve to distinguish it from "eczema".

Lichen verrucosus, as its name would indicate, is a warty aggravation of the preceding condition. The determining pathological factor is extreme papillary hypertrophy. The papules here are not flat, but acuminate or conical, with central, horny projections. They convey the sensation of a nutmeg grater. They coalesce into patches varying from one-half an inch to three inches in diameter. Color: undeniable or suggested purple.

Lichen atrophicus is a more erratic, and scarcely recognizable member of the same family. It is the direct antipode of lichen verrucosus. The two cases, I have seen, were apparently typical examples of morphea, oval patches, ivory-white, in a narrow frame of lilac. In one instance they were about the neck and chest, in the other, on the back of the hands and feet. Preëminent dermatologists unhesitatingly pronounced the first case one of morphea. Within three or four days a number of horny plugs, resembling broken hairs, appeared upon the lesions and overset the original diagnosis. This was characteristic of atrophic lichen planus, although no confirmatory papules were found. Before the appearance of the horny plugs it was impossible to distinguish between the two conditions, the weight of opinion inclining in the wrong direction.

Lichen annularis is simply an eccentric arrangement of lichen papules in a concentric form. It is not particularly rare but it is particularly apt to mislead the unwary. Search for the component papules, and if unsuccessful carry your quest further afield. You will probably find them somewhere in the neighborhood. This will save you from making a diagnosis of tinea circinata.

Lichen ruber moniliformis, linear lichen planus and lichen en ruban are terms applied to the appearance of the papules in lines or bands, running parallel to the axis of the limb. The cases are few and their connection with lichen has been disputed but the presence of typical lesions in the environs has seemed to settle their status.

The other alleged forms of lichen are mere misnomers. For instance, lichen simplex is a follicular hyperemia. Lichen urticatus is urticaria in children running on to inflammatory papules, and if persistent, eventuating in prurigo mitis which is another story. Lichen tropicus is nothing but miliaria popularly known as prickly heat. Lichen ruber is pityriasis rubra pilaris. Lichen scrofulosorum, as the name implies, occurs only in scrofulous subjects. It would appear to be an admixture of lichen and acne. It is, however, not a lichen at all, some of the papules bearing a superficial resemblance to those of lichen. Lichen pilaris or lichen spinulosus is an archaic term for keratosis pilaris. On the penis lichen is observed in its most characteristic form.

It is a favorite site for the little violet rectangles that establish the diagnosis. Other mucous membranes are frequently attacked, notably the mouth. Therein it appears as little white spots resembling those made by the nitrate of silver stick. On the osseous palate there may be square cut lesions slightly raised and of the same color as the surrounding tissues. On, and in the vulva, the same white dots and streaks as in the mouth suggest the diagnosis.

From the foregoing imperfect description, it may be gathered that lichen while an infrequent disease, is frequently atypical in its manifestations; that the qualifying adjective "planus" is utterly inadmissible in the aberrant forms; for the reason that the lesions are neither "plane" nor "plain"; that another adjective to cover these distortions as a class would be a desideratum, the subdivisions being variously entitled as at present; that the word "implanus" meaning uneven, and by a slight wresting of its etymology "not plain" could be reasonably employed to imply those unusual cases that are rugged to the eye and touch, or present abnormalities in tint, site, or configuration. The etiology of lichen is undetermined. Any deterioration of the general health is supposed to be provocative. Nervous strain, worry, fear, are especially culpable, in the opinion of many authorities. It is observed that exacerbations occur at periods of marked depression or exhaustion. This would appear to be a bald *petitio principii,* for it is rational to assume that any disease will have a greater tendency to develop or gather headway during such periods. All that is admissible from these cir-

cumstances is that the undiscovered cause, has greater freedom of action.

You will recall the frantic efforts of Mr. Dick, in *David Copperfield,* to keep King Charles the First out of his famous Memorial. It is almost as difficult for the medical writer to keep "intestinal putrefaction" out of his monograph. King Charles the First came tumbling into the Memorial in a most unexpected and disconcerting manner. Strive as we may, resolve as we may, "intestinal putrefaction", *ardore scribendi,* will shoot into the manuscript unbidden, unwelcome, and abhorred. Resistance being futile, we might as well accept the situation, and dispose of the pest as speedily as possible. Being in the minds of some, the primal cause of all the causes of disease, it probably exerts an action in the production of lichen. Weakening resistance by the steady infusion of toxins into the circulation, it favors the operation of the specific exciting cause. Whether or not it also generates that exciting cause is at present beyond our ken. Treatment along the indicated lines may be of avail.

The pathology of lichen is inflamatory. The inflammation being about the sweat ducts in the corium. There is thickening of the rete and enlargement of the papillæ. The shining aspect of the papules is due to the stretching of the epidermis over the sub-epidermic infiltration. The craggy and verrucous varieties are due to an accentuation of the papillary hypertrophy.

On the head of treatment there is some divergence of opinion. The advocates of the autotoxic theory (here comes King Charles the First again!) have clear sailing even if they never get anywhere. I am a little inclined to favor it, myself.

Sabouraud, in a burst of nihilistic despair says, "Nothing is curative." Others are hopeful of the effects of tonics, supported by anti-pruritics. Bulkley advocates the administration of five to ten grains of chlorate of potassium, in water, after meals, followed in half an hour by two to five drops of strong nitric acid. I have seen very good results from this method of treatment, and can recommend it in the pure planus cases. It may be associated with the use of the lotion of calamine and zinc to control the pruritus. When the cases are rebellious (as they are apt to be) something further must be done. Arsenic has proven effective in a good many cases; but it is a little uncertain, and may be disappointing. The best form in which to administer it is the Asiatic pill, containing one-tenth of a grain of arsenious acid and one grain of black pepper. One of these may be given three times a day after meals. If physiological effects are noted the arsenic should be reduced, not discontinued. If no impression is made upon the disease, or if progress ceases after a reasonable time, we may have recourse to mercury internally and externally. The bichloride of mercury in the average dose of one-sixteenth of a grain, three times a day, in conjunction with Unna's ointment, is without doubt, the most effective form of treatment within our present knowledge. Unna's ointment is as follows: Phenol, twenty grains; bichloride of mercury, two grains, to the ounce of zinc-oxide ointment. In grisly, old patches one or both active ingredients may be increased. In the verrucous form, salicylic acid plaster in twenty per cent strength will frequently reduce the lesions to a very marked degree.

Once established, lichen is possessed of a most obdurate vitality. It is true that many cases yield to vigorous therapeutic assaults. It is equally true that many more resist our most determined and sustained endeavors. Relapses are provokingly frequent. Despite the extraordinary statement of Sabouraud, that there are no "recurrences", such phenomena are within the experience of every other dermatologist. The importance of lichen, which is not a very common disease, lies in the pruritus which is always troublesome, and sometimes malignant; also in the disfigurement, which, especially to a woman, is decidedly objectionable on the exposed surfaces of the neck, hands, and wrists; and lastly, and most particularly, in the aggravation of the mental depression produced by the persistence of the lesions. Few lichen patients are physically fit. Few are mentally resilient. Morbid spirits writhe over trifles. Such are the victims of lichen. On such the persistence of the spangled papules or the corrugated patches, with, or lacking marked pruritus, have a most pernicious influence.

The *argumentum ad hominem* will furnish a further reason for carefully considering this lichen planus and implanus. For, if the physician fail to get the proper angle on it, he will not recognize it. If he does not recognize it, he will fail to cure it, or even relieve it; thus he will eventually lose his patient and acquire a great deal of undesirable notoriety.

THE PREVENTION OF TUBERCULOSIS BY THE MEDICAL INSPECTION OF SCHOOLS.*

By MARY E. LAPHAM, M.D.,

HIGHLANDS, N. C.

IN order to prevent the spread of tuberculosis among our school children our medical inspectors of schools will protect them from exposure to infection by tubercle bacilli; will maintain their resistance by all hygienic measures available; and will put the children below par into out-door schools or even under a tuberculosis regime.

So far, we have mostly confined our work to pupils in evident need. Is it possible that

* Read at the International Congress of Hygiene, Buffalo, N. Y., 1913.

apparently well children can be equally in need? Are we taking it too much for granted that good health is a sufficient guarantee that tubercule bacilli are not causing tuberculosis? Have we any proofs that good health and bad lungs cannot co-exist indefinitely together? On the contrary, we learn daily that tuberculosis of the lungs is not at all incompatible with good working capacity or general well being. If it were, many deaths would be averted which are daily being prepared by tubercle bacilli behind the shelter of good health. The most dangerous cases of tuberculosis are these well cases, which, like walking typhoid, give no sign and pursue their development unmolested. A well child must be well, we say, and we laugh at the idea of an examination, or even refuse it. Unfortunately, it is equally true to say that a well child is not always well, because it may have tuberculosis.

Our ability to cure tuberculosis is somewhat proportional to the length of time it has existed and the amount of damage done, so that delay in detecting the beginnings of tuberculosis may be as responsible for death as the presence of tubercle bacilli. An infection by tubercle bacilli does not always cause tuberculosis; in the majority of cases it does not; but if it should, then the sooner we find it out the better. Only too often there is nothing to suggest this beginning, —nothing to attract our attention, and the process is allowed to extend until it can no longer be concealed,—and then it is often too late.

By the time our children reach maturity, all of them, practically, have been exposed to tubercle bacilli and infected by them. This universal infection of our children argues its persistent repetition, and there is logically no reason why this should not continue throughout life. How are we to know when danger develops? Is there any way to detect the beginnings of tuberculosis?—or must we wait until sufficient damage has been done to attract our attention? There is but one way to be absolutely on the safe side, and that is to examine the children regularly at stated intervals. This is a colossal undertaking, and one that seems very impracticable. It is too much work to examine ninety-and-nine children to find the one in danger, and the drugery of it, and the lack of stimulus when all of the cases except one are negative, makes the proposal very unattractive.

Physicians are not greatly pleased with finding nothing, and possibly do not sympathize enough with the advantages of negative findings to the patient, for, if the contrary were to be proven to any degree, there would be much more enthusiasm for the work.

The satisfaction of knowing that their pupils are safe should be as great for our medical school inspectors as for the army and navy medical officers over the good health of their men; and our medical inspectors will feel this when they are made equally responsible for the health of their pupils. A failure to detect a case of early tuberculosis will be sifted out at the next examination, and thus the accuracy of the work be constantly tested.

Consider the difference for the child between this prompt detection and the neglected child with an unrestrained development of a tuberculous process. The child is apparently perfectly well, and for years may betray nothing, and then, possibly all at once, tuberculosis is discovered.

I have recently had under my care four young women from seventeen to twenty-two years of age. All were comparatively well until the moment of disclosure, and, nevertheless, all of them are probably beyond help. One case is especially typical; she was perfectly well until one night she "caught cold" going home after dancing, and she has been in bed ever since, with little hope of recovery.

I have also eight men who were working right up to the time when they dropped. One is a lawyer, troubled with periodical "bilious attacks," always relieved by calomel. He was accustomed to feeling badly about once a month, and a few grains of calomel would make him feel all right. He was working with unusual success and vigor, and took his calomel for his accustomed biliousness, but this time the calomel failed to restore his well being, and as he kept on feeling badly he went to a physician, and tuberculosis was discovered. Both lungs were badly involved, and yet, up to the very last, the general health and working capacity were good. Another man was a florist, and very active in his work. His father died of some sort of heart trouble, so when his own heart began palpitating and troubling him he went to a doctor and was greatly surprised to be told that his was an advanced case of tuberculosis. Another was also a lawyer who had a bad attack of indigestion, and went to a doctor for a tonic. This man was examined and advised to go to a sanitorium at once, and in spite of his having both lungs badly involved he cannot see why he should stay in bed, and insists that he feels as well as he ever did in his life. Another was a travelling man who thought he had malaria. When he first came to the camp he insisted that he must walk and take exercise or he would be sick. He had no cough or sputum or temperature, and simply could not be made to believe that there was any reason for taking care of himself. He is perfectly certain that he will go back on the road in a short time. If this man could see his lungs he would sing another tune.

None of these men can understand why recovery must take so long a time, and will be so difficult. They all say, "But Doctor, I have only been sick such a little while." We know better. We know that for years,—possibly since earliest childhood,—this tuberculosis process

was extending through the lungs, and that the change from the harmless presence of tubercle bacilli to the dangerous disease of tuberculosis must have taken place so insidiously that it was never suspected. During all these years, each day brought the possibility of detection and consequent recovery, but all these opportunities were neglected.

By periodical examination of our pupils we might not only save the lives of the children, but also that of many an adult which would otherwise for years be at stake. When the records of these examinations are kept, it will be instructive to trace the number of children's lives saved by timely discovery, and the effect that these recoveries will have in reducing the future death rate of adults.

Since all of our children are infected by the time they reach maturity, it is evident that primary infection of the adult is impossible; in all probability the tuberculosis of adults goes back to infancy,—even to before birth, and is simply a delayed manifestation of a process that has developed, because it was not discovered and arrested. If we could find and arrest all the unsuspected, concealed cases of tuberculosis among our school children, it might cause a marked reduction of the coming crop of consumptives.

Why should not these examinations be made by any family physician, and so keep the work in the profession? Because the medical inspectors cannot be responsible unless they do this work. To avoid pauperizing the people, a fee can be charged proportional to the ability to pay. By concentrating the work in the hands of the medical inspectors a rare degree of diagnostic skill will be developed, which will be of great value to the profession. If a bureau of vital statistics is established, and all cases of tuberculosis reported, the data accumulated in our schools will be of great value when taken in connection with the data of later years. We use the term "tuberculously disposed" or we speak of a child as having a "predisposition to tuberculosis," or the French word, *tuberculizable*, meaning that we cannot say that the child has tuberculosis, but that it is a suspicious case.

By inferences from our records we may be able to show that these "pre-tuberculous" stages are cases of difficult diagnosis, too hard for us to define with accuracy, but which our improved ability enables us to recognize definitely as the early beginnings of the disease. There are cases which respond to tuberculin just as the undoubted cases of tuberculosis may do, and we find tubercle bacilli in the blood of the child, so that there is no doubt of the infection. Because the child seems to be in good health, and we can find nothing definite by examining the lungs, and the X-Ray does not show anything positive, we find it extraordinarily difficult to decide whether the tubercle bacilli have begun to cause tuberculosis or not, and yet, this is the very point that is so important for the future of the child. It is a serious thing to say that a child has tuberculosis, and it may be far more serious to say that it has not.

A CASE OF SCIATICA, TREATED WITH AN AUTOGENOUS VACCINE.

By HORACE GREELEY, M.D.,

BROOKLYN, N. Y.

ALTHOUGH it is practically impossible to investigate bacteriologically the sheath of affected nerve in cases of sciatica, yet, if others are similar to the one about to be detailed, a strong presumption of the identity of the offending micro-organism may be formed.

The patient, "J. W." aged forty-eight, a clothing-cutter by occupation, became the subject of a gradually developing attack of left-side sciatica (with which he had had no experience as far back as five years), which was severe enough to lame, and on some days, to keep him from work. He was treated with eliminants (salines) and fats (olive oil) added to diet for some six weeks, and with counter irritation, locally, but with the exception of a day or so of amelioration, occasionally, the pain hung on with finally an exacerbation that sent him to bed. Recognizing the disease's similarity to the rheumatic affections, bacteriological methods were determined on and a blood culture made, but no organism was discovered. Although the patient said that he had not suffered from sore throat his fauces were dark purple with congestion, and a scraping disclosed, microscopically, masses of the long-chained streptococcus. A specimen of urine, aseptically taken, gave a similar organism. I made a vaccine from the throat coccus, and at once gave the patient a dose of 100 million, killed by one hour at 60 C. I gave this with some trepidation, lest the attack be increased in severity by the addition to the blood of a greater quantity of the possibly specific toxin. However, the patient developed no reaction of any kind (not even at puncture). His temperature continued normal or a little below, and at the end of a week I doubled the dose. This increased the pain, which had remained about constant, and developed 0.5° F. temperature elevation which disappeared within twenty-four hours. Three days later he was up and about, greatly improved, and at the end of the week came to my office for the third dose, 400 million. This reacted about as the preceding, but when he returned again, seven days later, all pain had disappeared, and a final, precautionary dose, of double the last was given without any following reaction, and the patient has been without the least symptom of the malady for the past five months.

The most interesting feature of this case to me, as a bacteriologist, was the observed changes in the faucial mucosa, coincident with the ad-

vancements of the immunization process. I shall detail it in the following record of faucial smear examinations:

Relative Proportion of Streptococci and of Polymorphonuclear Leukocytes Compared to Cells Removed.

Date	Cells	Stereptococci	Polymorphonuclears
June 28 (1st injection)	1	80-120, in 2-4 chains	0-1
July 5	1	60-80, in 4-6 chains	2-3
July 12	1	15-20, in 5-10 groups *Some with capsules.*	4-6
July 19	1	2-3, in singles and doubles *All with capsules.*	5-6

PUBLICITY IN THE LAY PRESS BY MEMBERS OF THE SOCIETY.*

By FREDERIC E. SONDERN, M.D.*

YOUR Board of Censors has observed with regret the rapidly increasing number of publications in the lay press concerning the professional activities of many prominent members of this Society. As that Board is elected by you for the purpose of taking action when violations of the principles of medical ethics occur, it appointed a committee to investigate the matter and, as the result of that inquiry, adopted the following Resolution for transmission to the Comitia Minora, which was accepted by that body, namely: "That an official communication be presented to the Society by the Comitia Minora, calling attention to the fact that these articles are appearing with increasing frequency; that no competent evidence could be obtained to prove that these articles are not, at least in part, inspired by the member described, and that it is making the task of the Board of Censors to enforce the code against deliberate advertising an exceedingly difficult and practically impossible one."

It has been found that the articles appear in the daily newspapers, particularly in the Sunday editions, in the weekly illustrated papers and in the monthly magazines. Some are written by the physician, himself, and others by a lay author whose name is mentioned; but, in the majority of instances, it is difficult to decide if the article is written by the physician or by someone else. Some have no illustrations, the majority have the physician's picture, and some are profusely illustrated, showing the physician at work in the office, laboratory, clinic, or hospital.

Examination of a large number of these publications shows that they can be divided into several groups.

First. Those designed for the publicity of an institution, calling attention to the achievements therein and the advantages it enjoys, and while the success of one or more prominent workers is often unfortunately conspicuously displayed, the ostensible purpose of the communication is to help the institution.

Second. Those concerning modes of treatment,—and while the primary object seems to be to satisfy the public desire for information on a cure for human ills, there is unfortunate prominence given to one or more physicians whose pictures usually appear in the article and whose personal success with the remedy in question is exploited.

Third. Those concerning one man; detailing his origin, his education, his opportunities, his achievements, and his success; and while such publicity may be considered a suitable recognition of arduous labor, well-performed, there is usually something said in the article which reduces it from a testimonial to a solicitation.

Books are written by physicians containing advice on matters of hygiene, sex talks, and a host of other subjects intended to improve the public health, and these are sold or distributed gratuitously. Again, there are many instances in which philanthropy is but a cloak for personal aggrandizement. Many of the lectures delivered by physicians to lay audiences belong under the same head.

Members of the County Society: According to the principles of medical ethics, enacted by those whose ripe experience and modest personal lives command our respect, this is all advertising matter!

The Principles of Medical Ethics of the American Medical Association by which we are governed, deal with the subject as follows: Abstract from Chapter 2, Article 1, Section 4, reads: "It is unprofessional to procure patients by indirect advertisement, or by furnishing or inspiring newspaper or magazine comments concerning cases in which the physician has been or is concerned. All other like self-laudations defy the traditions and lower the tone of any profession, and so are intolerable."

It is not the intention to convey the idea that every article, such as we are considering, is an advertisement written by the man described for the purpose of increasing his practice,—far from that! There are doubtless some which appear without the knowledge or consent of the man described. There are others, particularly those descriptive of institutions, in which the officer or worker, in his zeal to do justice to the great work accomplished therein, unwittingly appears in a prominent manner. But most of these are advertisements, just the same as those in which a physician describes his personal ability in the practice of medicine or in a specialty, and in the language of our code, they defy the traditions and lower the tone of the profession.

When in response to a number of complaints by members of the Society this investigation was undertaken, it seemed an easy task to prove that

* A Special Report Directed by the Comitia Minora. Read before the Meeting of the Medical Society of the County of New York, January 26, 1913.

the articles in question were simply efforts on the part of newspaper editors to acquaint the public with the progress in medicine, and with the men responsible for it; but the outcome was far from what was expected.

The newspaper editor, naturally anxious and probably morally bound to shield the espoused physician, cannot be expected to make the statement that a published article is a self-laudation accepted only because the contents make good copy, and not a literary effort of the editorial staff; but the truth is apparent to any one who will seek and gain confidence of those controlling the newspaper. The excuse that such articles are, in part, copied from the medical press is not valid, as all medical journals are copyrighted and such reprinting can be prevented if desired.

We are not alone in this complaint. In a recent article one author emphasizes, on the basis of examples of advertising on the part of physicians, that the so-called noble profession is at present characterized by a spirit of commercialism and the crudest egotism. He says that "Ethics" is a flexible term, peculiarly interpreted by some as regards their personal conduct. The French and Italian medical press also furnishes ample testimony on the subject; for example, Cajus, in *Il Policlinico,* 1909, mentions as one of the objectionable forms of publicity, all statements promising the cure of diseases which at the present state of scientific knowledge must be regarded as incurable; the claimed curative efficiency of the new remedy not being based on the experience obtained in scientific circles of undoubted standing. The German and English journals also show evidence of the growing evil of publicity in the lay press. Saundby, in his book *Medical Ethics,* London, 1907, states, that the publication of biographical sketches, portraits, and other laudatory notices of medical men, in the lay press, is to be deprecated, and practitioners should not consent to this sort of publication. They should not sanction quotations of extracts from their published medical writings.

It is not the duty or the intention of your Board of Censors, or of your executive body, to suggest action in this matter, but it is their duty as the result of complaint, to bring it to your attention, with the comment that this body deplores its occurrence and is unable to stop what is believed, in the main, to be self-laudation rather than public health education.

These two topics should not be confused. The public demands information on the progress in medical science; it has a right to do so, and the lay press will soon voice a protest, if under the guise of preventing the publication of articles by prominent physicians an attempt is made to prevent the demanded publicity of medical matters. This information should go to the public, but what is printed should be the substantiated truth and not the possibly immature ideas of an enthusiast who may awaken false hope and by the unsuccessful outcome of his efforts lower the confidence of the public in the profession. This Society has undertaken the work of public health education along other lines, and if it sees fit might also instruct the public through the medium of the press, far more efficiently than this is now done by the self-laudatory efforts which form the subject of this communication.

Recall for a moment the Nestors of our profession of twenty years ago; you all know their names well. Their prominence, accomplishments, and success were as great as any of to-day, and still, their pictures were confined to this building and the family album, and their professional opinions to the medical press.

We have amongst us, to-day, men of equal eminence, whose pictures cannot be purchased by newspapers at a photographic bureau, and whose opinions expressed in the medical journals never appear in the newspapers.

These are the members of the medical profession who measure up to the standard by which it is our right to be judged. These are also the men who are responsible for the respect of the community enjoyed by the medical profession as a whole.

Therefore, on behalf of the Comitia Minora I am directed to move the adoption of the following Resolution:

Whereas the Medical Society of the County of New York fully appreciates the desire of the public for information on medical and surgical advances, and at the same time the need for the maintenance of the best traditions of the profession

Be it Resolved that the Society requests its members when giving information to the lay press, to do so in an impersonal manner.

Be it further Resolved that the Society expects its members to conform strictly with the well-known Principles of Medical Ethics.

AMERICAN MEDICAL ASSOCIATION.

COUNCIL ON PHARMACY AND CHEMISTRY.

New and Non-official Remedies.

Since publication of *New and Non-Official Remedies,* 1914, and in addition to those previously reported, the following articles have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion with *"New and Non-Official Remedies."*

Serobacterins.—Serobacterins are emulsions of bacteria which have been treated by the application of the corresponding specific immune serum. Bacteria as treated are supposed to contain specific amboceptors so that immediate union with the complement of the patient's serum is said to occur. Hence, their action is supposed to be more rapid than that of ordinary vaccines. They are also said to be free from the negative phase and the general and local reactions produced by ordinary vaccines.

Staphylo-Serobacterin.—Mulford.—This is a sensi-

tized Staphylococcic Vaccine. H. K. Mulford Co., Philadelphia, Pa.

Strepto-Serobacterin,—Mulford.—This is a sensitized Streptococcic Vaccine. H. K. Mulford Co., Philadelphia, Pa.

Typho-Serobacterin,—Mulford.—This is a sensitized Typhoid Vaccine. H. K. Mulford Co., Philadelphia, Pa. (*Jour. A. M. A.*, Feb. 7, 1914, p. 457).

Disinfectant Krelos,—Mulford.—A solution of cresols or higher phenol homologues and rosin soap. The phenol coefficient, ranging from 5 to 7, is stated on the label. It is an antiseptic, germicide, and deodorent. Mulford Antiseptic Krelos is an almost black liquid, having a cresol-like odor, forming a milk-like emulsion with water. The H. K. Mulford Co., Philadelphia, Pa. (*Jour. A. M. A.*, Feb. 14, 1914, p. 537).

Anti-Anthrax Serum,—Mulford.—It is prepared by immunizing horses against virulent anthrax bacilli. H. K. Mulford Co., Philadelphia, Pa.

Anti-Streptococcic Serum Scarlatinal, Palyvalent,—Mulford.—The serum of horses treated with streptococci taken from scarlet fever patients. The H. K. Mulford Co., Philadelphia, Pa. (*Jour. A. M. A.*, Feb. 14, 1914, p. 537).

Corpus Luteum, Capsules.—Each capsule contains desiccated corpus luteum, Armour 03. Gm. Armour & Co., Chicago.

Corpus Luteum Tablets.—Each tablet contains desiccated corpus luteum, Armour 0.13 Gm. Armour & Co., Chicago. (*Jour. A. M. A.*, Feb. 21, 1914, p. 615).

Granular Effervescent Salicylos.—Each 100 Gm. contain strontium salicylate 6.54 Gm., ammonium salicylate 6.54 Gm. with an effervescing base of sodium bicarbonate, citric acid, and tartaric acid. H. K. Mulford Co., Philadelphia, Pa. (*Jour. A. M. A.*, Feb. 21, 1914, p. 615).

Amphotropin.—Hexamethylenamin Camphorate,—a compound of hexamethylenamin and camphoric acid. It combines the action of camphoric acid and hexamethylenamin, but is claimed to be free from the subjective gastric disturbances produced by camphoric acid and to be effective in smaller doses. It may be given dissolved in water or as Amphotropin Tablets containing 0.5 Gm. Farbwerke Hoechst Co., New York. (*Jour. A. M. A.*, Feb. 28, 1914, p. 697).

In letter, December 31, 1913, the Council agreed to request of Fairchild Bros. & Foster that the product "Essence of Pepsin,—Fairchild" be described in N. N. R., under the new name "Pepsencia," the Council later reconsidered this action.

W. A. Puckner,
Secretary, Council on Pharmacy and Chemistry.

PROPAGANDA FOR REFORM.

Sal Hepatica.—Sal Hepatica, marketed by the Bristol-Myers Co., New York, has been refused recognition by the Council on Pharmacy and Chemistry because its composition is secret, because it is advertised indirectly to the public for the treatment of diseases, because exaggerated and unwarranted claims are made for its therapeutic qualities and, because, its name fails to indicate its chief constituents, but does suggest its use in liver disorders. The Council authorized publication of its report because the exploitation of Sal Hepatica is an important illustration of the way in which physicians are being made parties to the introduction to the public of a patent medicine, the indiscriminate use of which must often have resulted in harm, direct or indirect. (*Jour. A. M. A.*, Feb. 7, 1914, p. 472).

Orrin Robertson and His Seven Sacred Oils.—Robertson is a quack, at present located at Arkansas City, Kansas, who claims to remove gall-stones by means of "Seven Sacred Oils which grow in seven different climes." For the oil, he claims, "One oil acts specifically upon the entire head and throat. One oil acts directly upon the esophagus. One oil acts directly upon the stomach." And so it goes, each oil acting a little lower down, until we reach the seventh oil which "acts directly" on the rectum. Robertson also exploits a cure for cancer. (*Jour. A. M. A.*, Feb. 7, 1914, p. 473).

Mu-col.—"Mu-col for Cleansing Mucous Membranes" is a nostrum put out by the Mu-col Company, (Inc.), Buffalo, N. Y. The following claims are made: "Mu-col obtains most gratifying results in catarrhal inflammations of the mucous membranes. Leucorrhea, Tonsilitis, Sore Throat, Cystitis, Internal Hemorrhoids, Nasal Catarrh and Pus Cases respond at once to irrigations with Mu-col solution. Strong solutions of Mu-col have proven of sterling value in treating Hives, Prickly Heat, Ivy Poison, Sunburn, Eczema, Typhoid and Scarlet Fever." Examination in the A. M. A. Chemical Laboratory showed Mu-col to be a mixture of sodium chlorid and borax, equal parts, with the addition of a small amount of aromatic substances. (*Jour. A. M. A.*, Feb. 7, 1914, p. 474).

Piorkowski Laboratories Not Licensed.—The Public Health Service announces that statements which seem to emanate from the so-called Piorkowski Laboratories in various parts of the country to the effect that these laboratories have been licensed by the U. S. Public Health Service are incorrect. Instead, after inspection, a license has been refused the Piorkowski Laboratories of Berlin, Germany. (*Jour. A. M. A.*, Feb. 14, 1914, p. 553).

Pyo-atoxin.—A box of Pyo-atoxin was submitted to the A. M. A. Chemical Laboratory for examination. The box contained thirty black capsules having the appearance of some of the popular gonorrhea nostrums. While the synonym "Pheno-Methylene-Formate" suggested that Pyo-atoxin was a definite chemical substance, the examination indicated that the powder contained in the capsules was a mixture of hexamethylenamin and methylene blue,—two well known drugs, the value and limitations of which are known to the medical profession. Pyo-atoxin is sold by H. O. Hurley, Louisville, Ky., and is said to be "An Antitoxin Agent Indicated in Gonorrhea, Cystitis, Pyelitis and Bacteriuric Conditions." (*Jour. A. M. A.*, Feb. 14, 1914, p. 552).

Hex-a-lith.—Hex-a-lith put out by the Smith-Dorsey Co., Lincoln, Neb., is said to be a combination of hexamethylenamin and lithium citrate. As lithium citrate has a tendency to render the urine alkaline, and since hexamethylenamin acts only in an acid medium, the constituents of this preparation are physiologically incompatible. (*Jour.* A. M. A., Feb. 14, 1914, p. 555).

What is a Patent Medicine?—While some physicians, and especially some medical journals have trouble in classifying certain proprietary medicines, drug departments, in department stores, find the problem a simple one. In recent Chicago newspapers advertisements for Fellow's Syrup of Hypophosphites, Glycothymoline, and Sal Hepatica, look perfectly at home with Peruna, Circus Liniment, and Beecham's Pills. (*Jour. A. M. A.*, Feb. 21, 1914, p. 631).

Lucile Kimball Obesity Cure.—Lucile Kimball of Chicago, comes to the obese with the message, "I can make your fat vanish by the gallon." All that is needed, she says, is to take her treatment,—no dieting, exercise, or drugs are needed. The treatment consists of pink pills, which are reported to contain red pepper, menthol, and bitters,—probably gentian or quassia; brown tablets, which the chemists declared to be an old fashioned cathartic pill, and a powder, reported to consist of soap, Epsom salt, and washing soda. (*Jour. A. M. A.*, Feb. 21, 1914, p. 631).

Louisenbad Reduction Salt.—This is a white powder sold by Karl Landshut, Chicago, and is to be used, dissolved, in a bath. The A. M. A. Chemical Laboratory reported the powder to be composed of sodium sulphate, sodium chlorid, and potassium chlorid. It is hardly necessary to say that taking a bath in a tubful of water in which a tablespoonful of the mixture has been dissolved would have no other effect than that obtained from bathing in the same amount of water without the mixture. (*Jour. A. M. A.*, Feb. 21, 1914, p. 632).

Effect of Tartrates.—Many of the organic acids, such as citric and acetic, are burned up in the body, giving rise to carbon dioxid and water; thus sodium citrate, for instance, acts just like sodium carbonate in the organism. On the other hand, tartaric acid and its salts are, for the most part, not destroyed in the body and leave it in their original form, and animal experiments have shown that large doses of tartrates may give rise to symptoms of nephritis. However, while the claim made for a certain baking powder that the tartaric acid of cream of tartar in it is "wholesome" is evidently unwarranted, W. Post has shown that in the doses in which tartrates in the form of purgative mixtures, etc., is ordinarily given, are probably without harmful effects. (*Jour. A. M. A.*, Feb. 21, 1914, p. 616).

Administration of Lecithin.—It has been shown many times that phosphorus, in the form of organic compounds, as it occurs in milk, or in eggs, probably changes in the body to phosphate and is subsequently elaborated into lecithin. In view of this there would seem to be no physiologic or biologic reason for preferring isolated lecithin, as a medicament, to milk or eggs. If it is believed that lecithin is indicated, the administration of one or two raw, or even cooked, yolks of eggs will supply all the lecithin that could be metabolized and presents it in a better manner than an artificial preparation. (*Jour. A. M. A.*, Feb. 21, 1914, p. 615).

Every Woman's Flesh Reducer.—This obesity treatment is sold by the Every Woman Company, Chicago, Ill., and is a white powder, smelling strongly of camphor, and is of the bath-powder type. Examination in the A. M. A. Chemical Laboratory indicated the powder to be a mixture of alum, Epsom salt, with an effervescing base of citric acid and sodium bicarbonate, or possibly sodium carbonate, with a small amount of camphor. (*Jour. A. M. A.*, Feb. 28, 1914, p. 714).

"Get Slim."—Jean Downs, New York, offers to reduce the obese with "a purely vegetable, pleasant, healthy drink." A box of "Get Slim" was examined in the A. M. A., Chemical Laboratory. It contained 15 large envelopes, the same number of smaller envelopes, and a package of powder. The large envelopes appeared to contain only sugar, tinted pink. The contents of the smaller envelopes appeared to be tartaric acid, also tinted pink. The white powder was concluded to be sodium bicarbonate only. The sugar and tartaric acid powders are to be made into lemonade with the addition of lemon. The bicarbonate of soda is dissolved, and the solution taken before meals. (*Jour. A. M. A.*, Feb. 28, 1914, p. 715).

Pam-ala, Another Worthless Quinin Substitute.—According to advertisements Pam-ala, sold by the Pam-ala Company, New York, is "A new and efficient Remedy for Malaria." Its general characteristics, particularly its cumin-like smell, and also the advertising claims, are very similar to Sinkina, a preparation which was shown to be worthless. Most of the testimonials sent out are rather old and are stated to come from physicians in Italy, Cuba, Porto Rico, Guatemala, etc. Two recent testimonials from physicians in the United States were investigated by the Council on Pharmacy and Chemistry and in each case it was found that the opinions had been based on insufficient trials and that the physicians on further use of Pam-ala had become convinced of its inefficiency. While the evidence indicated that the essential constituent of Pam-ala is oil of cumin, proven worthless in the investigation of Sinkina, a chemical analysis was not made by the Council because it was thought that the secrecy with which the identity of Pam-ala was surrounded and the extravagant and highly improbable claims were sufficient to condemn it. (*Jour. A. M. A.*, Feb. 28, 1914, p. 715).

CORRESPONDENCE.

BACKACHE.

To the Editor:

Dr. Clarence E. Coon, in his article with the above title, in The New York State Journal of Medicine, March, 1904, has omitted one of the causes of backache, namely, a peculiar chronic periostitis of one of the spinal processes, generally of a lumbar or sacral vertebra. The affection, according to my experience, is by no means a rare one, but very few physicians seem to recognize it. The characteristics are circumscribed pain or pressure on the affected process. The pain is present especially during the night when the patient is in a warm bed or on awakening in the morning; there is less or no pain during the day while the patient is about. There is slight elevation of temperature in the evening. The pain radiates sideways or downward; never ceases on its own account, but lessens and gradually will cease entirely under treatment for periostitis, which in this affection is one application of two leeches close to the spinal process from which the pain proceeds, and this promptly secures decided relief. The next step is painting the skin surrounding the affected spinal process, once a day, with tincture of iodine, and internally iodid of potassium. According to my experience this treatment has to be continued for a long period, because the pain, although continually diminishing will only cease completely in the course of time.

This peculiar form of backache occurs much more often in women than in men. The benefit experienced by them from the treatment for periostitis cannot be overestimated. In some cases they are no longer treated for some uterine trouble which in reality does not exist or has nothing to do with the periostitis. The affection is easily recognized by pressing with the finger along the spine on all the processes and finding that one, *and only one*, of these processes is painful on pressure, and when, as stated, the pain is worse during the night.

I have had thirty-five years' experience with this peculiar affection, but except, Dr. A. Jacobi, who first called my attention to it, I know of no physician who has published anything about it, but I know that women have been treated, often heroically, for uterine troubles, who suffer from nothing but this periostitis, in one case a surgeon had removed the coccyx. The backache remained and subsided only after treatment for periostitis of a spinal process above the os sacrum.

Dr. Jacobi told me,—it is thirty-five years ago.—that he had read in some medical journal a paper of a physician of a fashionable German watering place who had seen a number of patients sent to him suffering from backache which had been diagnosed by their physicians as manifestation of uterine disorder in which cases he, however, established and proved *ex juvantibus* the diagnosis of periostitis. In vain have I searched the literature for this paper.

I beg to leave it to Dr. Coon to investigate the ætiology, confining myself to the statement of facts.

A. Rose.

New York, March 19, 1914.

The Medical Society of the State of New York

108TH ANNUAL MEETING.

TUESDAY, APRIL 28TH.

Hotel Astor, 11 A. M.

Calling the Society to order.

Address of welcome by the Chairman of the Committee on Arrangements.

Reading of the minutes of the last meeting by the Secretary.

Oration on Surgery.
George W. Crile, M.D., Cleveland, Ohio, by invitation.

Address by the President, William Francis Campbell, M.D., Brooklyn.

SCIENTIFIC PROGRAM.

ARRANGED BY THE COMMITTEE ON SCIENTIFIC WORK.

Thomas J. Harris, M.D., Chairman,
104 East 40th St., New York City.
Thomas H. Halsted, M.D., Syracuse.
Lucius W. Hotchkiss, M.D., New York City.
Ross McPherson, M.D., New York City.
John O. Polak, M.D., Brooklyn.
Thomas S. Southworth, M.D., New York City.
Charles Stover, M.D., Amsterdam.

BY-LAWS, MEDICAL SOCIETY OF THE STATE OF NEW YORK,
CHAPTER XI.

SECTION 1. No address or paper before the Society, except those of the President and orators, shall occupy more than twenty minutes in its delivery, and no member shall speak upon any question before the house for longer than five minutes nor more than once on any subject, except by consent.

SEC. 2. All papers read before the Society by its members shall become the property of the Society. Permission may be given, however, by the House of Delegates or the Committee on Publication to publish such paper in advance of its appearance in the NEW YORK STATE JOURNAL OF MEDICINE.

SEC. 3. Any distinguished physician of a foreign country or a physician not resident of this State, who is a member of his own State Association, may become a guest during any annual session upon the invitation of the President or officers of the Society, and may be accorded the privilege of participating in all the scientific work of the session.

The order of reading papers will be in accordance with the printed program.

SECTION ON MEDICINE.

Chairman, Charles Stover, M.D., Amsterdam.
Secretary, George Reese Satterlee, M.D., New York.
Place of Meeting—Hotel Astor.

Tuesday Afternoon, April 28th, 2.30 P. M.

1. "The Pleural Lymph Flow; Causes of its Increase and Decrease," Albert H. Garvin, M.D., Raybrook.
2. "Clinical Irregularities of the Heart," Alexander Lambert, M.D., New York.
3. "Pulsus Alternans," Hermon C. Gordinier, M.D., Troy.
4. "The Drop Heart," Charles Lyman Greene, M.D., St. Paul, Minn., by invitation.
5. "Percussion vs. the X-ray in the Examination of the Heart," George Cheever Shattuck, M.D., Boston, Mass., by invitation.

Wednesday Morning, April 29th, 9.30 A. M.

6. "A Plea for the Diabetic," Douglas C. Moriarta, M.D., Saratoga Springs.
7. "Some Recent Thoughts on Diabetes and Metabolism," Waldron B. Vanderpoel, M.D., New York.
8. "Nephritis," Martin H. Fisher, M.D., Cincinnati, Ohio, by invitation.
9. "Experimental Study of the Spleen and its Relation to Blood Destruction and Regeneration, Hemolysis and Hemolytic Jaundice," Richard N. Pearce, M.D., Philadelphia, Pa., by invitation.
10. "Involvement of the Central Nervous System in the Early Stages of Syphilis." Arthur W. M. Ellis, M.D., New York, by invitation.

Immediately after adjournment of morning session, the section will be called to order for election of officers for the ensuing year.

Thursday Morning, April 30th, 9.30 A. M.

11. "Syringe Canula Transfusion," Edward Lindeman, M.D., New York.
12. "Recent Contributions to the Diagnosis of Nervous Diseases," Charles L. Dana, M.D., New York. Discussion by L. Pierce Clark, M.D. and J. Ramsay Hunt, M.D.
13. "The Proper Relation of Laboratory Work to Neurological Diagnosis," Bernard Sachs, M.D., New York. Discussion by Graeme M. Hammond, M.D.
14. "What Facts of Diagnostic and Prognostic Value may be obtained from Test Meal Examinations; an Analysis of 7,000 Cases," Frank Smithies, M.D., Chicago, Ill., by invitation.
15. "The Determination of Surgical Conditions of the Stomach," Walter A. Bastedo, M.D., and Leon T. Le Wald, M.D., New York. Discussion by G. Reese Satterlee, M.D., William A. Downes, M.D., Henry H. M. Lyle, M.D., Eugene W. Caldwell, M.D., New York.

Members desiring to discuss papers will please send in their names as soon as possible to the Secretary of the Section. Discussers will be called upon in the order in which their names are received.

Members are requested to write out their discussions and present the same to the Secretary of the Section on or before the close of each session. There will be no official stenographer provided for the sections, and unless the member writes out his remarks they cannot be printed. Pads and pencils will be provided.

MEDICAL CLINICS.

Illustrative of Papers Read Before the Section.

Wednesday Afternoon, April 29th.

City Hospital, Blackwell's Island, New York.—Charles G. Stockton, M.D., Buffalo (by invitation of Harlow Brooks, M.D.). At 2.30. Liver and Digestive Organs. C. N. B. Camac, M.D. At 4. Demonstration of Cases Showing Involvement of the Splenic and Lymphatic Systems.

Hospital Rockefeller Institute, 66th St. and Ave. A, New York.—Rufus I. Cole, M.D. At 4. Treatment of Pneumonia by Specific Sera: Treatment of Syphilis of the Central Nervous System.

Mt. Sinai Hospital, 100th St. and 5th Ave., New York.—Alfred Meyer, M.D. At 2.30. Performance of Artificial Pneumothorax with Floyd Robinson Apparatus; Nathan E. Brill, M.D., and Morris Manges, M.D.: Medical Cases of Interest in the Wards.

Neurological Institute, 149 E. 67th St., New York.—Charles L. Dana, M.D., Frederick Peterson, M.D., Pearce Bailey, M.D. At 4. Neurological Clinic with Demonstration of Cases and of Therapeutic and Diagnostic Methods.

New York Hospital, 7 West 15th St., New York.—Lewis A. Conner, M.D. At 2.30. Kidney.

New York Polyclinic Hospital, 341 W. 50th St., New York.—William Van Valzah Hayes, M.D. At 2.30. Gastro-intestinal. William H. Katzenbach, M.D. At 3.30. Medical Cases. Edward L. Kellogg, M.D. At 4.30. Gastro-intestinal.

New York Post-Graduate Hospital, 305 E. 20th St., New York.—Robert H. Halsey, M.D. At 2.30. Exhibition of cases with demonstration (by lantern slides) of Electrocardiograms, illustrating Heart-block produced by Digitalis and Salvarsan. Selian Neuhof, M.D. At 3.30. Some Clinical Data derived from Electrocardiograms. Lantern Demonstration, Max Einhorn, M.D. At 4.30. Demonstration of Stretching of the Cardia and of the Pylorus Duodenal Alimentation. S. Adolphus Knopf, M.D. At 4. Diagnosis of Pulmonary Tuberculosis. Graeme M. Hammond. At 3.30. John J. MacPhee, M.D. At 3.30.

West Side Tuberculosis Clinic, Health Department, 307 West 33d Street.—Bertram H. Waters, M.D. At 2.30. Demonstrations of Early Pulmonary Tuberculosis.

Thursday Afternoon, April 30th.

Bellevue Hospital, 26th St. and 1st Ave., New York.—Leo H. Neuman, M.D., Albany (by invitation of Alexander Lambert, M.D.). At 2.30. Heart. Edward Lindeman, M.D. At 4. Blood Transfusion.

Brooklyn Hospital, Raymond St. and DeKalb Ave., Brooklyn.—Glentworth R. Butler, M.D., and William H. Lehman, M.D. At 2.30. Practical Points in Diagnosis of Heart Lesions: Threshold Percussion: Polysphygmograph and Illustrative Cases. Joshua M. Van Cott, M.D. At 3.30. Demonstration of Clinical Cases of Nephritis. Dudley D. Roberts, M.D. At 4.30. Gastro-intestinal—1. Types of Chronic Diarrhoea, 2. Oesophageal Obstructions, 3. Lactose Test Meal.

Fordham Hospital, So. Blvd. and Crotona Ave., New York.—John E. Welch, M.D. At 2.30. Liver and Digestive Organs.

Jewish Hospital, Classon and St. Marks Aves., Brooklyn.—Leon Louria, M.D., Simon R. Blatteis, M.D., Joseph Merzbach, M.D., William Lintz, M.D. 3 to 5. Medical Clinics in conjunction with Laboratory and X-ray Demonstrations.

Montefiore Home, Gun Hill Road and Bainbridge Ave., New York. At 3. Demonstration of Advanced Methods in Diagnosis and Treatment of Internal Diseases.

New York Polyclinic Hospital, 341 W. 50th St., New York. Anthony Bassler, M.D. At 2.30. Medical Cases. Maurice Packard, M.D. At 3.30. Medical Cases. Orrin S. Wightman, M.D. At 4.30. Cases Showing Tests for Renal Function.

New York Post-Graduate Hospital, 305 E. 20th St., New York—Edward Quintard, M.D. At 2.30. Chronic Jaundice with Splenomegaly. Ludwig Kast, M.D. At 3.30. Some Diagnostic and Therapeutic Problems of Intestinal Diseases, with demonstration of cases. Arthur F. Chace, M.D. At 4.30 Presentation of cases of Arthritis Deformans; Infective Arthritis; Chronic Rheumatism and Gout; treated by Atophan and Radium Emanation.

Presbyterian Hospital, Madison Ave. and 70th St., New York.—Theodore C. Janeway, M.D., and Warfield T. Longcope, M.D. At 2.30. The Technique and Value of the Newer Tests of Kidney Function; the Differential Diagnosis and Prognosis in Nephritis.

Sea View Hospital, Staten Island.—Edward S. McSweeny, M.D. Demonstration of Artificial Pneumothorax Treatment. Those desiring to attend must notify the Section Chairman on or before Tuesday, at 5 P. M., so that proper arrangements can be made for motor cars, etc.

Friday and Saturday, May 1st and 2d.

Clinics will be held in all the hospitals in Greater New York, to which the members will be welcome.

SECTION ON SURGERY.

Chairman, Lucius W. Hotchkiss, M.D., New York.
Secretary, Gilbert D. Gregor, M.D., Watertown.
Place of Meeting—Hotel Astor.

Tuesday Afternoon, April 28th, 2.30 P. M.

1. "Exophthalmic Goitre; Its Treatment," John Rogers, M.D., New York.
2. "The Present Status of the Surgery of Spastic Contractures," Alfred S. Taylor, M.D., New York.
3. "The Value of the Various Tests for Determining the Functional Activity of the Kidney before Operation," James N. Vander Veer, M.D., Albany.
4. "Transfusion of Blood, Direct and Indirect. A Consideration of the Technic and Relative Value of Different Methods," John A. Hartwell, M.D., New York.

Wednesday Morning, April 29th, 9.30 A. M.

5. "The Surgery of Cranial Fractures, with a Brief Consideration of the Results, Immediate and Remote, of Fractures of the Vault and Base of the Skull," Charles A. Elsberg, M.D., New York.
6. "The Surgery of Compound Fractures of the Extremities," William L. Estes, M.D., South Bethlehem, Pa., by invitation.
7. "Conservatism in the Operative Treatment of Simple Fractures," George Woolsey, M.D., New York.
8. "Non-operative Treatment of Fractures of the Neck and Upper End of the Femur in Adults," John B. Walker, M.D., New York.
9. "Diagnosis by the X-rays in Case of Fracture, Based on the Records of 10,000 Fractures in Bellevue Hospital," Isaac S. Hirsch, M.D., New York.

Immediately after adjournment of morning session, the section will be called to order for election of officers for the ensuing year.

Thursday Morning, April 30th, 9.30 A. M.

10. "The Surgical Treatment of Empyema," Charles N. Dowd, M.D., New York.
11. "Acute Osteomyelitis, Surgery of," William L. Wallace, M.D., Syracuse.
12. "The Surgery of Acute Suppurative Spreading Infections of the Fingers and Hands," William B. Brinsmade, M.D., Brooklyn.
13. "The Status of Vaccine Therapy in Acute Suppurative Infections," Charles Norris, M.D., New York, by invitation.
14. "A Consideration of Methods and Results in the Surgery of Rectal Carcinoma," Charles H. Peck, M.D., New York.

Members desiring to discuss papers will please send in their names as soon as possible to the Secretary of the Section. Discussers will be called upon in the order in which their names are received.

Members are requested to write out their discussions and present the same to the Secretary of the Section on or before the close of each session. There will be no official stenographer provided for the sections, and unless the member writes out his remarks they cannot be printed. Pads and pencils will be provided.

SURGICAL CLINICS.

Illustrative of papers read before the Section.

Bellevue Hospital, 26th St. and 1st Ave.—John A. Hartwell, M.D., John Rogers, M.D., Thomas A. Smith, M.D., George D. Stewart, M.D., John B. Walker, M.D., George Woolsey, M.D. Wednesday and Thursday afternoons, April 29th and 30th.

Brooklyn Hospital, Raymond St. and DeKalb Ave., Brooklyn.—John E. Jennings, M.D., Richard W. Westbrook, M.D. Wednesday and Thursday, April 29th and 30th.

General Memorial Hospital, 106th St. and Central Park West, New York.—William B. Coley, M.D., William A. Downes, M.D., at 2.30—Malignant Tumors. Thursday, April 30th.

German Hospital, East 77th St., between Park and Lexington Aves., New York.—Willy Meyer, M.D. Thursday, April 30th.

German Hospital, St. Nicholas Ave. and Stanhope St., Brooklyn.—Russell Fowler, M.D. Thursday, April 30th.

Harlem Hospital, Lenox Ave. and 136th St., New York.—William H. Luckett, M.D. Wednesday, April 29th.

Hospital for Ruptured and Crippled, 321 East 42d St., New York.—Virgil P. Gibney, M.D., Wisner R. Townsend, M.D., Henry L. Taylor, M.D., George W. Hawley, M.D., Bridgeport (by invitation). 2.30 P. M., Wednesday, April 29th. Clinic on Fractures.

Jewish Hospital, Classon and St. Marks Aves., Brooklyn.—William Linder, M.D., J. Bion Bogart, M.D. Wednesday and Thursday, April 29th and 30th.

Kings County Hospital, Clarkson St., Brooklyn.—Edwin H. Fisk, M.D., J. Bion Bogart, M.D. Wednesday and Thursday, April 29th and 30th.

Lebanon Hospital, Westchester and Cauldwell Aves.—Parker Syms, M.D. Wednesday afternoon, April 29th.

Long Island College Hospital, Henry and Pacific Sts., Brooklyn.—J. D. Rushmore, M.D., William B. Brinsmade, M.D. Wednesday, April 29th. Henry H. Morton, M.D. Thursday, April 30th.

Methodist Episcopal Hospital, 7th Ave. and 6th St., Brooklyn.—Arthur H. Bogart, M.D., (and staff), Thomas B. Spence, M.D. Wednesday and Thursday, April 29th and 30th.

Mount Sinai Hospital, 100th St. and 5th Ave.—Edwin Beer, M.D., Charles A. Elsberg, M.D., Cranial and Spinal Operations under Intratracheal Insufflations; Howard Lilienthal, M.D., Alexis V. Moschcowitz, M.D. Thursday afternoon, April 30th.

New York Hospital, 7 West 15th St., New York.—James M. Hitzrot, M.D., Wednesday, April 29th; Eugene H. Pool, M.D., Thursday, April 30th.

New York Orthopedic Hospital and Dispensary, 126 East 59th St., New York.—Russell A. Hibbs, M.D. Wednesday, April 29th. Operative Treatment of Pott's Disease.

New York Polyclinic, 341 West 50th St., New York.—Charles H. Chetwood, M.D., at 2.30; Functional Tests of Kidney, Wednesday, April 29th. Andrew R. Robinson, M.D., at 2.30; Diagnosis and Treatment of Carcinoma of Skin and Buccal Cavity, Wednesday, April 29th. William Sharp, M.D., at 2.30; Operative Treatment of Fracture of the Skull; Brachial Birth Palsy (peripheral); Selected Cases of Spastic Paralysis; Fracture Dislocation of Spine, (laminectomy), Wednesday, April 29th. Arnold Sturmdorf, M.D., at 2.30; Levator Myorrhaphy for Perineal Laceration, Thursday, April 30th. Alexander Lyle, M.D., Hand Infections and Minor Surgery; Thursday, April 30th.

New York Post-Graduate Hospital, 20th St. and 2d Ave.—Robert T. Morris, M.D.; Aspinwall Judd, M.D., 2.30 to 3.30; Samuel G. Gant, M.D., 3.30 to 4.30; Rectum; J. Bentley Squier, M.D., 3.30 to 4.30; Henry L. Taylor, M.D., 4.30 to 5.30; all on Wednesday, April 29th. Samuel Lloyd, M.D.; Edward W. Peterson, M.D., Empyema, 2.30 P. M.; J. Bentley Squier, M.D., 3.30 to 4.30; Charles Ogilvy, M.D., 4.30 to 5.30; all on April 30th. Isaac S. Hirsch, M.D., X-ray Demonstration; all on Thursday, April 30th.

Presbyterian Hospital, 70th St. and Madison Ave. Ellsworth Eliot, M.D. Wednesday, April 29th.

Roosevelt Hospital, 59th St. and 9th Ave.—William Darrach, M.D., Wednesday afternoon, April 29th. George Brewer, M.D., Thursday, April 30th.

St. Francis' Hospital, East 142d St., between Brook and St. Ann's Aves.—George D. Stewart, M.D., Joseph B. Bissell, M.D., Thomas Kelly, M.D.

St. Luke's Hospital, 113th St. and Amsterdam Ave.—William A. Downes, M.D., Henry H. M. Lyle, M.D., Walton Martin, M.D., Frank S. Mathews, M.D., Wednesday and Thursday, April 29th and 30th.

St. Mary's Free Hospital for Children, 405 West 34th St.—William A. Downes, M.D., Frank S. Mathews, M.D.

St. Vincent's Hospital, 11th and 12th Sts. and 7th Ave.—Simon J. Walsh, M.D., at 2, Thursday, April 30th.

Friday and Saturday, May 1st and 2d.

Clinics will be held in all the hospitals in Greater New York, to which the members will be welcome.

SECTION ON OBSTETRICS AND GYNECOLOGY.

Chairman, Ross McPherson, M.D., New York.
Secretary, H. Judson Lipes, M.D., Albany.
Place of Meeting—Hotel Astor.

Tuesday Afternoon, April 28th, 2.30 P. M.

1. "The Dynamic Principles Underlying the Successful Cure of Procidentia with Cystocele and Rectocele," J. Riddle Goffe, M.D., New York. Discussion by Arnold Sturmdorf, M.D., and George G. Ward, Jr., M.D., New York.

2. "Sterility in Women," Willis E. Ford, M.D., Utica.

3. "The Action of Gonococcus on the Endometrium," John G. Clark, M.D., Philadelphia, Pa., (by invitation).

4. "Uterine Hemorrhage in Young Girls," Henry C. Coe, M.D., New York.

5. "Pregnancy and the Tuberculous Woman," Angenette Parry, M.D., New York.

Wednesday Morning, April 29th, 9.30 A. M.

6. "Retrodeviation of the Uterus in the Puerperium," Francis C. Goldsborough, M.D., Buffalo.

7. "The Effect on Subsequent Labors of Operation for Uterine Displacement," George W. Kosmak, M.D., New York.

8. "Diseases of the Umbilicus," Thomas S. Cullen, M.D., Baltimore, Md., (by invitation). Discussion to be opened by Howard Lilienthal, M.D., New York.

9. "Asphyxia Neonatorum and the Consideration of some of its Possible Sequelæ," Walter P. Manton, M.D. Detroit, Mich., (by invitation).

Immediately after adjournment of morning session, the section will be called to order for election of officers for the ensuing year.

Thursday Morning, April 30th, 9.30 A. M.

10. "Dysmenorrhœa," Rosalie S. Morton, M.D., New York.

11. "Infection with the Bacillus Coli Communis Complicating Pregnancy," Edward P. Davis, M.D., Philadelphia, Pa., (by invitation).

12. "Cystitis Coli in Women," Henry D. Furniss, M.D., New York.

13. "Puerperal Thrombophlebitis," William M. Brown, M.D., Rochester.

14. "A Consideration of Some Methods in the Treatment of Puerperal Infections which have given Important Results," Raleigh R. Huggins, M.D., Pittsburgh, Pa., (by invitation). Discussion to be opened by George L. Brodhead, M.D., and James A. Harrar, M.D., New York.

Members desiring to discuss papers will please send in their names as soon as possible to the Secretary of the Section. Discussers will be called upon in the order in which their names are received.

Members are requested to write out their discussions and present the same to the Secretary of the Section on or before the close of each session. There will be no official stenographer provided for the sections, and unless the member writes out his remarks they cannot be printed. Pads and pencils will be provided.

OBSTETRICAL AND GYNECOLOGICAL CLINICS.

Illustrative of Papers Read Before the Section.

Wednesday and Thursday Afternoons, April 29th, 30th. At 2 P. M.

Bellevue Hospital, Foot of East 26th St., New York.—Charles C. Barrows, M.D., and William E. Studdiford, M.D.

Beth Israel Hospital, Monroe, Jefferson and Cherry Sts., New York.—Louis J. Ladinski, M.D.

Brooklyn Hospital, Raymond St. and DeKalb Ave., Brooklyn.—Ralph H. Pomeroy, M.D.

City Hospital, Blackwell's Island, New York.— Franklin A. Dorman, M.D.

Gouverneur Hospital, Gouverneur and Front Sts., New York.—William H. W. Knipe, M.D.

Harlem Hospital, Lenox Ave. and 136th St., New York.—George L. Brodhead, M.D.

Jewish Maternity Hospital, 270-272 East Broadway, New York.—Abraham J. Rongy, M.D.

Lebanon Hospital, Westchester, Cauldwell and Trinity Aves.—Ralph Waldo, M.D.

Lying-in Hospital, 2d Ave. and 17th St., New York.—James W. Markoe, M.D., and Asa B. Davis, M.D.

Manhattan Maternity Hospital, 327 E. 60th St., New York.—Austin Flint, Jr., M.D.

Mt. Sinai Hospital, 100th St. and 5th Ave., New York—Forian Krug, M.D., and Hiram N. Vineberg, M.D.

New York Polyclinic Hospital, 341-351 West 50th St., New York.—J. Riddle Goffe, M.D., and Brooks H. Wells, M.D.

New York Post-Graduate Hospital, 303 E. 20th St., New York.—William H. W. Knipe, Wednesday. George L. Brodhead, M.D., Thursday.

Peoples' Hospital, 203 Second Ave., New York.—Ignatz M. Rottenberg, M.D.

Roosevelt Hospital, 58th to 59th Sts. and 9th Ave., New York.—Howard Canning Taylor, M.D.

Sloane Hospital for Women, 447 W. 59th St., New York.—Edwin B. Cragin, M.D.

Woman's Hospital, 110th St., Columbus and Amsterdam Aves., New York.—Dougal Bissell, M.D.

Friday and Saturday, May 1st and 2d.

Clinics will be held in all the hospitals in Greater New York, to which the members will be welcome.

SECTION ON PEDIATRICS.

Chairman, Thomas S. Southworth, M.D., New York.
Secretary, Joseph Roby, M.D., Rochester.
Place of Meeting—Hotel Astor.

Tuesday Afternoon, April 28th, 2.30 P. M.

1. "The Influence of Diet Upon the Growth and Recurrence of Adenoids," Frank vander Bogert, M.D., Schenectady. Discussion by William L. Culbert, M.D., New York.

2. "Some Manifestations of Influenza in Young Children," L. Emmett Holt, M.D., New York. Discussion by Linnaeus E. La Fétra, M.D., New York.

3. "Active Immunization in Diphtheria," William H. Park, M.D., New York. Discussion by Fred. M. Meader, M.D., Syracuse, by invitation.

4. "The Importance of Medical Supervision of Older Children," Edward J. Wynkoop, M.D., Syracuse. Discussion by J. Roberts Johnson, M.D., Syracuse; Godfrey R. Pisek, M.D., New York; Conway A. Frost, M.D., Utica; Norris G. Orchard, M.D., Rochester.

5. "The Causes and Treatment of Eczema in Infancy and Childhood," Rowland G. Freeman, M.D., New York. Discussion by Frank vander Bogert, M.D., Schenectady; George W. Crary, M.D., New York; Jacob S. Otto, M.D., Buffalo.

Wednesday Morning, April 29th, 9.30 A. M.

6. "Infant Welfare Work in New York State, Exclusive of New York City," (illustrated with lantern slides), Henry L. K. Shaw, M.D., Albany. Discussion by T. Wood Clarke, M.D., Utica; Joseph C. Palmer, M.D., Syracuse.

7. "Antityphoid Vaccination in Childhood" (illustrated with lantern slides), Major F. F. Russell, M.D., U. S. A. Med. Corps, Washington, D. C., by invitation. Discussion by Albert R. Lamb, M.D., New York; Morris L. Ogan, M.D., New York.

8. "The Health Program of the Physical Training Department, Board of Education, New York City (illustrated with lantern slides), C. Ward Crampton, M.D., New York. Discussion by Joseph C. Palmer, M.D., Syracuse.

9. "Further Studies in Gastric Analysis in Infants," DeWitt H. Sherman, M.D., Buffalo. Discussion by Alfred F. Hess, M.D., New York; T. Wood Clarke, M.D., Utica.

10. "Record Charts for the New-born" (illustrated with lantern slides), Walter Lester Carr, M.D., New York. Discussion by Floyd M. Crandall, M.D., New York.

Immediately after adjournment of morning session, the section will be called to order for election of officers for the ensuing year.

Thursday Morning, April 30th, 9.30 A. M.

11. "Presentation of Cases of Sporadic Cretinism," Charles Herrman, M.D., New York. Discussion by Henry Koplik, M.D., New York, and Walter W. Strang, M.D., New York.

12. "Causes and Treatment of Chronic Conjunctival Affections in Childhood, including Trachoma," Anna W. Williams, M.D., New York. Discussion by Colman W. Cutler, M.D., New York, and Anna I. von Shelly, M.D., New York, by invitation.

13. "Recurrent Bronchitis in Children," Charles G. Kerley, M.D., New York. Discussion by Charles Herrman, M.D., New York; Conway A. Frost, M.D., Utica.

14. "Subacute and Chronic Intestinal Infections," Elias H. Bartley, M.D., Brooklyn. Discussion by Henry A. Gribbon, M.D., Poughkeepsie; Oscar M. Schloss, M.D., New York.

15. "The Early Diagnosis of Congenital Syphilis," Carl G. Leo-Wolf, M.D., Niagara Falls. Discussion by Abraham Jacobi, M.D., New York; Philip Van Ingen, M.D., New York.

Members desiring to discuss papers will please send in their names as soon as possible to the Secretary of the Section. Discussers will be called upon in the order in which their names are received.

Members are requested to write out their discussions and present the same to the Secretary of the Section on or before the close of each session. There will be no official stenographer provided for the sections, and unless the member writes out his remarks they cannot be printed. Pads and pencils will be provided.

PEDIATRIC CLINICS.

Illustrative of papers read before the Section.

Babies' Hospital, O. P. D., Lexington Ave. and 55th St.—Frederic H. Bartlett, M.D. Wednesday, April 29, 2.30 to 3.30, Thursday, April 30, 2.30 to 3.30. General Pediatric Clinic.

Bellevue Hospital, foot of East 26th St.—Linnaeus E. LaFétra, M.D., assisted by Herbert B. Wilcox, M.D., and B. Raymond Hoobler, M.D. Wednesday, April 29, 2.30 to 3.30. Lumbar Puncture: Intravenous injection of neo-salvarsan: Demonstration of incubator room for premature babies, etc.

Demilt Dispensary, 23d St. and Second Ave.—William B. Noyes, M.D., assisted by Mary Sutton Macy, M.D. Wednesday, April 29, 2.30 to 3.30, Thursday, April 30, 2.30 to 3.30. Nervous Diseases of Childhood.

Hospital for Deformities and Joint Diseases, Madison Ave. near 124th St.—Henry W. Frauenthal, M.D. Wednesday, April 29, 2.30 to 3.30, Thursday, April 30, 2.30 to 3.30. Birth and acquired paralyses: Erb's palsy: Anterior Poliomyelitis: Spastics and Hemiplegics with their treatment.

German Hospital, Park Ave. and 76th St.—A. Jacobi Department for Children, Krackowizer Hall—Abraham Jacobi, M.D., Abraham L. Goodman, M.D., Philip Van Ingen, M.D., Jerome Leopold, M.D., Wednesday, April 29th, 2.30 to 3.30, and Thursday, April 30th, 2.30 to 3.30. Demonstrations by Pediatric Staff.

Good Samaritan Dispensary, Essex and Broome Sts. —E. Mather Sill, M.D. Wednesday, April 29, 2.30 to 3.30, Thursday, April 30, 2.30 to 3.30. Interesting cases in large pediatric clinic: Various tests for tuberculosis.

Hebrew Infant Asylum, Kingsbridge Road and Aqueduct Ave.—Alfred F. Hess, M.D. Wednesday, April 29, 2.30 to 3.30, Thursday, April 30, 2.30 to 3.30. Duodenal Catheterization in Infants.

Lebanon Hospital, Westchester and Cauldwell Aves. —Sidney V. Haas, M.D. Wednesday, April 29, 4 to 5, Thursday, April 30, 4 to 5. Pediatric cases, Surgical and Medical.

Long Island College Hospital, Henry and Pacific Sts., Brooklyn.—Elias H. Bartley, M.D. Thursday, April 30, 4 to 5. Pediatric ward cases: Physical training and management of Orthopedic cases: Skin and tuberculin tests for tuberculosis.

Mt. Sinai Hospital, Dr. Koplik's Wards, 100th St. and 5th Ave.—Henry Heiman, M.D. Wednesday, April 29, 4 to 5, Thursday, April 30, 4 to 5. Bedside pediatric clinic.

New York Post-Graduate Medical School and Hospital, 20th St. and Second Ave. (303 East 20th St.).—Henry D. Chapin, M.D. Wednesday, April 29, 2.30 to 3.30. Cases exemplifying the differential diagnosis of abdominal conditions in children.—Augustus Caillé, M.D. Wednesday, April 29, 3.30 to 4.30. Bedside clinic in the babies' Ward.—Henry D. Chapin, M.D., and Roger H. Dennett, M.D. Thursday, April 30, 2.30 to 3.30. Diarrhœal diseases in infants.

Public School No. 27, 41st and 42d Sts., east of 3d Ave.—C. Ward Crampton, M.D. Wednesday, April 29, 2.30 to 3.30. Demonstration of health aspects of school gymnastics and folk dances.

Public School No. 47, 225 East 23d St., east of 3d Ave.—Thursday, April 30, 4 to 5. Demonstration of new system of physical training applied to deaf children.

Research Laboratories of Department of Health, foot of East 16th St.—William H. Park, M.D. Director of Laboratories. Wednesday, April 29, 2.30 to 3.30, Thursday, April 30, 2.30 to 3.30. Demonstrations of the preparation of vaccines and antitoxins: Diagnostic procedures in Rabies, Trachoma, Meningitis: Complement Fixation Reactions in Gonorrhœa and Syphilis.

Hospital of the Rockefeller Institute, 66th St. and Avenue A.—Wednesday, April 29, 4 to 5. For demonstrations see under "Medical Clinics."

Roosevelt Hospital, Children's Ward, 59th St. and 9th Ave.—Rowland G. Freeman, M.D. Thursday, April 30, 4 to 5. Bedside clinic: Lumbar puncture: von Pirquet reaction, etc.

Hospital for Ruptured and Crippled, 321 East 42d St., east of 2d Ave.—Thursday, April 30, 4 to 5. Diagnosis of diseases of the hip joint in childhood: Femoral type, Wisner R. Townsend, M.D.; Acetabular type, Walter W. Strang, M.D.; Quiescent and Atypical types, William Frieder, M.D.; Bone lesions that may be mistaken for hip joint disease, Osteitis Fibrosa, Bone Cysts, Hemorrhagic Osteomyelitis, Sarcoma, etc., George W. Barrie, M.D.; X-Ray diagnosis of lesions of the hip joint, Byron C. Darling, M.D.

Willard Parker Hospital for Contagious Diseases, foot of East 16th St.—Matthias Nicoll, Jr., M.D., Wednesday, April 29, 4 to 5. Demonstration of Scarlet Fever and its complications. Thursday, April 30, 4 to 5. Demonstration of diphtheria cases, with treatment: Intubation.—Godfrey R. Pisek, M.D. Thursday, April 30, 4 to 5. Scarlet Fever and its complications.

Friday and Saturday, May 1st and 2d.

Clinics will be held in all the hospitals in Greater New York, to which the members will be welcome.

SECTION ON EYE, EAR, NOSE AND THROAT.

Chairman, Thomas H. Halsted, M.D., Syracuse.
Secretary, Percy Fridenberg, M.D., New York.
Place of Meeting—Hotel Astor.

Tuesday Afternoon, April 28th, 2.30 P. M.

1. "Recent Progress in Ophthalmology," Edgar S. Thomson, M.D., New York.
2. "Present Status of Squint and Insufficiencies," Herbert Wright Wootton, M.D., New York.
Discussion opened by Alexander Duane, M.D., New York.
3. "Glaucoma Operations, Old and New," Peter A. Callan, M.D., New York.
4. "Visual Field and Blind Spot; Clinical Examination," Colman Ward Cutler, M.D., New York.
Discussion, Frank W. Marlow, M.D., Syracuse.
5. "Cavernous Sinus Thrombosis, Case Report and Surgical Study," Thomas R. Pooley, M.D., New York.
6. "Public Health and Eye Disease," Ellice M. Alger, M.D., New York.
Discussion by F. Park Lewis, M.D., Buffalo.
7. "Ocular Sarcoma with Lantern Demonstrations," Walter B. Weidler, M.D., New York.
Discussion by George S. Dixon, M.D., New York.

Wednesday Morning, April 29th, 9.30 A. M.

SURGERY OF THE MAXILLARY ANTRUM.

8. "Intra-nasal Route," Lee Maidment Hurd, M.D., New York.
Discussion by Cornelius G. Coakley, M.D., and Robert C. Myles, M.D., New York.
9. "External Operations," Stephen H. Lutz, M.D., Brooklyn.
Discussion by Hubert Arrowsmith, M.D., Brooklyn.

SYMPOSIUM ON NASAL DEFORMITIES AND FRACTURES.

10. "The Correction of Nasal Deformities by Subcutaneous and Plastic Methods," John O. Roe, M.D., Rochester.

11. "The Use of Paraffin in Nasal Deformities," Harmon Smith, M.D., New York.

Discussion opened by Sidney Yankauer, M.D., New York.

12. "The Correction of Nasal Deformities by Mechanical Replacement and the Transplantation of Bone" (with lantern demonstration), William Wesley Carter, M.D., New York.

Discussion by Edward B. Gleason, M.D., and Herbert M. Goddard, M.D., Philadelphia, by invitation; James F. McCaw, M.D., Watertown.

Immediately after adjournment of morning session, the section will be called to order for election of officers for ensuing year.

Thursday Morning, April 30th, 9.30 A. M.

13. "Lantern Demonstration of the Recent Advances in Direct Laryngoscopy, Bronchoscopy and Esophagoscopy," Chevalier Jackson, M.D., Pittsburg, Pa., by invitation.

Discussion by Thomas H. Halsted, M.D., Syracuse; Sidney Yankauer, M.D., New York.

14. "Report on the Recent Developments of Otology," Thomas J. Harris, M.D., New York.

Discussion opened by Edward B. Dench, M.D., New York.

15. "Diagnosis of Labyrinthine Suppuration from a Practical Standpoint," John D. Richards, M.D., New York.

Discussion by Frederick Whiting, M.D., and Samuel J. Kopetzky, M.D., New York.

16. "Need of More Accurate Knowledge in the Diagnosis of Mastoiditis by the General Practitioner," James F. McCaw, Watertown.

Discussion by Clement F. Theisen, M.D., Albany; Wendell C. Phillips, M.D., New York.

Members desiring to discuss papers will please send in their names as soon as possible to the Secretary of the Section. Discussers will be called upon in the order in which their names are received.

Members are requested to write out their discussions and present the same to the Secretary of the Section on or before the close of each session. There will be no official stenographer provided for the sections, and unless the member writes out his remarks they cannot be printed. Pads and pencils will be provided.

EYE, EAR, NOSE AND THROAT CLINICS.

Illustrative of papers read before the Section.

Wednesday and Thursday Afternoons, April 29th, 30th.

Bellevue Hospital, 26th St. and 1st Ave., New York.—Charles E. Perkins, M.D., Robert L. Loughran, M.D., Radical Mastoid and Labyrinth Operations.

Brooklyn Eye and Ear Hospital , 94 Livingston St., Brooklyn.—Stephen H. Lutz, M.D., Herbert Arrowsmith, M.D., John D. Rushmore, M.D.

German Hospital, 77th St. and Lexington Ave., New York.—Rudolf C. Denig, M.D., Transplantation for Trachoma, Advancement for Squint.

Lebanon Hospital, Westchester and Cauldwell Aves. (near 149th St.), New York.—William Cowen, M.D., Percy Fridenberg, M.D., Moses D. Lederman, M.D., Isaac M. Heller, M.D.

"Lighthouse" Association for the Blind, 111 East 59th St., New York.—Ellice M. Alger, M.D., Clinic and Demonstration of Training Methods.

Mt. Sinai Hospital, 100th St. and Fifth Ave., New York.—Frederick Whiting, M.D., Seymour Oppenheimer, M.D., Sidney Yankauer, M.D., Emil Mayer, M.D., Suspenson Laryngoscopy, Bronchoscopy, Intranasal Operation for Disease of Lachrymal Sac, Tonsil Operations; Milton J. Ballin, M.D., Carl Koller, M.D., Worth Operation for Squint; Charles H. May, M.D., Discission (sub-conjuctival) of Secondary Cataract, Thiersch Graft of Orbital Cavity after Evisceration; Julius Wolff, M.D., Fat Transplantation after Enucleation; Alfred Wiener, M.D.

Manhattan Eye, Ear and Throat Hospital, 210 East 64th St., New York.—T. Passmore Berens, M.D., Arthur B. Duel, M.D., Samuel J. Kopetzky, M.D., Edmund P. Fowler, M.D., Wendell C. Phillips, M.D., Ear;—Lewis A. Coffin, M.D., John E. MacKenty, M.D., Harmon Smith, M.D., Throat; Frank Van Fleet, M.D., David Webster, M.D., J. Edward Giles, M.D., Joseph B. Emerson, M.D., Neil J. Hepburn, M.D, Edgar S. Thomson, M.D., Herbert W. Wootton, M.D., Frank N. Irwin, M.D., John Shannon, M.D., Eye; William W. Carter, M.D., Nose, Bridge Splint Operation and Bone Transplantation.

New York Eye and Ear Infirmary, Second Ave. and 13th St., New York.—Gorham Bacon, M.D., Edward B. Dench, M.D., Robert Lewis, M.D., John L. Adams, M.D., Frederick Whiting, M.D., Joseph A. Kenefick, M.D., Wilbur B. Marple, M.D., Henry R. Price, M.D., Walter E. Lambert, M.D., Iridectomy for Glaucoma; Operation for High Myopia. Lewis W. Callan, M.D., Trephining (Elliott) for Glaucoma. Robert G. Reese, M.D., Resection for Squint. John E. Weeks, M.D., Lagrange Operation for Glaucoma. Martin Cohen, M.D.

New York Ophthalmic and Aural Institute (Herman Knapp Memorial), 57th Street and 10th Ave., New York.—Arnold Knapp, M.D., Henry H. Tyson, M.D., Ervin Torök, M.D., Jackson M. Mills, M.D.

New York Polyclinic Dispensary, 341 West 50th St., New York.—Lee M. Hurd, M.D., Joseph H. Abraham, M.D., Throat; Edgar S. Thomson, M.D., Eye; Philip D. Kerrison, M.D., Ear.

New York Post-Graduate Medical School and Hospital, 305 East 20th St., New York.—John B. Rae, M.D., Operations on the Cadaver (ear). Robert L. Loughran, M.D., James F. McKernon, M.D., Ear. Beaman Douglass, M.D., Thomas J. Harris, M.D., Henry H. Forbes, M.D., Plastic Surgery of Nose: Operations on Maxillary Antrum. A. Edward Davis, M.D., Otto W. A. Schirmer, M.D., Eye.

New York Throat, Nose and Lung Hospital, 229 East 57th St., New York.—Reuben J. Held, M.D., Lee M. Hurd, M.D. Demonstrations have also been promised by Wolff Freudenthal, M.D., and Cornelius G. Coakley, M.D.

Presbyterian Hospital, 70th St. and Madison Ave., New York.—David Webster, M.D., Lewis W. Crigler, M.D., Eye.

St. Lukes Hospital, 113th St. and Amsterdam Ave., New York.—Colman W. Cutler, M.D., Alfred Wiener, M.D., Eye.

ENTERTAINMENTS.

The Annual Banquet will be held at the Hotel Astor on Wednesday, April 29th, at 7.30 P. M. The price of tickets is $5.00.

Speakers of eminence are expected and it is hoped to make the occasion a most enjoyable one.

Members are urged to bring their wives and are asked to arrange for desired groupings and to notify the Committee as promptly as possibly of their preference in seating.

Tables will be arranged for parties of eight, ten or twelve. Unless applications are received before April 20th, it may not be possible to assign seats as desired.

Application should be made to the Chairman, Dr. Chas. H. Richardson, 17 West 43d St., New York City.

Through the courtesy of the Health Officer of the Port of New York and the Commisioner of Health, arrangements will be made for Thursday afternoon, April 30th, for a visit to the Quarantine Station on Staten Island, and to the various public institutions of the Department of Health located on the East River.

Members of the Medical Society of the State of New York are invited to attend the Stated Meeting of the Medical Society of the County of New York, which will be held at the New York Academy of Medicine, 17 West 43d St., on Tuesday evening, April 28, 1914. The scientific programme will be as follows: Papers:

1. "Surgical Replacement of the Prolapsed Kidney." Illustrated by lantern slides. By Dougal Bissell, M.D

2. "A New Operative Treatment of Spastic Paralysis," by William Sharpe, M.D. This paper will be illustrated by lantern slides and moving pictures. Cases which have been operated on will be shown.

At the close of the meeting a collation will be served to which members and guests are invited.

RAILROAD RATES.

The lines in this territory on January 1, 1914, discontinued the granting of reduced rates, so that no special reduction in fares can be secured by those attending the Annual Meeting.

Members are advised to consult with local ticket agents and purchase either mileage books or round-trip tickets.

COMMERCIAL EXHIBITS.

The Exhibit Hall will be located in Hotel Astor on the same floor with the Bureau of Registration and Information. It will be open from 8.30 A. M. to 6 P. M., on Tuesday, Wednesday and Thursday, April 28th, 29th, 30th.

Regulations Regarding Exhibits.

No drug, chemical or similar preparation used in the treatment of disease can be exhibited which does not conform to the requirements of the Council on Pharmacy and Chemistry of the American Medical Association. (A copy of these requirements will be sent on request.)

No medical journal or publication can be exhibited that contains advertisements of drugs, chemicals or similar preparations used in the treatment of disease, which do not conform to the rules of the Council on Pharmacy and Chemistry of the American Medical Association.

The following firms will be represented:

Antiseptic Supply Co., New York City.
Appleton & Co., New York City.
Carnes Artificial Limb Co., Kansas City, Mo.
The DeVilbiss Manufacturing Co., Toledo, Ohio.
Electro Surgical Co., Rochester, N. Y.
Fairchild Bros. & Foster, New York City.
Franco-American Ferment Co., New York City.
Horlicks Malted Milk, Racine, Wis.
J. W. Hughes Co., New York City.
Kny Scheerer Co., New York City.
La oris Chemical Co., New York City.
Lea & Febiger, Philadelphia, Pa.
Macalaster Wiggin Co., Boston, Mass.
Mellins Food Co., Boston, Mass.
E. B. Meyrowitz, New York City.
P. & S. Co., New York City.
Radium Chemical Co., Pittsburg, Pa.
W. B. Saunders Co., Philadelphia, Pa.
Smith, Kline & French, Philadelphia, Pa.
E. R. Squibb & Co., New York City.
Victor Electric Co., New York City.
H. K. Wampole & Co., Philadelphia, Pa.
Welch Grape Juice Co., Westfield, N. Y.
M. Woolf, New York City.
Zemmer Co., Pittsburg, Pa.

BOOKS RECEIVED.

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

Nasal Accessory Sinuses: Development and Anatomy of the Nasal Accessory Sinuses in Man. Based on 290 lateral nasal walls, showing the various stages and types of development from the sixtieth day of fetal life to advanced maturity. By Warren B. Davis, M.D., Corinna Borden Keen Research Fellow, Jefferson Medical College, Philadelphia. Octavo of 172 pages with 57 original illustrations. Philadelphia and London. W. B. Saunders Company, 1914. Cloth, $3.50 net.

Progressive Medicine. A Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M.D., Professor Therapeutics, Materia Medica and Diagnosis, Jefferson Medical College, Philadelphia; Physician to the Jefferson Medical College Hospital. Assisted by Leighton F. Appleman, M.D., Instructor in Therapeutics, Jefferson Medical College; Ophthalmologist, Frederick Douglass Memorial Hosp.; Instructor in Ophthalmology, Philadelphia Polyclinic Hospital and College for Graduates in Medicine. Vol. I. March, 1914. Surgery of the Head, Neck and Thorax, Diseases of the Breast, Infectious Diseases, Acute Rheumatism, Croupous Pneumonia and Influenza, Diseases of Children, Rhinology and Laryngology, Otology. Price, $6.00 per annum. Lee & Febiger, Philadelphia and New York, 1914.

A Manual of Clinical Diagnosis by Means of Laboratory Methods. For Students, Hospital Physicians and Practitioners. By Charles E. Simon, B.A., M.D., Professor of Clinical Pathology and Experimental Medicine at the College of Physicians and Surgeons; Pathologist to the Union Protestant Infirmary and the Hospital for the Women of Maryland; Clinical Pathologist to the Mercy Hospital of Baltimore, Maryland. Eighth Edition, enlarged and thoroughly revised. Illustrated with 185 engravings and 25 plates. Lea & Febiger, Philadelphia and New York, 1914.

Natural Sources of Energy. By A. H. Gibson, D.Sc., Assoc. Mem. Inst. C.E., Professor of Engineering of the University of St. Andrews at University College, Dundee. Cambridge, at the University Press. New York, G. P. Putnam's Sons, 1913.

The Pathogenesis of Salvarsan Fatalities by Sanitats-Rat, Dr. Wilhelm Wechselmann, Directing Physician of the Dermatological Department, Rudolph Virchow Hospital in Berlin. Authorized Translation by Clarence Martin, M.D., First Lieut. M.R.C., U. S. Army; Late Clinical Assistant St. Peter's Hospital for Stone and other Urinary Diseases, London, Member Association Military Surgeons, Berlin, Urological Society, etc. The Fleming-Smith Company, Medical Publishers, St. Louis, Mo.

Communicable Diseases. An Analysis of the Laws and Regulations for the Control thereof in Force in the United States. By J. W. Kerr, Assistant Surgeon General, and A. A. Moll, A.B. Prepared by the Direction of the Surgeon General. Public Health Bulletin, No. 62, July 1913. Government Printing Office, Washington, D. C., 1914.

Chemical Pathology. Being a Discussion of General Pathology from the Standpoint of the Chemical Processes Involved. By H. Gideon Wells, Ph.D., M.D., Professor of Pathology in the University of Chicago, and in Rush Medical College, Chicago. Second Edition, thoroughly revised. Octavo of 616 pages. Philadelphia and London. W. B. Saunders Company, 1914. Cloth, $3.25 net.

International Clinics, A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles on Medicine, Surgery, Neurology, Pediatrics, Obstetrics, Gynecology, Orthopedics, Pathology, Dermatology, Ophthalmology, Etc., by leading members of the profession. Edited by Henry W. Cattell, A.M., M.D., with collaboration of John Witherspoon, M.D., Sir William Osler, M.D., A. McPhedran, M.D., Frank Billings, M.D., Charles H. Mayo, M.D., Thomas H. Rotch, M.D., John G. Clark, M.D., James J. Walsh, M.D. etc., with regular correspondents in London, Paris, Berlin, etc. Volume I. Twenty-fourth Series, 1914. J. B. Lippincott Company, Philadelphia and London. Price, $2.00.

In Memoriam.

DR. EGBERT LE FEVRE.

Egbert Le Fevre, M.D., Sc.D., LL.D., Dean of the University and Bellevue Hospital Medical College, died at his home in New York, after a brief illness, on March 30, 1914. He was born October 29, 1858, the son of James Le Fevre, D.D., and Cornelia Hasbrouck Le Fevre. He graduated from Rutgers College in 1880, and attained the A.M. degree four years later. He graduated as a prize man from the University Medical College of New York, in 1883, and served on the staff of Bellevue Hospital from 1883 to 1885, and became visiting physician in 1898. During his professional life of thirty-one years he served upon the staff of numerous dispensaries and hospitals, and was consulting physician to not less than six institutions. He was a teacher of unusual ability and for many years held the professorship of therapeutics in the University and Bellevue Hospital Medical College. In 1898 he was made Dean of that institution and soon became an influential factor in medical education in the State and country. He was a member of numerous medical and social clubs, and was especially active in the American Medical Association, State Medical Society, New York Academy of Medicine, and County Medical Society.

Dr. Le Fevre's interests were broad and varied and his activities were many. It may truly be said that he had a genius for medicine. He was possessed of an intuition and knowledge of human nature, which, combined with unusual scientific attainments, rendered him an astute and accurate diagnostician. His professional work had become almost exclusively consulting in nature. As a consultant he was not one of those who regarded it as his function to make a diagnosis solely. His advice upon treatment and management was always practical and helpful in the extreme. He was the soul of courtesy both to patient and attending physician and his loss will be sorely felt by scores of practitioners in New York.

While he was a successful teacher, Dr. Le Fevre's reputation was not that of teacher alone. He was an educator in the broadest sense. No man was more earnest in advancing the standards of medical education, but his intensely practical nature led him to reject half-baked and ill-considered propositions, incapable of accomplishment. He believed in advancing as far and as fast as the times were ripe for advancement and closely analyzed every proposition from the standpoint of possibility of execution and feasibility. His position at times was that of a balance wheel and he was instrumental in checking several ill-advised projects of enthusiasts, endowed with zeal not according to knowledge. He felt deeply the insinuations of certain visionary doctrinaires who were unable to comprehend his aims and point of view. He was a natural leader of men and had a powerful influence over young men. They followed him with implicit confidence wherever he led and he always led them right. It is fortunate when such a man is of inflexible integrity and of lofty ideals. In a most appreciative tribute, Chancellor Brown, of the New York University, said: "As I have heard him from year to year addressing the entering class at the Medical College, I have been profoundly thankful that our medical students were to be under his leadership. It was a massive and vigorous leadership, and pitched on a high plain. In both his professional and academic relationships he was singularly high-minded and unselfish."

Notwithstanding his arduous labors in consulting practice, and as hospital physician, and head of a great medical college, Dr. Le Fevre gave liberally of his time and talents to the medical profession, which he honored and loved. During his entire career he was an active and influential member in many societies, but never held high office. I know as a fact that he might have held many such positions, but steadfastly refused to accept any but such minor places as censor in the County Society or Corresponding Secretary in the Academy, which gave him position on the governing boards of those bodies. His integrity of purpose and lack of selfishness and self-seeking were important factors in rendering him one of the most influential, perhaps the most influential, of the members of the medical profession of New York City at the time of his death. The opinion of few was more frequently sought on matters of medical policy.

He was a member of the House of Delegates of the State Medical Society every year after the amalgamation. Here, as elsewhere, he was a most efficient member. For many years he was an active member of the Council on Medical Research, and was President of the Association of American Medical Colleges.

As a writer, Dr. Le Fevre was clear and logical and his productions were eminently practical. His work on "Physical Diagnosis," has had a wide sale and has been extensively used by life insurance examiners. His addresses before medical societies were among the best of his literary productions.

While positive in his beliefs and expressions, and often aggressive, Dr. Le Fevre was a man of most attractive character. He could enter a sick room and win the confidence of a patient at the first question. His personality was compelling. Six feet and four inches in height, with a massive and well proportioned frame and an intellect in full accord, he was a man rarely to be met with. In a friendship beginning March 30, 1884, and terminating only at his death, March 30, 1914, there was never a break or a flaw. Differences of opinion there were, but he was a man of such largeness of character that he could recognize two sides of a question and concede honesty of belief to those who did not accept his own views. I regard it as a great privilege to have this opportunity of giving personal tribute to that friendship of thirty years. For suffering and misfortune he had large sympathy, unusual even among physicians. It is rare that so many talents are given to one man as were entrusted to Egbert Le Fevre, and he hid not one in the earth, but developed them all for the good of his fellow men and the uplifting of his profession. F. M. C.

DEATHS.

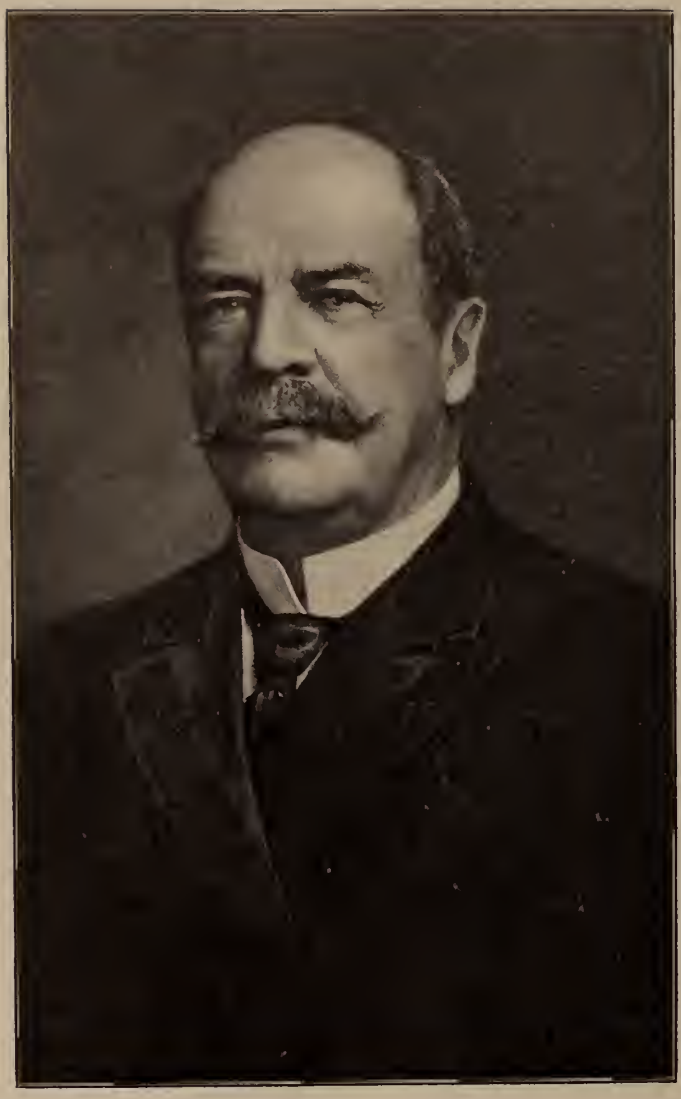
John R. Devine, M.D., Utica, died 1914.

Everett Herrick, M.D., New York City, died April 1, 1914.

Egbert LeFevre, M.D., New York City, died March 30, 1914.

George McNaughton, M.D., Brooklyn, died March 17, 1914.

Herman Fred Lange Ziegel, M.D., New York City, died March 27, 1914.



Joseph D. Bryant, M.D., LL.D.

NEW YORK STATE JOURNAL OF MEDICINE

A Journal Devoted to the Interests of the Medical Society of the State of New York

JOHN COWELL MAC EVITT, M.D., Editor

Business and Editorial Offices: 17 West 43d Street, New York, U. S. A.
Address Journals sent in Exchange to 1313 Bedford Avenue, Brooklyn, N. Y., U. S. A.

Vol. XIV. MAY, 1914 No. 5

EDITORIAL DEPARTMENT

JOSEPH D. BRYANT, M.D., LL.D.

WE ask ourselves in moments of depression (for who escapes them) why toil and strive for honor and position, which when achieved, seem in themselves, so poor, so weak, so disappointing. That answer comes not, until our neurasthenic phantoms melt beneath the rays of normal thought and we reply: not for the pleasure of their possession here nor in the hereafter, but for the knowledge of the good they enable us to do, and the memory we leave of what we were, to those who in life held us dear. So must have thought the man Joseph Decatur Bryant, the subject of this memorial-biography, who died April, 1914.

Dr. Joseph Decatur Bryant was born in East Troy, Walworth County, Wisconsin, March 12, 1845, son of Alonzo Ambrose and Harriett Atkins Bryant. His ancestry on both sides was of English origin, the Bryant genealogy having been traced from 1450, when various members were knighted for bravery in the wars of that period.

On the maternal side Dr. Bryant descended from the old English family of Atkins, members of which, as indicated by a heraldic device, participated in the Holy Wars of the Crusaders. His father, a native of Chenango County, New York, was one of twelve children, none of whom died before the age of seventy from a preventable disease; his mother was also a native of New York State. They were married in 1842, and Joseph D. was the only child. He received his preliminary education in the common schools in the vicinity of his native town, and worked on his father's farm during the summer. He afterwards attended the high school and Norwich Academy. He began the study of medicine with Dr. George W. Avery, and in 1866 entered Bellevue Hospital Medical College, from which he was graduated a Doctor of Medicine in 1868, and received the degree of LL.D. from the New York University in 1907. He was an interne at Bellevue Hospital 1869-71 and from that period until the consolidation of Bellevue Hospital Medical College with the New York University Medical College in 1897 held various teaching positions in surgery, with the most marked success in that institution of medical learning. From the date of consolidation of the two schools until his death he held the position of Professor of the Principles and Practice of Surgery in the

combined institutions. He was attached as visiting or consulting surgeon to many hospitals, among them Bellevue and St. Vincent's, New York City. In civil and military life Dr. Bryant held a number of important appointments, notably those of Medical Health Commissioner of New York City, 1887-1903, Commissioner of the State Board of Health, 1887-93. Surgeon with the rank of major in the Seventy-first Regiment, National Guard, N. Y., 1873-82, Surgeon-General with the rank of Brigadier-General on the staffs of Governors Cleveland, Hill and Flower; his most recent appointment was that of Lieutenant in the Medical Reserve Corps, U. S. A. He was a prolific writer on surgical subjects. His fame as an author was established by Bryant's "Operative Surgery" (2 volumes). He was an officer or fellow of a great many medical societies and associations, President of the New York Academy of Medicine, 1895, President of the New York State Medical Association in 1898, President of the Medical Society of the State of New York, 1905 and 1906, President of the American Medical Association, 1907.

As a surgeon and as a teacher of anatomy and surgery he was excelled by none. His public-spirited and distinterested devotion to his profession was a distinguishing trait of his character. His work and influence in the Department of Health have had a lasting effect throughout the world. He inaugurated the fight against pulmonary tuberculosis; he established the systematic enforcement of the tenement law against overcrowding; he disapproved of the official action of the Health Officer of the Port and compelled the adoption of the city's health department regulations to prevent the invasion of cholera.

In everything he undertook he was forceful and indefatigable in its accomplishment.

At the meeting of the House of Delegates of the American Medical Association held at New Orleans, La., May, 1903, he was a member of the Committee on Medical Ethics which eliminated the word "code" substituting the expression Principle of Medical Ethics, thus permitting each state to formulate the principle of medical ethics without definite reference to code or penalties, and left to each state medical society the right to establish such rules as it might regard fitting and proper for regulating the professional conduct of its members, that would not infringe upon the established ethical principles of the American Medical Association. The adoption of this report had a far-reaching effect in putting an end to controversial questions which had for many years disturbed the councils of the association. He was chairman of the Committee on National Incorporation of the American Medical Association and worked most strenuously to secure its recognition by Congress. The subcommittee of the Committee on Judiciary of the House of Representatives of the fifty-eighth session regarded the bill as unconstitutional, particularly the clause, "to hold or convey real estate and transact business anywhere in the United States." This was a keen disappointment to Dr. Bryant, who contended that it was constitutional, that the most eminent legal authority pronounced it so, and that some ulterior motive was behind its non-adoption. As it is now known the American Medical Association exists under a charter issued by the State of Illinois.

He was married at Bath, New York, September 28, 1874, to Annette Amelia, daughter of Samuel and Jane Crum. One child was the result of this union, Florence Annette, the wife of Frederick Augustus de Peyster.

We have but briefly touched upon the most important events of his wonderfully beneficent career. Those who knew him smiled at his manly faults and admired his sterling qualities. To those who did not know him we can but add that he was like—

A giant tree,
Deep rooted in a soil
Fed by an eternal spring.
Whose branches cast their shade
O'er verdant fields,
Whose leaves tremulous in the wind,
Seemed ever smiling,
Lies prostrate now.

DR. GEORGE W. CRILE'S ORATION ON SURGERY.

DR. CRILE selected as the subject of his discourse, delivered at the One Hundred and Eighth Annual Meeting of the Medical Society of the State of New York, "The Kinetic System." It was a most erudite, masterly contribution to the world of medicine; opening up a vista reaching far away to the horizon of a new realm of thought, in which physiology, biology and clinical medicine form a trilogy which, if rightly interpreted, will in some respects revolutionize the present practice of medicine.

His theory, intense in originality, comprehensive in outline, practical in application, appeals to us as one which had its inception in the analysis of his past experimentations, and from which with infinite labor, assisted hy his co-workers, Drs. J. B. Austin, F. W. Hitchings, H. G. Sloan and M. L. Menten, he has evolved, not a hypothesis, but a demonstrable truth. Few will attempt to controvert his deductions, based as they are upon the experimental evidence he presented to sustain them. We will essay no analytical comments, lest some one satisfied with the mere outlines would forego the reading of a thesis that should be studied in solitude, where silence will permit mental concentration upon this most brilliant addition to medical knowledge.

THE PORT OF NEW YORK QUARANTINE PROTECTION AND ITS NECESSITIES.

THE inadequacy of our present quarantine facilities is a constant menace not only to our own state but to the country at large. Furthermore, the hardships imposed upon citizens returning from abroad, and upon emigrants detained at Swinburne Island, sick with quarantinable diseases, and those held for observation at Hoffman Island, are increased by the absence of modern sanitary and hygienic environments. The dictates of humanity demand at least that the sick receive proper care, and those quarantined for the protection of others the ordinary comforts of life to which they are accustomed.

It is difficult to understand the reasoning processes of our legislators, who refuse to adopt the recommendations of the Health Officer of the Port of New York, for the necessary improvements to protect the country against the invasion of preventable epidemic diseases. Economy may be a public virtue but health is a public necessity. It is unnecessary to refer to the ability displayed by Dr. O'Connell in the administration of his office. He should be encouraged in carrying out the wise provisions of safety endorsed by the Advisory Board.

GROVER W. WENDE, M.D.

DR. GROVER W. WENDE, President of the Medical Society of the State of New York, received his degree of Doctor of Medicine from the University of Pennsylvania. Following his graduation, he pursued special studies in Prague, Vienna and Paris. On his return he located in Buffalo, New York, where his ability as a dermatologist was soon recognized. For many years he has filled the Chair of Dermatology in the University of Buffalo. Other honors came in rapid succession. The Presidency of the American Dermatological Society, the Presidency of the Erie County Medical Society and the Chairmanship of the Section of Dermatology of the American Medical Association (in all of which he acquitted himself with credit). As an associate editor of the *Buffalo Medical Journal,* he added much to the success of that well-known journal. His contributions to the literature of his specialty are highly prized. His friends speak of him as being a good organizer, modest in bearing, precise in speech, steadfast in friendship and the personification of honor. His enemies—we found none.

Original Articles

THE KINETIC SYSTEM*.

By GEORGE W. CRILE, M.D.,
CLEVELAND, OHIO.

IN this paper I formulate a theory which I hope will harmonize a large number of clinical and experimental data, supply an interpretation of certain diseases, and show by what means many diverse causes produce the same end effects.

Even should the theory prove ultimately to be true, it will meantime doubtless be subjected to many alterations. The specialized laboratory worker will at first fail to see the broader clinical view, and the trained clinician may hesitate to accept the laboratory findings. Our viewpoint has been gained from a consideration of both lines of evidence on rather a large scale.

The responsibility for the kinetic theory is assumed by myself, while the responsibility for the experimental data is shared fully by my associates, Dr. J. B. Austin, Dr. F. W. Hitchings, Dr. H. G. Sloan and Dr. M. L. Menten.

INTRODUCTION.

The self-preservation of man and kindred animals is effected through mechanisms which transform latent energy into kinetic energy to accomplish adaptive ends. Man appropriates from environment the energy he requires in the form of crude food which is refined by the digestive system; oxygen is taken to the blood and carbon dioxid is taken from the blood by the respiratory system; to and from the myriads of working cells of the body, food and oxygen and waste are carried by the circulatory system; the body is cleared of waste by the urinary system; procreation is accomplished through the genital system; but none of these systems are evolved primarily for the purpose of transforming potential energy into kinetic energy for specific ends. Each system transforms such amounts of potential into kinetic energy as are required to perform its specific work; but no one of them transforms latent into kinetic energy for the purpose of escaping, fighting, pursuing; nor for combating infection. The stomach, the kidneys, the lungs, the heart strike no physical blow—their rôle is to do certain work to the end that the blow may be struck by another system evolved for that purpose. I propose to offer evidence that there is in the body a system evolved primarily for the transformation of latent energy into motion and into heat. This system I propose to designate The Kinetic System.

The kinetic system does not directly circulate the blood, nor does it exchange oxygen and carbon dioxid; nor does it perform the functions of digestion, urinary elimination and procreation; but though the kinetic system does not directly perform these functions, it does play indirectly an important rôle in each, just as the kinetic system itself is aided indirectly by the other systems.

The principal organs which comprise the kinetic system are the brain, the thyroid, the suprarenals, the liver and the muscles. The brain is the great central battery which drives the body; the thyroid governs the conditions favoring tissue oxidation; the suprarenals govern immediate oxidation processes; the liver fabricates and stores glycogen; and the muscles are the great converters of latent energy into heat and motion.

Adrenalin alone, thyroid extract alone, brain activity alone, and muscular activity alone are capable of causing the body temperature to rise above the normal. The functional activity of no other gland of the body alone, and the secretion of no other gland alone can cause a comparable rise in body temperature—that is, increased functional activity; and no active principle derived from the kidney, the liver, the stomach, the pancreas, the hypophysis, the parathyroid, the spleen, the intestines, the thymus, the lymphatic glands or the bones can, *per se,* cause a rise in the general body temperature comparable to the rise that may be caused by the activity of the brain or the muscles, or by the injection of adrenalin or thyroid extract. Then, too, when the brain, the thyroid, the suprarenals, the liver or the muscles are eliminated, the power of the body to convert latent into kinetic energy is impaired or lost. I shall offer evidence tending to show that an excess of either internal or external environmental stimuli may modify one or more organs of the kinetic system, and that this modification may cause certain diseases. For example, alterations in the efficiency of the cerebral link may yield neurasthenia, mania, dementia; of the thyroid link, Graves' disease, myxedema; of the suprarenal link, Addison's disease, cardio-vascular disease.

This introduction may serve to give the line of our argument. We shall now consider briefly certain salient facts which relate to the conversion of latent energy into kinetic energy as an adaptive reaction. The amount of experimental data is so large that they will later be published in a monograph.

The amount of latent energy which may be converted into kinetic energy for adaptive ends varies in different species, in individuals of the same species, in the same individual in different seasons; in the life cycle of growth, reproduction and decay; in the waking and sleeping hours; in disease and in activity. We shall here consider briefly the reasons for some of those variations and the mechanism which makes them possible.

* Read at the Annual Meeting of the Medical Society of the State of New York, at New York City, April 28, 1914.

Biologic Consideration of the Adaptive Variation in Amounts of Energy Stored in Various Animals.

Energy is appropriated from the physical forces of nature that constitute the environment. This energy is stored in the body in quantities in excess of the needs of the moment. In some animals this excess storage is greater than in other animals. Those animals whose self-preservation is dependent on purely mechanical or chemical means of defense, such animals as crustaceans, porcupines, skunks or cobras, have a relatively small amount of convertible (adaptive) energy stored in their bodies. On the contrary, the more an animal is dependent on its muscular activity for self-preservation the more surplus available (adaptive) energy there is stored in its body. It may be true that all animals have approximately an equal amount per kilo of chemical energy—but certainly they have not an equal amount stored in a form which is available for immediate conversion for adaptive ends.

Adaptive Variation in the Rate of Energy Discharge.

What chance for survival would a skunk have without odor: a cobra without venom: a turtle without carapace: or a porcupine shorn of its barbs, in an environment of powerful and hostile carnivora? And yet in such a hostile environment many unprotected animals survive by their muscular power of flight alone. It is evident that the provision for the storage of "adaptive" energy is not the only evolved characteristic which relates to the energy of the body. The more the self-preservation of the animal depends on motor activity, the greater is the range of variation in the rate of discharge of energy. The rate of energy discharge is especially high in animals evolved along the line of hunter and hunted, such as the carnivora and the herbivora of the great plains.

Influences that Cause Variation in the Rate of Output of Energy in the Individual.

Not only is there a variation in the rate of output of energy among various species of animals, but one finds also variations in the rate of output of energy among individuals of the same species. If our thesis that men and animals are mechanisms responding to environmental stimuli is correct, and further, if the speed of energy output is due to changes in the activating organs as a result of adaptive stimulation, then we should expect to find physical changes in the activating glands during the cycles of increased activation. What are the facts? We know that most animals have breeding seasons evolved as adaptations to the food supply and weather. Hence there is in most animals a mating season in advance of the season of maximum food supply so that the young may appear at the period when food is most abundant. In the springtime most birds and mammals mate, and in the springtime at least one of the great activating glands is enlarged—the thyroid in animals and in man shows seasonal enlargement. The effect of the increased activity is seen in the song, the courting, the fighting, in the quickened pulse and in a slightly raised temperature. Even more activation than that connected with the season is seen in the physical act of mating—when the thyroid is known to enlarge materially, though this increased thyroid activity, as we shall show later, is probably no greater than the increased activity of other activating glands. In the mating season the kinetic activity is speeded up; in short, there exists a state—a fleeting state—of mind Graves' disease; in the early stages of Graves' disease, before the destructive phenomena are felt, the kinetic speed is high and life is on a sensuous edge. Not only is there a seasonal rhythm to the rate of flow of energy, but there is a diurnal variation, the ebb is at night, and the full tide in the daytime. This observation is verified by experiments which show that certain organs in the kinetic chain are histologically exhausted, the depleted cells being for the most part restored by sleep.

We have seen that there are variations in speed in different species, and that in the same species speed varies with the season of the year and with the time of day. In addition there are variations also in the rate of discharge of energy in the various cycles of the life of the individual. The young are evolved at high speed for growth, so that as soon as possible they may attain to their own power of self-defense; they must adapt themselves to innumerable bacteria; to food, and to all the elements in their external environment. Against their gross enemies the young are measurably protected by their parents; but the parents—except to a limited extent in the case of man—are unable to assist in the protection of the young against infectious disease.

The cycle of greatest kinetic energy for physiologic ends is the period of reproduction. In the female especially there is a cycle of increasing activity just prior to her development into the procreative state. During this time secondary sexual characters are developed—the pelvis expands, the ovaries and the uterus grow rapidly, the mammary glands develop. Again in this period of increasing speed in the expenditure of energy we find the thyroid, the suprarenal and the hypophysis also in rapid growth. Without the normal development of the ovary, the thyroid and the hypophysis, neither the male nor the female can develop the secondary sexual characters, nor do they develop sexual desire nor show seasonal cycles of activity, nor can they procreate. The secondary sexual characters—sexual desire, fertility—may be developed at will—for example, by feeding thyroid products from alien species to the individual deprived of the thyroid.

At the close of the childbearing period there is a permanent diminution of the speed of energy discharge, for energy is no longer needed as it was for the self-preservation of the offspring before adolescence, and for the propagation of the species during the procreative period. Unless other factors intervene this reduction in speed is progressive until senescent death. The diminished size of the thyroid of the aged bears testimony to the part the activating organs bear in the general decline.

We have now referred to variations in the rate of discharge of energy in different species; in individuals of the same species; in cycles in the same individual—such as the seasons of food supply; the periods of wakefulness and of sleep; the procreative period—and we have spoken of those variations caused artificially by thyroid feeding.

Thus far we have referred to the conversion for adaptive purposes of latent into kinetic energy in muscular and in procreative action. We shall now consider the conversion of latent into kinetic energy in the production of heat—we use the terms heat and muscular action in the popular sense, though physicists use them to designate one and the same kind of energy. The question which arises at once is this: Is there one mechanism for the conversion of latent energy into heat and another mechanism for its conversion into muscular action? What is the adaptive advantage of fever in infection?

The Purpose and the Mechanism of Heat Production in Infections.

Vaughn has shown that the presence in the body of any alien proteid causes an increased production of heat, and that there is no difference between the production of fever by foreign proteids and by infections. Before the day of the hypodermic needle and of experimental medicine, the foreign proteids found in the body outside the alimentary tract were brought in by invading micro-organisms. Such organisms interfered with and destroyed the host. The body, therefore, was forced to evolve a means of protection against these hostile organisms. The increased metabolism and fever in infection might operate as a protection in two ways: the increased fever by interfering with bacterial growth, and the increased metabolism by breaking up the bacteria. Bacteriologists have taught us that bacteria grow best at the normal temperature of the body, hence fever would interfere with bacterial growth. With each rise of one degree centigrade the chemical activity of the body is increased ten per cent. In acute infections there is aversion to food and frequently there is vomiting. In fever, then, we have a diminished intake of energy, but an increased output of energy—hence the available potential energy in the body is rapidly consumed. This may be an adaptation for the purpose of breaking up the foreign proteid molecules composing the bacteria. Thus the body may be purified by chemical combustion so furious that frequently the host itself is destroyed. The problem of immunity is not considered here.

As to the mechanism which produces fever, we postulate that it is the same mechanism as that which produces muscular activity. Muscular activity is produced by the conversion of latent energy into motion, and fever is produced largely in the muscles by the conversion of latent energy into heat. We should, therefore, find similar changes in the brain, the suprarenals, the thyroid and the liver, whatever may be the purpose of the conversion of energy—running, fighting, emotion or infection.

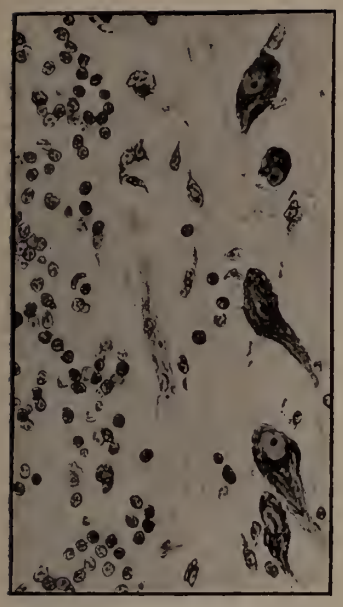
As a result of excessive activity in fevers, in infections, in emotion, in physical exertion—we shall first present experimental and clinical evidence tending to show what part is played by the brain in the production of both muscular and febrile action, and later we shall discuss the part played by the suprarenal, the thyroid and the liver.

Histologic Changes in the Brain Cells in Relation to the Maintenance of Consciousness and to the Production of the Emotions, Muscular Activity and Fever.

We have studied the brain cells in human cases of fever, and in animals after prolonged insomnia, after the injection of the toxins of gonococci, of streptococci, of staphylococci and of colon, tetanus, diphtheria and typhoid bacilli; and after the injection of foreign proteids, of indol and skatol, of leucin and of peptones. We have studied the brains of animals which had been activated in varying degrees up to the point of complete exhaustion by running, by fighting, by rage and fear, by physical injury and by the injection of strychnia. We have studied the brains of salmon at the mouth of the Columbia River and at its headwater (Fig. 1); the brains of electric fish, the storage batteries of which had been partially discharged, and of those the batteries of which had been completely discharged (Fig. 2); the brains of woodchucks in hibernation and after fighting; the brains of humans who had died from anemia resulting from hemorrhage, from acidosis, from eclampsia, from cancer and from other chronic diseases. We have studied also the brains of animals after the excision of the suprarenals, of the pancreas, and of the liver.

In every instance the loss of vitality—that is, the loss of the normal power to convert potential into kinetic energy—was accompanied by physical changes in the brain-cells. (Figs. 3 and 4.) The converse was also true—that is, the brain-cells of animals with normal vital power showed no histologic changes. The changes in the brain-cells were identical whatever the cause. The crucial question then becomes: Are these constant changes in the brain-cells the result of

Fig 1.



Male salmon from ocean. Area from cerebellum.

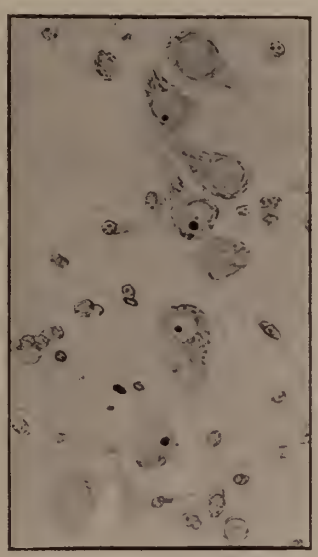
Male salmon from up the river. Area from cerebellum.

Exhaustion of Brain Cells of Salmon Caused by Expenditure of Energy in Swimming from the Ocean to the Head Waters of Columbia River.

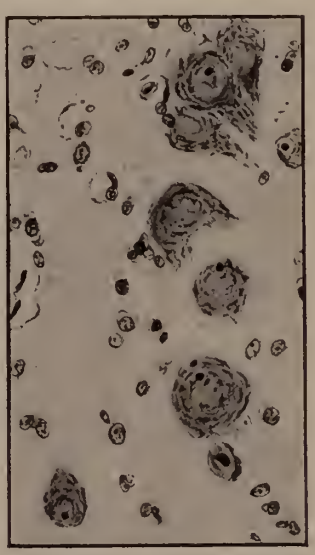
work done by the brain-cells in running, fighting, in emotion, in fever? In other words, does the brain perform a definite rôle in the conversion of latent energy into fever or into muscular action; or are the brain-cell changes caused by the chemical products of metabolism? Happily this crucial question was definitely answered by the following experiment: The circulations of two dogs were crossed in such a manner that the circulation of the head of one dog was anastomosed with the circulation of the body of another dog and vice versa. (Fig. 5.) A cord encircled the neck so firmly that the vertebral and anastomosing circulation was blocked. If the brain-cell changes were due to metabolic products, then when the body of dog "A" was injured, the brain of dog "A" would be normal and the brain of dog "B" would show changes. Our experiments showed brain-cell changes in the brain of the dog injured and no changes in the brain of the uninjured dog.

The injection of adrenalin causes striking brain-cell changes—first, a hyperchromatism, then a chromatolysis. Now if adrenalin caused these changes merely as a metabolic phenomenon and not as a "work" phenomenon, then the injection of adrenalin in the carotid artery of a crossed circulation dog would cause no change in its circulation and its respiration, since the brain thus injected is in exclusive vascular connection with the body of another dog. In our experiment the blood-pressures of both dogs were recorded on a drum when adrenalin was injected into the common carotid. The adrenalin caused a rise in blood-pressure, an increase in the force of cardiac contraction, increase in respiration, and a characteristic adrenalin rise in the blood-pressure of both dogs. The rise was seen first in the dog whose brain alone received adrenalin and about a minute later in the dog whose body only received adrenalin. (Fig. 6.) Histologic examinations of the brains of both dogs showed marked hyperchromatism in the brain receiving adrenalin, while the brain receiving no adrenalin showed no change. Here is a clear cut observation on the action of adrenalin on the brain—and both the functional and the histologic tests showed that adrenalin causes increased brain action. The significance of this affinity of the

Fig. 2.



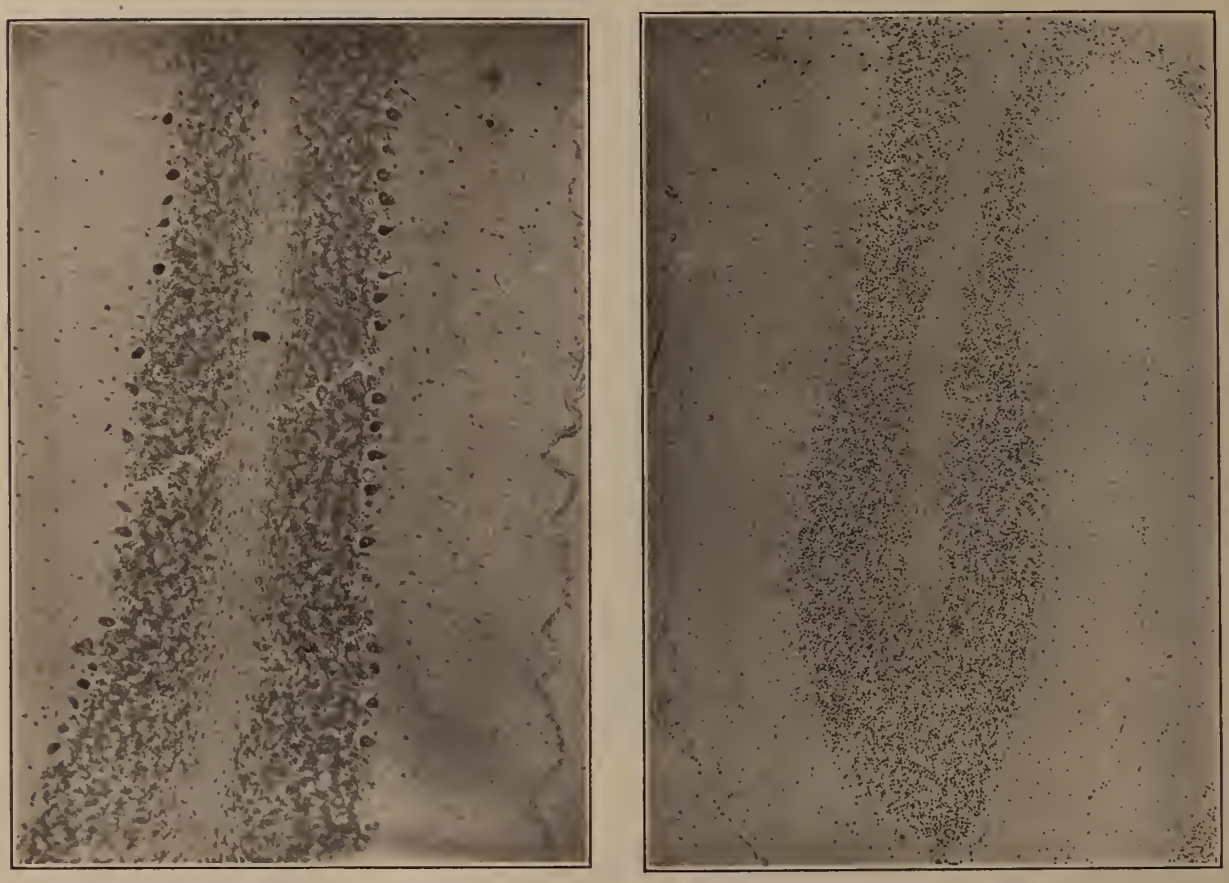
Area from cerebellum. Electric Fish. Exhausted.



Area from cerebellum. Electric Fish. Normal.

Exhaustion of Brain Cells of Electric Fish, Caused by Expenditure of Energy in Making Electric Discharges.

Fig. 3.



(A)
Section of Normal Cerebellum of Rabbit (Magnification x 100).

(B)
Section of Cerebellum of Rabbit After Insomnia—109 Hours (Magnification x 100).

Compare the well-stained, clearly-defined Purkinje cells in (A) with the faint traces of the Purkinje cells which are barely visible in (B).

brain for adrenalin begins to be seen when I call attention to the following striking facts:

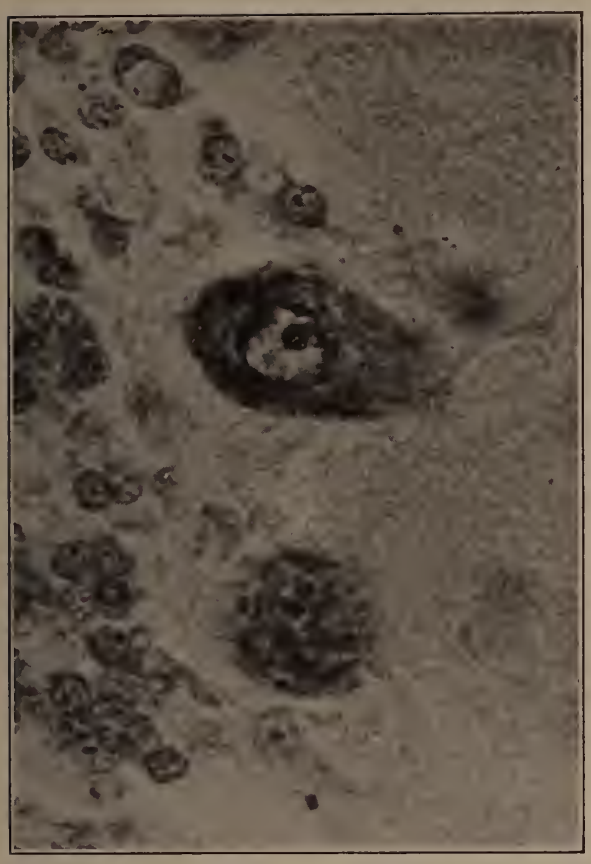
1. Adrenalin alone causes hyperchromatism followed by chromatolysis, and in overdosage causes the destruction of some brain-cells.

2. When the suprarenal glands are both excised and no other factor is introduced, the Nissl substance progressively disappears from the brain cells until death. This far-reaching point will be taken up later.

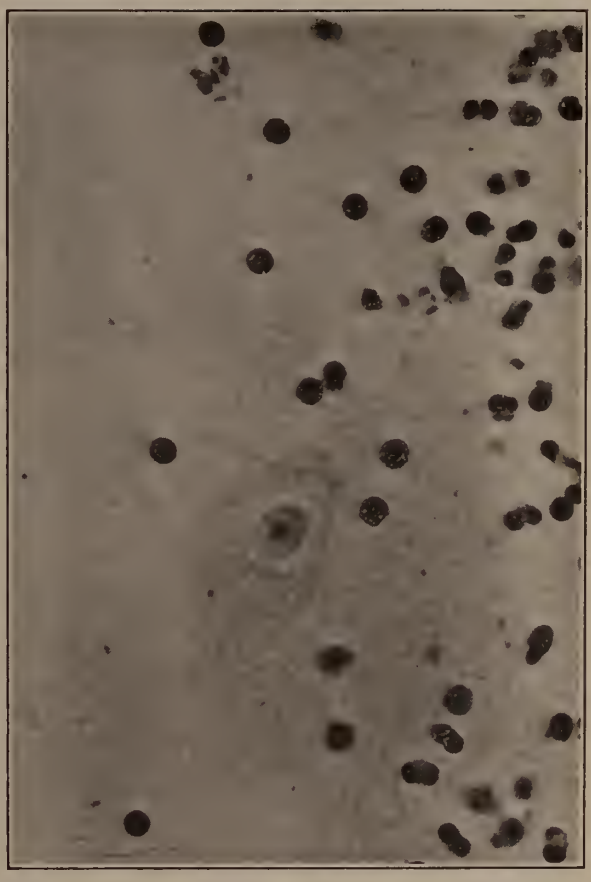
Here our purpose is to discuss the cause of the brain-cell changes. We have seen that in crossed brain and body circulation trauma causes changes in the cells of the brain which is disconnected from the traumatized body by its circulation, but which is connected with the traumatized body by the nervous system. We have seen that adrenalin causes activation of the body connected with its brain by the nervous system, and histologic changes in the brain acted on directly by the adrenalin, but we found no brain-cell changes in the other brain through which the products of metabolism have circulated.

In the foregoing we find direct evidence that the brain-cell changes are not due to the products of metabolism. We shall now present evidence to show that brain-cell changes are "work" changes. What work? We postulate that it is the work by which the energy stored in the brain-cells is converted into electricity or some other form of transmissible energy which then activates certain glands and muscles, thus converting latent energy into heat and motion. It has chanced that certain other studies have given an analogous and convincing proof of this postulate. In the electric fish a part of the muscular mechanism is replaced by a specialized structure for storing and discharging electricity. We found "work" changes in the brain-cells of electric fish after all their electricity had been rapidly discharged. We found further that electric fish could not discharge their electricity when under anesthesia, and clinically we know that under deep morphia narcosis, and under anesthesia, the production both of heat and of muscular action is hindered. The action of morphia in lessening fever production is probably the result of its depressing influence of the brain-cells, because of which a diminished amount of their potential energy is converted into electricity and a di-

FIG. 4.



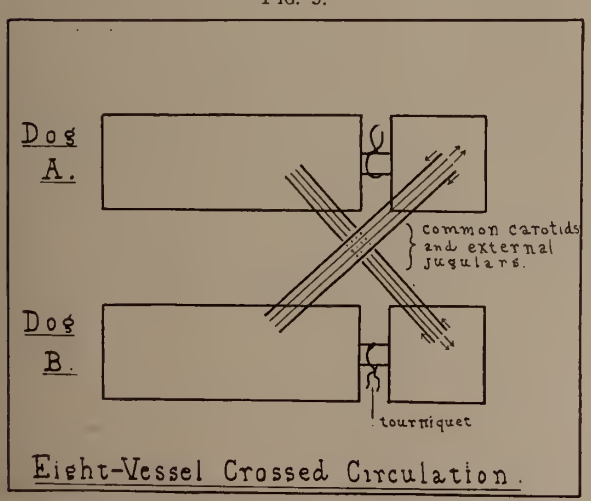
(A)
SECTION OF NORMAL CEREBELLUM OF RABBIT (MAGNIFICATION X 1600).



(B)
SECTION OF CEREBELLUM OF RABBIT AFTER INSOMNIA—109 HOURS (MAGNIFICATION X 1600).

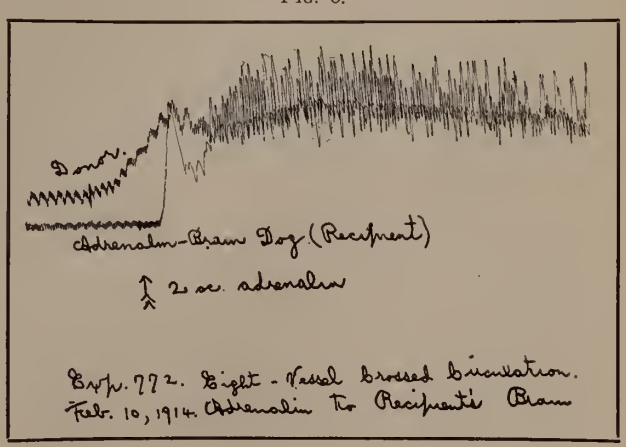
Note the disappearance of the cell membrane and the faint nucleus and nucleolus in (B) in the only Purkinje cell in focus.

FIG. 5.



Schematic drawing, showing course of blood streams of two dogs with eight-vessel crossed circulation.

FIG. 6.



Blood pressure tracing demonstrating that in spite of fact that blood of dog A passed through brain of dog B, yet brain of dog A received the stimulation caused by injection of adrenalin into blood of dog A.

minished electric discharge from the brain to the muscles should diminish heat production proportionally. We found by experiment that under deep morphinization brain-cell changes due to toxins could be largely prevented; in human patients deep morphinization diminishes the production of muscular action and of fever, and as we shall see later conserves life when it is threatened by acute infections. The contribution of the brain-cells to the production of heat is either the result of the direct conversion of their stored energy into heat, or of the conversion of their latent energy into electricity or a similar force, which in turn causes certain glands and muscles to convert latent energy into heat.

A further support to the postulate that the brain-cells contribute to the production of fever by sending impulses to the muscles is found in the effect of muscular exertion, or of other forms of motor stimulation in the presence of a fever-producing infection. Under such circumstances muscular exertion causes additional fever, and causes also added but identical changes in the brain-cells. Thyroid extract and iodin have the same effect as muscular exertion and infection in the production of fever and the production of brain-cell changes. All of this evidence is a strong argument in favor of the theory that certain constituents of the brain-cells are consumed in the work performed by the brain in the production of fever.

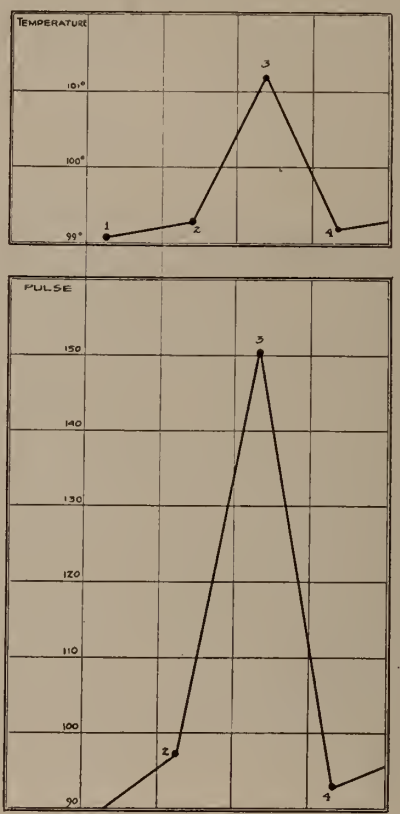
That the stimulation of the brain-cells without gross activity of the skeletal muscles and without infection can produce heat is shown as follows:

(*a*) Fever is produced when animals are subjected to fear without any consequent exertion of the skeletal muscles.

(*b*) The temperature of the anxious friends of patients will rise while they await the outcome of an operation. (Fig. 7.)

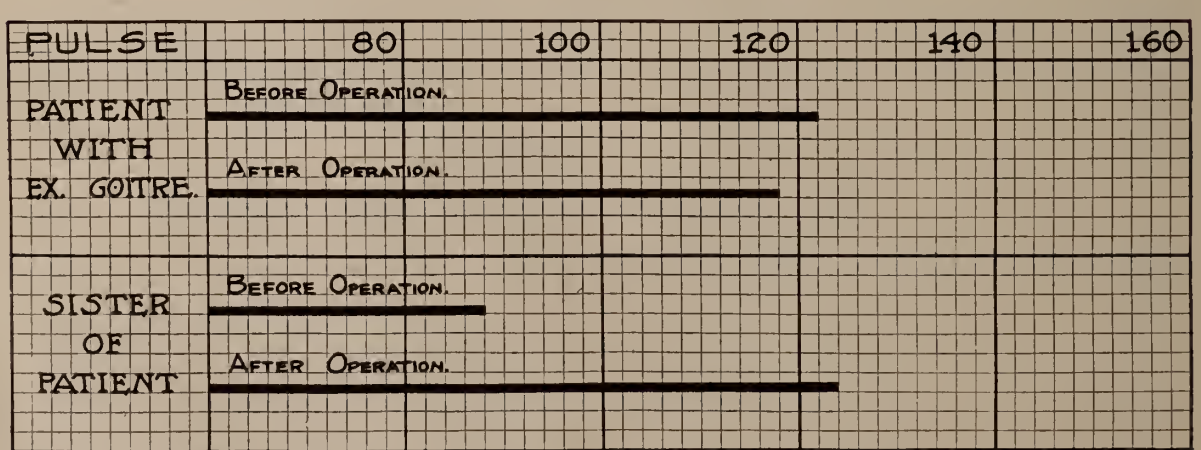
(*c*) The temperature of patients will rise as a result of the mere anticipation of a surgical operation. (Fig. 8.)

FIG. 8.



The patient, a foreigner, was brought to the operating room from the accident ward. Pulse and temperature normal. When he found himself in the operating room he was greatly disturbed. It was impossible to make him understand that his leg was not to be amputated but only a plaster cast applied. Under this stimulus his pulse rose to 150, and he soon developed a temperature of 101.2 F.

FIG. 7.



The patient's brain received neither traumatic nor psychic stimuli from the time she was anesthetized in bed until she returned again from the operating room. There was no increase in the pulse rate at the end of the operation. The sister of the patient knew of this serious operation. While waiting for the patient's return from the operating room her pulse rate rose to 124.

(*d*) There are innumerable clinical observations as to the effect of emotional excitation on the temperature of patients. A rise of a degree or more is a common result of a visit from a tactless friend. There is a traditional Sunday increase of temperature in hospital wards. Now the visitor does not bring and administer more infection to the patient to cause this rise, and the rise of temperature occurs even if the patient does not make the least muscular exertion as a result of the visit. I observed an average increase of one and one-eighth degrees of temperature in a ward of fifteen children as a result of a Fourth of July celebration.

Is the contribution of the brain to the production of heat due to the conversion of latent energy directly into heat, or does the brain produce heat principally by converting its latent energy into electricity or some similar form of transmissible energy which through nerve connections stimulates other organs and tissues, which in turn convert their stores of latent energy into heat?

According to Starling, when the connection between the brain and the muscles of an animal is severed by curare, by anesthetics, by the division of the cord and nerves, then the heat-producing power of the animal so modified is on a level with that of cold-blooded animals. With cold the temperature falls, with heat it rises. Such an animal has no more control over the conversion of latent energy into heat than it has over the conversion of latent energy into motion.

Electric stimulation done over a period of time causes brain-cell changes, and electric stimulation of muscles causes rise in temperature.

Summary.

In our crossed circulation experiments we found that the brain-cell changes were not due to waste products or to metabolic poisons. We found that in the production both of muscular action and of fever there were brain-cell changes which showed a quantitative relation to the temperature changes or to the muscular work done. We observed that under deep morphinization the febrile response or the muscular work done was either diminished or eliminated and that the brain-cell changes were correspondingly diminished or eliminated. We found also that brain-cell changes and muscular work followed electric stimulation alone. I conclude, therefore, that the brain-cell changes are work changes.

We shall next consider other organs of the kinetic system in their relation to muscular activity, to emotion, to consciousness, to sleep, to hibernation and to heat production.

The Suprarenal Gland.

In our extensive study of the brain in its relation to the production of energy and consequent exhaustion as a result of fear and rage; as a result of the injection of foreign proteids, of bacterial toxins and of strychnin; as a result of anaphylaxis; of the injection of thyroid extract, of adrenalin and of morphin; we found that with the exception of morphin each of these agents produced identical changes in the brain cells. As we believed that the suprarenal glands are intimately associated with the brain in its activities, we concluded that the suprarenals also must have been affected by each of these agents. To prove this relation, we administered the foregoing stimuli to animals and studied the effects upon the suprarenal glands by functional, histological and surgical methods. The functional tests were made by Cannon's method and by a study of the H-ion concentration.

Functional Study of the Suprarenal Glands by Cannon's Method.

Our method of applying the Cannon test for adrenalin was as follows: (*a*) The blood of the animal was tested before the application of the stimulus. If this test was negative, then (*b*) the stimulus was applied and the blood again tested. If this test was negative, a small amount of adrenalin was added. If a positive reaction was then given, the negative result was accepted as conclusive. (*c*) If the control test was negative, then the stimulus was given. If the blood after stimulation gave a positive result for adrenalin, a second test of the same animal's blood was made twenty-five minutes or more later. If the second test was negative, then the positive result of the first test was accepted as conclusive.

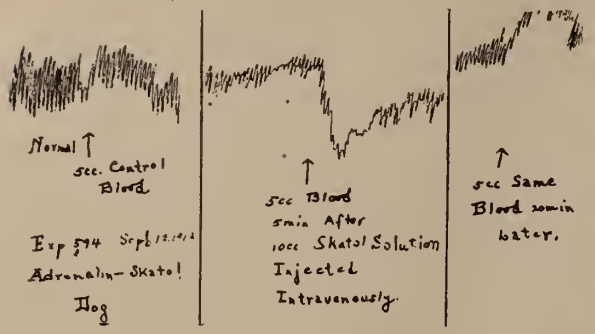
We have recorded sixty-six clear-cut experiments on dogs, which show that after fear and rage, after anaphylaxis, after injections of indol and skatol, of leucin and tyrosin, of the toxins of diphtheria and colon bacilli, of streptococci and staphylococci, of foreign proteids and of strychnin, the Cannon test for adrenalin was positive. The test was negative after trauma under anesthesia, and after intravenous injections of thyroid extract, of thyroglobulin and of the juices of various organs injected into the same animal from which the organs were taken. Placental extract gave a positive test. The test was sometimes positive after electric stimulation of the splanchnic nerves. On the other hand, if the nerve supply to the suprarenals had been previously divided, or if the suprarenals had been previously excised, then the Cannon test was negative, after the administration of each of the foregoing adequate stimuli. Blood taken directly from the suprarenal vein gave a positive result, but under deep morphinization the blood from the suprarenal vein was negative, and under deep morphinization the foregoing adequate stimuli were negative.

In brief, the agencies that in our brain-cell studies were found to cause hyperchromatism followed by chromatolysis, gave positive results in the Cannon test for adrenalin. (Fig. 9.) The one agent which was found to protect the brain against changes in the Nissl substance—morphin—gave a negative result in the Cannon test for

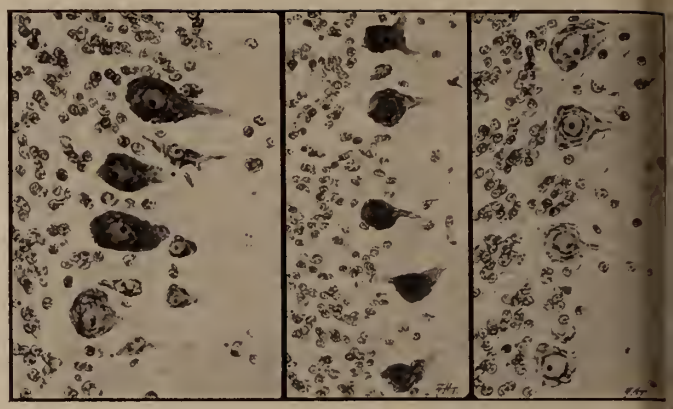
FIG. 9.

ACTIVATION OF THE KINETIC SYSTEM CAUSED BY INJECTIONS OF SKATOL.

These illustrations indicate the explanation of the general exhaustion shown in cases of auto-intoxication.



Cannon test for adrenalin demonstrating the increased output of adrenalin after injection of skatol.



Cells from normal cerebellum.

Cells from cerebellum, showing the immediate results of injection of skatol. Note the hyperchromatism.

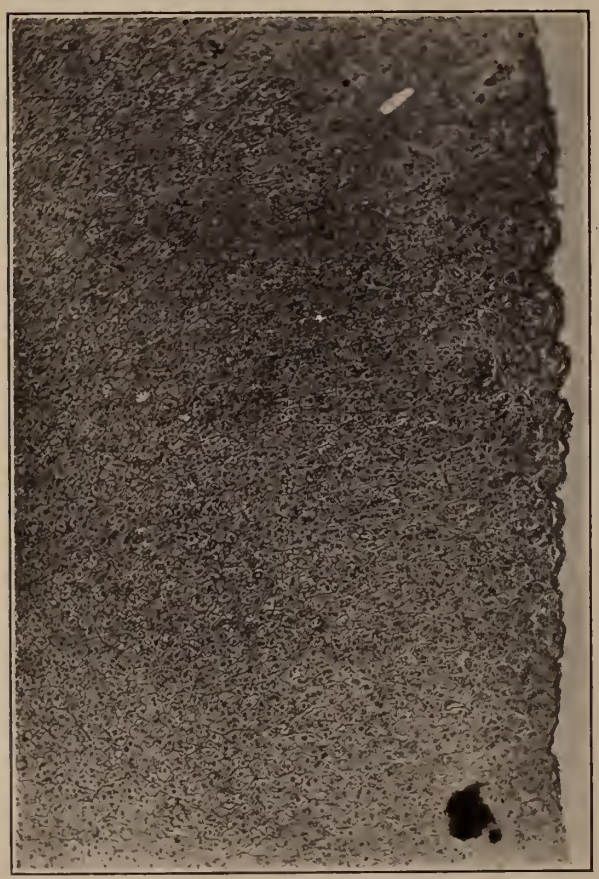
Cells from cerebellum, showing the late results of injection of skatol. Note the hypochromatism.

EFFECT ON BRAIN-CELLS OF SKATOL INJECTION.

adrenalin. After excision of the suprarenals, or after division of their nerve supply, all Cannon tests for adrenalin were negative.

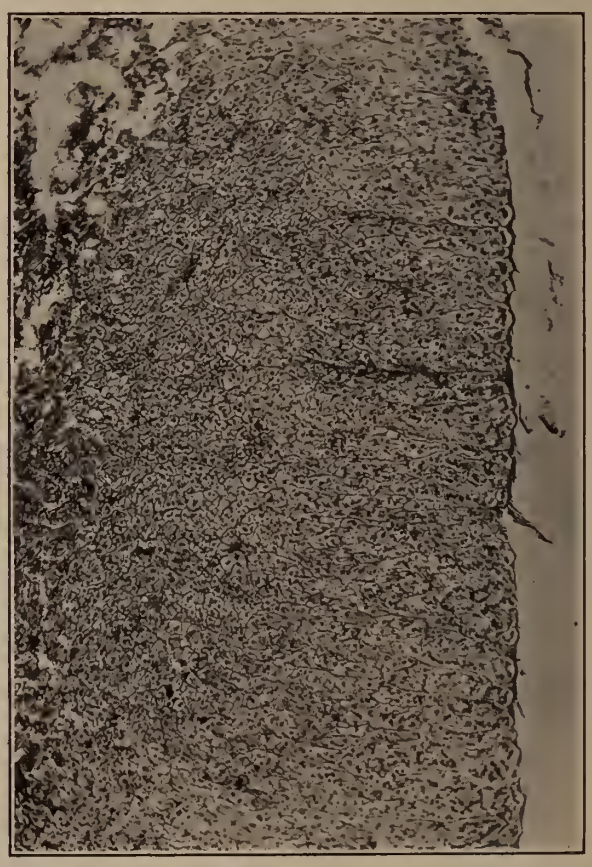
H-ion concentration tests showed that the blood in the suprarenal vein was less acid than that in the vena cava. Measured changes in adrenalin solution in ox serum caused variations in the H-ion concentration, thus establishing a new quantitative test for adrenalin. The H-ion concentration test showed a diminution of the acidity of blood from the suprarenal vein after the application of each of the adequate stimuli which gave a positive result to the Cannon test.

FIG. 10.



(A)

SECTION OF NORMAL SUPRARENAL OF RABBIT (MAGNIFICATION X 100).



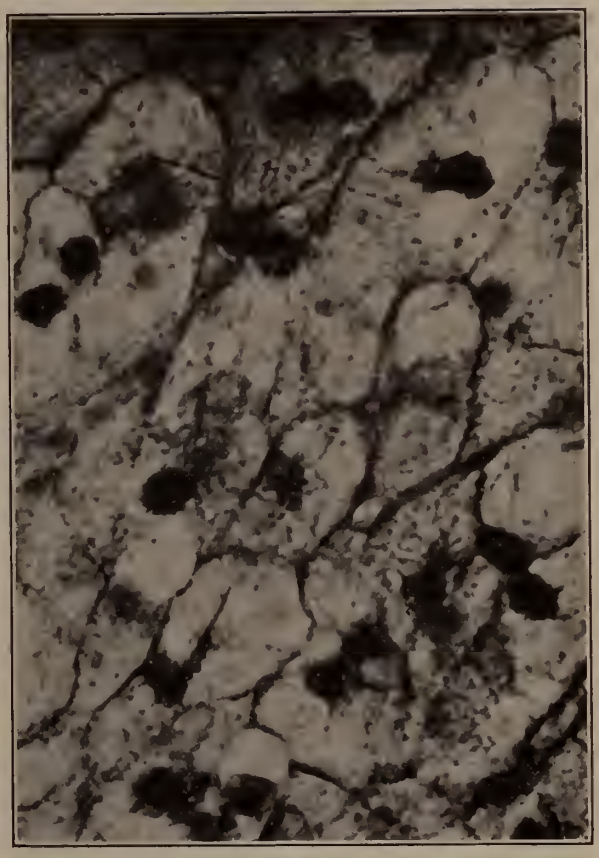
(B)

SECTION OF SUPRARENAL OF RABBIT AFTER INSOMNIA—109 HOURS (MAGNIFICATION X 100).

Note the vacuolated spaces and the general disappearance of cytoplasm in (B).

FIG. 11.

(A)
SECTION OF NORMAL SUPRARENAL OF RABBIT (MAGNIFICATION X 1600).



(B)
SECTION OF SUPRARENAL OF RABBIT AFTER INSOMNIA—109 HOURS (MAGNIFICATION X 1600).

Note the eccentric and irregularly shaped nuclei and the generally disorganized appearance of the cells in (B).

HISTOLOGIC STUDIES OF THE SUPRARENAL GLANDS.

Histologic studies of the suprarenal glands after the application of the adequate stimuli which gave positive results to the Cannon and the H-ion concentration tests for adrenalin are now in progress and thus far the histologic studies corroborate the functional tests.

In hibernating woodchucks, the cells of the adrenal cortex were vacuolated, and shrunken. In 100 hours of insomnia, in surgical shock, in strong fear, in exhaustion from fighting, in peptone injections, in acute infections, the suprarenal gland undergoes histological changes characteristic of exhaustion. (Figs. 10 and 11.) Alkalies cause suprarenal changes, but acids do not.

We have shown that brain and suprarenal activity go hand in hand—that is, that the suprarenal secretion activates the brain, and that the brain activates the suprarenals. The fundamental question which now arises is this: Are the brain and the suprarenals interdependent? A positive answer may be given to this question, for the evidence of the dependence of the brain upon the suprarenals is as clear as is the evidence of the dependence of the suprarenals upon the brain. (1) After excision of the suprarenals, the brain-cells undergo continuous histological and functional deterioration until death. During this time the brain progressively loses its power to respond to stimuli and there is also a progressive loss of muscular power and a diminution of body temperature. (2) In our crossed circulation experiments we found that adrenalin alone could cause increased brain activity, while histologically we know that adrenalin alone causes an increase of the Nissl substance. An animal both of whose suprarenals had been excised showed no hyperchromatism in the brain-cells after injection of strychnin, toxins, foreign proteids, etc. (3) When the suprarenal nerve supply is divided (Cannon-Elliott), then there is no increased suprarenal activity in response to adequate stimuli.

From these studies we are forced to conclude not only that the brain and suprarenals are interdependent, but that the brain is actually more dependent upon the suprarenals than the suprarenals upon the brain, since the brain deteriorates progressively to death without the suprarenals, while the suprarenal whose connection with the

brain has been broken by the division of its nerve supply will still produce sufficient adrenalin to support life.

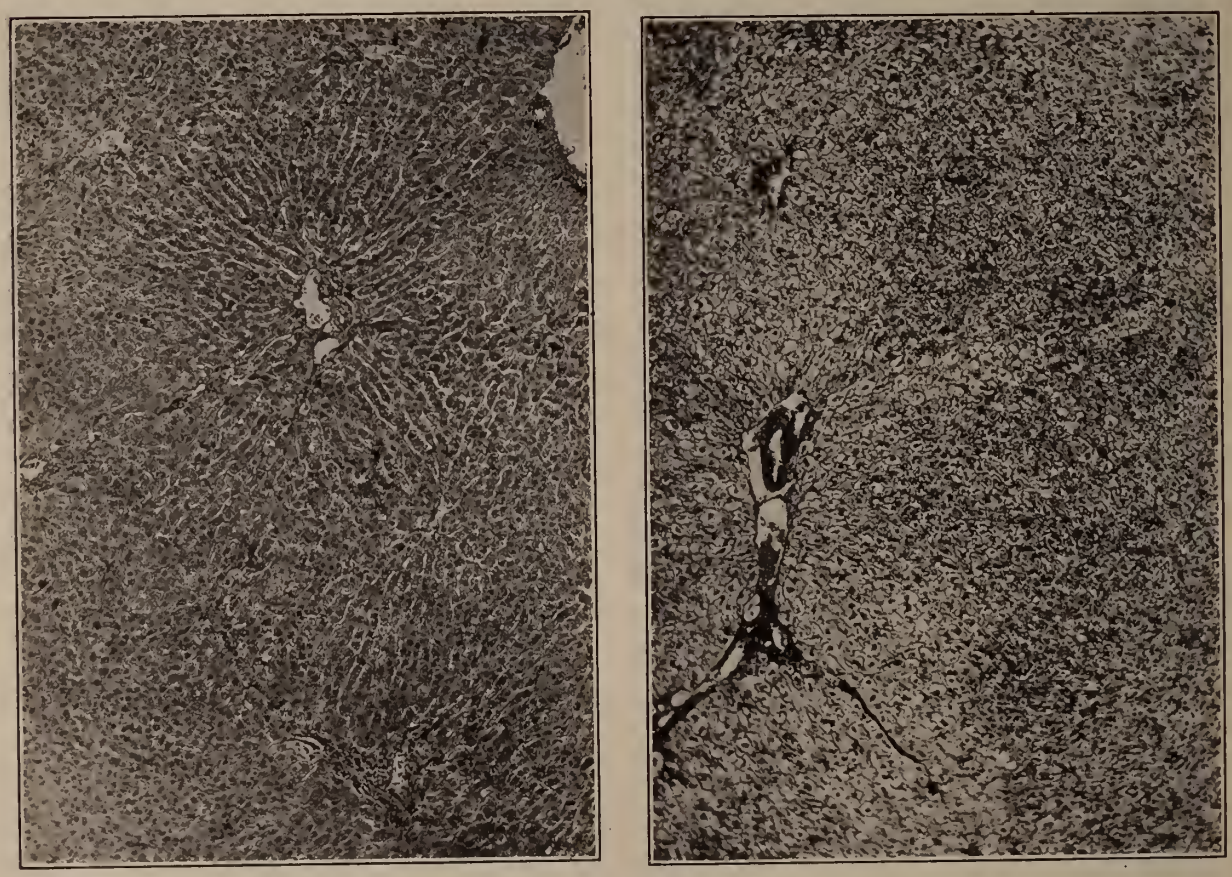
From the strong affinity of the brain-cells for adrenalin, which was manifested in our experiments, we may strongly suspect that the Nissl substance is a volatile, extremely unstable combination of certain elements of the brain-cells and adrenalin because the suprarenal glands alone do not take the Nissl stain, and the brain deprived of adrenalin does not take Nissl stain. The consumption of the Nissl substance in the brain-cells is lessened or prevented by morphin as is the output of adrenalin; and the consumption of the Nissl substance is also lessened or prevented by nitrous oxid. But morphin does not prevent the action of adrenalin injected into the circulation, hence the control of morphin over energy expenditure is exerted directly on the brain-cells. Apparently morphin and nitrous oxid both act through this interference with oxidation in the brain. We conclude, therefore, that within a certain range of acidity of the blood adrenalin can unite with the brain-cells only through the mediation of oxygen, and that the combination of adrenalin, oxygen, and certain brain-cell constituents causes the electric discharge that produces heat and motion. In this inter-relation of the brain and the suprarenals, we have what is perhaps the master key to the automatic action of the body. Through the special senses environmental stimuli reach the brain and cause it to liberate energy which in turn activates certain other organs and tissues, among which are the suprarenal glands. The increased output of adrenalin activates the brain to still greater activity, as a result of which again the entire sympathetic nervous system is further activated, as is manifested by increased heart action, more rapid respiration, raised blood-pressure, increased output of glycogen, increased power of the muscles to metabolize glucose, etc.

If this conclusion is well founded, we should find corroborative evidence in histologic changes in that great storehouse of potential energy, the liver, as a result of the application of each of the adequate stimuli which produced brain-cell and suprarenal changes.

The Liver.

Prolonged insomnia, prolonged physical exertion, infections, injections of toxins and of

Fig. 12.



(A)

Section of Normal Liver of Rabbit (Magnification x 100).

(B)

Section of Liver of Rabbit After Insomnia—109 Hours (Magnification x 100).

Note the general disappearance of the cytoplasm in (B).

Fig. 13.

(A)
Section of Normal Liver of Rabbit
(Magnification x 1600).

(B)
Section of Liver of Rabbit after Insomnia 109 Hours
(Magnification x 1600).

Note the disappearance of some nuclei in (B), and the misshapen and eccentric appearance of the rest.

strychnin, rage and fear, physical injury under anesthesia, in fact all of the adequate stimuli which affected the brain and the suprarenals, produced constant and identical histologic changes in the liver—the cells stained poorly, the cytoplasm was vacuolated, the nuclei were crenated, the cell membranes were irregular, the most marked changes occurring in the cells of the periphery of the lobules. (Figs. 12 and 13.) In prolonged insomnia the striking changes in the liver were repaired by one seance of sleep.

Are the histologic changes in the liver cells due to metabolism or toxic products or are they "work" changes incident to the conversion of latent into kinetic energy? Are the brain, suprarenals and liver interdependent? The following facts establish the answers to these queries:

(1) The duration of life after excision of the liver is about the same as after adrenalectomy—approximately eighteen hours.

(2) The amount of glycogen in the liver was diminished in all of the experiments showing brain-suprarenal activity; and when the histologic changes were repaired, the normal amount of glycogen was again found.

(3) In crossed circulation experiments changes were found in the liver of the animal whose brain received the stimulus.

From these premises we must consider that the brain, the suprarenals and the liver are mutually dependent on each other for the conversion of latent into kinetic energy. Each is a vital organ—each equally vital. It may be said that excision of the brain may apparently cause death in less time than excision of the liver or suprarenals, but this statement must be modified by our definition of death. If all the brain of an animal be removed by decapitation, its body may live on for at least eleven hours if its circulation be maintained by transfusion. An animal may live for weeks or months after excision of the cerebral hemispheres and the cerebellum, while an overtransfused animal may live many hours, for days even, after the destruction of the medulla. It is possible even that the brain actually is a less vital organ than either the suprarenals or the liver.

In our research to discover whether any other organs should be included with the brain, the suprarenals and the liver in this mutually interdependent relation, we hit upon an experiment which throws much light upon this problem.

Groups of rabbits were gently kept awake for 100 hours by relays of students,—an experiment which steadily withdrew energy but caused not the slightest physical or emotional injury to any of them; no drug, toxin or other agent was given to them; they were given sufficient food and drink. In brief, the internal and external environments of these animals were kept otherwise normal excepting for the gentle stimuli which ensured continued wakefulness. This protracted insomnia gradually exhausted the animals completely, some to the point of death, even. Some of the survivors were killed immediately after the expiration of 100 hours of wakefulness, others after varying intervals.,

Histological studies were made of every tissue and organ in the body. Three organs, the brain, the suprarenals and the liver, and these three only showed histologic changes. In these three organs the histologic changes were marked, and were almost wholly repaired by one seance of sleep. In each instance these histologic changes were identical with those seen after physical exertion, emotion, toxins, etc. It would appear, then, that these three organs take the stress of life—the brain is the battery, the suprarenals the oxydizer, and the liver the gasoline tank. The clear cut insomnia experiment corresponds precisely with our other brain-suprarenal observations.

With these three kinetic organs we may surely associate also the "furnace," the muscles, in which the energy provided by the brain, suprarenals and liver, plus oxygen, is fabricated into heat and motion.

Benedict in his monumental work on metabolism has demonstrated that in the normal state, at least, variations in the heart-beat parallel variations in metabolism. He and others have shown also that all energy of the body, whether evidenced by heat or by motion, is produced in the muscles. In the muscles then, we find the fourth vital link in the kinetic chain. The muscles move the body, circulate the blood, effect respiration, and govern the body temperature. They are the passive servants of the brain suprarenal-liver syndrome.

Neither the brain, the suprarenals, the liver nor the muscles, however, nor all of these together, has the power to change the rate of the expenditure of energy; to make possible the increased expenditure in adolescence, in pregnancy, in courting and mating, in infections. No one of these organs, nor all of them together, can act as a pacemaker or sensitizer. The brain acts immediately in response to the stimuli of the moment; the suprarenals respond instantly to the fickle brain and the effects of their actions are fleeting; the liver contains fuel only and cannot activate, and the muscles in turn act as the great furnace, in which the final transformation into available energy is made.

Another organ—the thyroid—has the special power of governing the *rate* of *discharge* of energy; in other words, the thyroid is the pacemaker. Unfortunately, the thyroid cannot be studied to advantage either functionally or histologically, for there is as yet no available test for thyroidism in the blood as there is for adrenalin, and thyroid activity is not attended by striking histologic changes. Therefore the only laboratory studies which have been satisfactory thus far are those by which the iodin content of the thyroid has been established. Iodin is stored in the colloid lacunæ of the thyroid and in combination with certain proteids is the active agent of the thyroid.

Beebe has shown that electrical stimulation of the nerve supply of the thyroid diminishes the amount of iodin which it contains and it is known that in the hyperactive thyroid in Graves' disease the iodin content is diminished. The meagerness of laboratory studies, however, is amply compensated by the observations which the surgeon has been able to make on a vast scale—observations which are as definite as are the results of laboratory experiments.

The Thyroid.

The brain-cells and the suprarenal glands are securely concealed from the eye of the clinician, hence the changes produced in them by different causes escape his notice, but the thyroid has always been closely scrutinized by him. The clinician knows that every one of the above mentioned causes of increased brain-cell, suprarenal, liver and muscle activity may cause an increase in the activity of both the normal or the enlarged thyroid; and he knows only too well that in a given case of exophthalmic goitre, the same stimuli which excite the brain, the suprarenals, the liver and the muscles to increased activity will also aggravate this disease.

The function of the thyroid in the kinetic chain is best evidenced, however, by its rôle in the production of fever. Fever results from the administration of thyroid extract alone in large doses. In the hyper-activity of the thyroid in exophthalmic goitre, one sees a marked tendency to fever; in severe cases there is daily fever. In fact, in Graves' disease we find displayed to an extraordinary degree an exaggeration of the whole action of the kinetic mechanism.

We have stated that in acute Graves' disease there is a tendency to the production of spontaneous fever, and that there is a magnified diurnal variation in temperature which is due to an increased output of energy in even the normal reactions producing consciousness. In Graves' disease there is, therefore, a state of intensified consciousness, which is associated with low brain thresholds to all stimuli—both to stimuli that cause muscular action and to stimuli that cause fever. The intensity of the kinetic discharge is seen in the constant fine tremor. It is evident that the thresholds of the brain have been sensitized. In this hypersensitization we find the following strong evidence as to the identity of the various mechanisms for the production of fever.

In the state of superlative sensitization which is seen in Graves' disease, we find that the stimuli that produce muscular movement, the stimuli that produce emotional phenomena and the stimuli that produce fever are as nearly as can be ascertained equally effective. Clinical evidence regarding this point is abundant, for in patients with Graves' disease we find that the three types of conversion of energy resulting from emotional stimulation, from nociceptor stimulation (pain) and from infection stimulation are, as nearly as can be judged, equally exaggerated. In the acute cases of Graves' disease the explosive conversion of latent energy into heat and motion is unexcelled by any other known normal or pathological phenomenon. Excessive thyroid secretion, as in thyrotoxicosis from functioning adenomata, and excessive thyroid feeding, cause all the phenomena of Graves' disease, except the exophthalmos and the emotional facies. Ligation of arteries, division of nerve supply and excision of part of the gland may reverse the foregoing picture and restore the normal condition. The patient notes the effect on the second day and often within a week is relatively quiescent. On the contrary if there is thyroid deficiency there is the opposite state, a reptilian sluggishness.

At will, then, through diminished, normal or excessive administration of thyroid secretion, we may produce an adynamic, a normal, or an excessively dynamic state. By the thyroid influence, the brain thresholds are lowered and life becomes exquisite; without its influence the brain becomes a globe of relatively inert substance. Excessive doses of iodin alone cause most of the symptoms of Graves' disease. The active constituent of the thyroid is iodin in a special proteid combination. This is stored in the colloidal spaces. Hence one would not expect to find changes in the cells of the thyroid gland as a result of increased activity unless it be prolonged.

We have thus far considered the normal rôles played by the brain, the suprarenals, the liver, the muscles and the thyroid in transforming latent into kinetic energy in the form of heat and motion as an adaptive response to environmental stimuli.

The argument may be strengthened, however, by the discussion of the effect of the impairment of any of these links in the kinetic chain upon the conversion of latent into kinetic energy.

Effect Upon the Output of Energy of Impaired or Lost Function of Each of the Several Links in the Kinetic Chain.

(1) *The Brain: Cerebral Softening.*—In cerebral softening we may find all the organs of the body comparatively healthy excepting the brain. As the brain is physically impaired it cannot normally stimulate other organs to the conversion of latent energy into heat or into motion, but on the contrary in these cases we find feeble muscular and intellectual power. I believe also we find that in patients with cerebral softening, infections such as pneumonia show a lower temperature range than in patients whose brains are normal.

(2) *The Suprarenals.*—In such destructive lesions of the suprarenal glands as Addison's disease one of the cardinal symptoms is a subnormal temperature and impaired muscular power. Animals on whom double adrenalectomy has been performed show a striking fall in temperature, muscular weakness—after adrenalectomy the animal may not be able to stand even—and progressive chromatolysis. The significance of the last will be pointed out later.

(3) *The Liver.*—When the function of the liver is impaired by tumors, cirrhosis, or degeneration of the liver itself, then the entire energy of the body is correspondingly diminished. This diminution of energy is evidenced by muscular and mental weakness, by diminished response and by gradual loss of efficiency which finally reaches the state of asthenia.

(4) *The Muscles.*—It has been observed clinically that if the muscles are impaired by long disuse, or by a disease such as myasthenia gravis, then the range of production of both heat and motion is below normal. This is in agreement with the experimental findings that anesthetics, curare or any break in the muscle-brain connection causes diminished muscular and heat production.

(5) *The Thyroid.*—In myxedema one of the cardinal symptoms is a persistently sub-normal temperature, and though prone to infection, subjects of myxedema show but feeble febrile response and readily succumb. This clinical observation is strikingly confirmed by laboratory observations; normal rabbits subjected to fear showed a rise in temperature of from one to three degrees, while two rabbits whose thyroids had been previously removed and who had then been subjected to fright showed much less febrile response. Myxedema subjects show a loss of physical and mental energy which is proportional to the lack of thyroid. Deficiency in any of the organs of the kinetic chain causes alike loss of heat, loss of muscular and emotional action, of mental power and of the power of combating infections—the negative evidence thus strongly supports the positive. By accumulating all the evidence we believe we are justified in associating the brain, the suprarenal, the thyroid, the muscles and the liver as vital links in the kinetic chain. Other organs play a rôle undoubtedly, though a minor one. If our conclusions are sound, then in the kinetic system we should find an explanation of many diseases, and having found an explanation, we may find new methods of combating them.

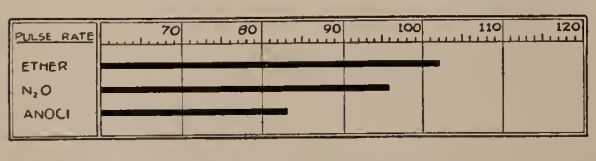
KINETIC DISEASES.

In the foregoing conclusions we find a simple explanation of certain diseases. When the kinetic system is driven at an overwhelming rate of speed—as by severe physical injury, by intense emotional excitation, by perforation of the intestines, by the pointing of an abscess into new territory, by the sudden onset of an infectious disease, by an overdose of strychnin, by a Marathon race, by a grilling fight, by foreign proteids, by anaphylaxis—the result of these acute overwhelming activations of the kinetic system is clinically designated shock, and according to the cause is called traumatic shock, toxic shock, anaphylactic shock, drug shock, etc.

The essential pathology of shock is identical whatever the cause. If, however, instead of an intense overwhelming activation, the kinetic system is continuously or intermittently overstimulated through a considerable period of time, as long as each of the links in the kinetic chain takes the strain equally the result will be excessive energy conversion, excessive work done; but usually, under stress, some one link in the chain is unable to take the strain and then the evenly balanced work of the several organs of the kinetic system is disturbed. If the brain cannot endure the strain, then neurasthenia, nerve exhaustion, or even insanity follows. If the thyroid cannot endure the strain it undergoes hyperplasia, which in turn may result in a colloid goitre or in exophthalmic goitre. If the suprarenals cannot endure the strain, cardiovascular disease may develop. If the liver cannot take the strain then death from acute acidosis may follow, or if the neutralizing effect of the liver is only partially lost, then the acidity may cause Bright's disease. Over-activation of the kinetic system may cause glycosuria and diabetes.

Identical physical and functional changes in the organs of the kinetic system may result from intense continued stimulation from any of the following causes, excessive physical labor, athletic exercise, worry or anxiety, intestinal auto-intoxication, chronic infections such as oral sepsis, tonsillitis and adenoids; chronic appendicitis, chronic cholecystitis, colitis, and skin infections; the excessive intake of proteid food (foreign proteid reaction); emotional strain, pregnancy, stress of business or professional life —all of which are known to be activators of the kinetic system.

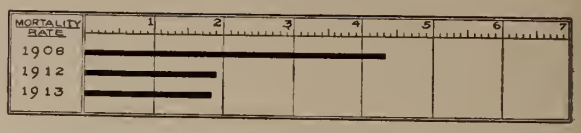
FIG. 14.



Each heavy line represents the average 5 P. M. pulse rate of ten consecutive miscellaneous cases during the first four days after operation.

COMPARATIVE CLINICAL RESULTS OF CONSECUTIVE OPERATIONS PERFORMED UNDER ETHER, UNDER NITROUS-OXID-OXYGEN AND UNDER ANOCI.

FIG. 15.



Comparison of the mortality rate of all operations performed at Lakeside Hospital by Dr. Lower, the author, and their Resident Staff during 1908—the year before the Anoci Technique was introduced—with the mortality rate of the last two years, 1912 and 1913.

From the foregoing statements we are able to understand the muscular weakness following fever; we can understand why the senile have neither muscular power nor strong febrile reaction; why long continued infections produce pathologic changes in the organs constituting the kinetic chain; why the same pathologic changes result from various forms of activation of the kinetic system. In this hypothesis we find a reason why cardiovascular disease may be caused by chronic infection, by auto-intoxication, by overwork, or by emotional excitation. We now see that the reason why we find so much difficulty in differentiating the numerous acute infections from each other is because they play upon the same kinetic chain. Our postulate harmonizes the pathological democracy of the kinetic organs, for it explains not only why in many diseases the pathological changes in these organs are identical, but why the same changes are seen as the result of emotional strain and overwork. We can thus understand how either emotional strain or acute or chronic infections may cause either exophthalmic goiter or cardiovascular disease; how chronic intestinal stasis with the resultant absorption of toxins may cause cardiovascular disease, neurasthenia, or goiter. Here is found an explanation of the phenomena of shock, whether the shock be the result of toxins, of infection, of foreign proteids, of anaphylaxis, of psychic stimuli, or of a surgical operation with its combination of both psychic and traumatic elements.

This conception of the kinetic system has stood a crucial test by making possible the shockless surgical operation. (Figs. 14 and 15.) It has offered a plausible explanation of the cause and the treatment of Graves' disease. Will this kinetic theory stand also the clinical test of controlling that protean disease bred in the midst of the stress of our present-day life? Present-day life, in which one must ever have one hand on the sword and the other on the throttle, is a constant stimulus of the kinetic system. The force of these kinetic stimuli may be lessened at the cerebral link by intelligent control—a protective control is empirically attained by many of the most successful men. The force of the kinetic stimuli may be broken at the thyroid link

by dividing the nerve supply, reducing the blood supply, or by partial excision; or if the suprarenals feel the strain, the stimulating force may be broken by dividing their nerve supply, reducing the blood supply, or by partial excision. No theory is worth more than its yield in practice, but already we have the shockless operation, the surgical treatment of Graves' disease, the control of shock and the acute infections by overwhelming morphinization.

Conclusions.

To become adapted to their environment animals are transformers of energy. This adaptation to environment is made by means of a system of organs evolved for the purpose of converting potential energy into heat and motion. The principal organs and tissues of this system are the brain, the suprarenals, the thyroid, the muscles and the liver. Each is a vital link—each plays its particular rôle and one cannot compensate for the other. A change in any link of the kinetic chain modifies proportionately the entire kinetic system, which is no stronger than its weakest link.

In this conception we find a possible explanation of many diseases—one which may point the way to new and more effective therapeutic measures than those now at our command.

QUARANTINE REQUIREMENTS PRESENTED TO THE LEGISLATURE.

By JOSEPH J. O'CONNELL, M.D.,

Health Officer, Port of New York.

THE attention of the Legislature is called to the recommendations contained in the Annual Report of this department for the year ending September 30, 1912.* Those recommendations present a comprehensive plan of physical improvements, based upon considerations of humanity, economy, and efficiency, and the importance of the commerce of the Port of New York with which it is the part of wisdom to deal as considerately as the necessity of protecting the public health will allow. The commerce of this port exceeds in volume the commerce of any other port in the world. Rude interference with its processes by the State must react disadvantageously upon the vast material interests of the city and State. A sure scientific search of the huge maritime commerce for those violently epidemic diseases which are historically attendant upon it, offers the least embarrassment and the least disturbance of the delicate adjustment of its multifarious and complex transactions. For such a sure and expeditious handling of the sanitary problems involved, the quarantine authorities should have a complete modern physical equipment.

* Reintroduced in 1913.

During the fiscal year ending September 30, 1913, the total imports of the United States amounted in value to $1,812,428,464, and the total exports of the United States amounted to $2,516,330,383. Of these the imports entered at the Port of New York amounted to $1,046,116,053, and the exports shipped at the Port of New York amounted to $925,426,749, so that of the commerce in commodities of the entire United States the percentage discharged and shipped at the Port of New York was 45.5 per cent. During the same period the total immigration of the United States amounted to 1,568,787 persons, of which 1,117,777 were entered at the Port of New York. It will thus be seen that the quarantine of this port examined 71.25 per cent of all the immigrants entering the United States during that period.

The following table, prepared at my request by the United States Department of Commerce, shows the movement of commercial values of the United States and the relationship thereto of such a movement at the Port of New York:

Imports and Exports into and from the United States, and at the Customs District of New York, from October 1, 1912, to September 30, 1913, Inclusive.

	Imports.	
	United States.	*New York.*
October	$178,127,978	$110,065,565
November	153,096,241	85,661,611
December	154,051,444	94,199,136
1913		
January	163,063,438	92,616,640
February	149,917,063	86,490,086
March	155,348,998	89,036,431
April	146,195,280	84,589,175
May	133,446,012	73,881,276
June	131,215,877	75,104,202
July	139,284,570	79,590,486
August	137,687,720	78,844,277
September	170,993,843	96,037,169
	$1,812,428,464	$1,046,116,053

	Exports.	
	United States.	*New York.*
October	$254,696,265	$76,908,550
November	277,959,691	82,919,590
December	250,315,807	78,461,092
1913		
January	227,033,220	83,096,876
February	193,992,942	74,512,700
March	187,374,711	84,214,871
April	199,815,538	77,497,861
May	194,598,244	79,804,347
June	163,404,916	68,125,500
July	160,990,778	67,773,977
August	187,909,020	77,631,498
September	218,239,251	74,479,787
	$2,516,330,383	$925,426,749

The following table showing the arrival by months of alien immigrants at all the ports of the United States in comparison with the arrival of alien immigrants at the Port of New York, was compiled from the monthly reports of the United States Bureau of Immgration:

1912	Total Immigration. United States.	Total Immigration. Port of New York.
October	130,125	97,261
November	109,479	79,098
December	88,833	62,876
1913		
January	56,253	37,099
February	78,957	50,753
March	120,740	90,911
April	177,322	127,628
May	167,496	128,369
June	200,891	136,285
July	157,310	108,743
August	145,134	104,998
September	136,247	93,756
Total	1,568,787	1,117,777

The improvements recommended in my last annual report, which were approved by the Advisory Board of this department and by the informed medical opinion of the city, involved, according to the judgment of the Committee of Inquiry, too great an immediate strain upon the financial resources of the State. Accordingly I have selected from that list of improvements those of which I believe the need is most urgent, and present them to your Honorable Body in the itemized recommendations which will follow, it being my hope that the financial condition of the State will allow the supplementing of the improvements now particularly urged by appropriations for the necessary improvements included in my recommendation of a year ago.

1. The boat service of this department was in a condition of extreme dilapidation at the beginning of my administration. The boat used for ferriage between the boarding station and the two islands of the department has narrowly escaped condemnation at the last three inspections of the Local Steamboat Inspection Service of the Federal Government, and is now in such a condition that I cannot much longer assume the responsibility of keeping it in the service. It was an old boat when it was purchased by the department. It is the only boat of the department of light draught, and is, therefore, the only boat the department can use for service to and from the islands, as such islands are constructed on a sand bar over which, at low tide, there is insufficient depth of water for the navigation of the other boats. It is proposed to condemn this dilapidated boat, whose upkeep is an excessive charge upon the General Expense Fund, and to construct for this special service a safe and commodious modern passenger and ferryboat, which can be used in the boarding service in an emergency, which shall have hospital accommodations for the detained sick, and which, by reason of its light draught, shall be servicable in the ferry service hereinbefore alluded to. One of the boarding boats is in a condition quite as deplorable as the ferryboat referred to, and is a source of continued expense to the department, by reason of the necessary repairs and replacements to its hull and machinery made under the direction of the Federal authorities. In the interest of economy, as well as safety and efficiency, this vessel would be condemned and sold, and a new boat constructed for boarding purposes to take its place. The remaining boats of the department have been recently overhauled and may be serviceable for some time yet.

2. The present administration building was poorly designed and does not give proper accommodation for the efficient administration of the department. At the present time the cost of supplies is greater than it should be, because of the fact that the department has only such storage facilities as I have been able to provide by the construction, with the department's own labor, of storesheds. It is proposed to construct a combination administration building and storeroom; the first floor to be used as a storeroom and office of the storeroom clerk, in order that there may be a proper check upon the receipt and business-like distribution of the department supplies. The second floor is planned to hold the general office of the department, and above this, on a gallery floor overlooking the general offices, will be the offices of the departmental heads and record rooms, with proper vaults for the safe storage of the department's valuable records, while in the two towers will be the telegraph offices and the wireless rooms, so necessary to the proper operation of the department's sanitary function.

3. This item provides for furniture for building already mentioned.

4. The present layout of the grounds is not desirable from either a sanitary standpoint or a standpoint of administrative efficiency. The present road now winds around a hill and is washed out by every storm. The constant application of oil is necessary in order to keep it from blowing away in clouds of dust in the summer time. The board walks must be completely replaced every year at a very considerable cost. It is proposed to straighten the road so that it shall divide the department reservation, the utilitarian buildings to be located on one side, and the residential buildings on the other. The new road is to be paved and sidewalked, so as to make it sanitary and inexpensive as to maintenance. The item of ten thousand dollars is made up as follows:

Sidewalk and Gutter	$1,500
Paving	6,500
Grading	2,000

5. The present water supply pipes at the reservation are so small as to make the danger from fire one deserving of serious consideration, and there is no large conduit which can act as a container of the various pipes, cables and wires necessary for the water supply and the illumination system on the grounds. The item for these improvements is made up as follows:

For the Installation of a Conduit	$5,000
For the Installation of Fire Hydrants that Store and Furnish Water Connections, Piping, etc.	2,000

For the Installation of Electrical Power and Illumination $2,000

6. Under authorization of the Legislature of 1912, a new dock has been constructed at the quarantine station. To make this fully useful it should be covered and should contain, in addition to a fire-proof storeroom for sulphur and inflammable materials, emergency quarters to be used by a night crew.

7. The Legislature of 1912 authorized the construction of a portion of the dock system planned for the boarding station. Exposure to rough weather does considerable damage to the boats of the service, and these boats should be moored, when not actively employed, in a protected basin. It is proposed, therefore, that a new dock shall be constructed to take the place of the present "L" dock, as the latter has become weakened and is in danger of collapse, and that the enclosed basin be so dredged so as to afford accommodation for the department's boats.

8. The two islands used by this department for quarantine purposes are in connection with Staten Island only by telephone. Hoffman Island is dependent for drinking water upon one artesian well with a capacity of 1,200 gallons per hour. Because of improper protection and drainage and the nature of the soil, there was contamination of the water supply during the cholera period of 1911, and the results attributed thereto were very serious while the possibilities were even more alarming. During the present year it was found necessary several times to clean out the reservoirs and tanks which this artesian well system necessitates, to protect the health of the inhabitants of the island. The quality of the water is at no time what might be desired. Swinburne Island is dependent for its potable water upon the rainfall collected from the roofs and treated for purification. It is necessary for the department to transport the water used on Swinburne Island for laundry and other general purposes from the quarantine station, and in times of severe storm or fog such transportation is a matter of considerable difficulty, while it is always a matter of expense and inconvenience. Until the present year, when connections were made for the utilization of salt water on a fire protection service, there was no water available for such a use. The necessity for an adequate supply of pure water for two such islands as these must be obvious. After consultation with the engineers of the Department of Water Supply, Gas and Electricity of the City of New York, I have come to the conclusion that the cheapest and most reliable supply of good water can be obtained only by a connection with the regular water system of the city. This involves the laying of a water conduit along the floor of the lower bay between the south shore of Staten Island and Hoffman Island, and the extension of a smaller main from Hoffman Island to Swinburne Island.

9. The severe criticism and absolute condemnation by the Fire Department of the City of New York of the illumination system at Hoffman and Swinburne Islands is fully justified. The illuminant used is gasoline vapor. This is not only dangerous in its generation, but it puts in jeopardy the lives of detained immigrants, and adds to the expense of the department by requiring the designation of special watchmen for the purpose of preventing such immigrants from tampering with the lights. The light itself is dim and uncertain. The cost of its maintenance is beyond all reason. For the illumination of the buildings on these two islands the annual expense for gasoline alone approximates two thousand dollars. A proper illumination of the islands is one of the most urgent of the department's needs. It is proposed to install dynamos, engines, and all other necessary equipment, on both of the islands. The plant on Swinburne Island, being small can be housed without additional construction, but for a plant adequate for the needs of Hoffman Island, it will be necessary to build a shelter. The installation of these plants will not only add to the comfort and convenience, as well as the safety of the inhabitants of the islands, but will supply power for general purposes and reduce greatly the annual cost.

10. The residential quarters for the administrative staff at Hoffman Island are at present located in an old building, separate from the hospital buildings, and are neither adequate nor in good condition. Their distance from the hospital is a serious disadvantage. The hospital itself occupies the second floor of one of the detention pavilions and the main exit consists of a wooden stairway which is unsafe and suggests alarming possibilities in case of fire. The arrangement noted does not fit in with the sanitary and administrative needs of the situation. It is proposed to erect a building, the central portion of which shall serve for residential and office purposes, and the right and left wings of which, connected with the central portion by means of corridors, shall be utilized for hospital purposes.

11. The wooden staircase leading from the hospital on the second floor of the detention pavilion at Hoffman Island is very old and highly combustible, and would be a veritable death trap in case of fire. Additional means of egress was provided for fire at some time in the past, but they were constructed of wood like the staircase, and would probably be more dangerous than no fire escape at all. All the buildings should be properly provided in this respect.

12. The present docks at Hoffman Island are in such a condition of dilapidation as to make it a matter of difficulty and some danger to take heavy freight. The coal dock in particular is so weak that only limited quantities of coal can be purchased for the island at any one time. The rip-rap has broken out through the piles at the regular boat dock, making landing of the department's boats dangerous.

13. Complaint was made in the report of the

investigation of the administration of this department by my predecessor, of the inhumanity of assembling detained immigrants for identification and segregation into groups, in an open court where, in their weakened condition, they were exposed to the inclemency of the weather. I have protested against the physical situation which makes the assembly under such conditions necessary, and I strongly urge that this item, providing for an assembly court enclosure, be allowed on humanitarian grounds. The enclosure will be so constructed as to serve other purpose in emergencies. It could be used as a dormitory in the event of the detention of a greater number of passengers than the pavilions could accommodate.

14. The remote situation of Hoffman Island and the difficulties which storm and fog interpose with regard to communications therewith at times, make it highly desirable that that quarantine island should have adequate storage facilities. Added to this consideration is one of the economical purchase and use of fresh supplies. It is proposed to meet this need by the construction of a storage and refrigerating plant provided for in this item.

15. The underground construction at Hoffman Island was originally installed without any proper plan and without any record being made of its situation. The consequence of this in times past has been very serious. The stoppage of a sewer during a cholera visitation entails results of the gravest character, and it is desirable not only that the drainage system shall be adequate and thoroughly safeguarded but that its location shall be accurately mapped. It is proposed, therefore, to instal an adequate and scientific drainage system, and to utilize the conduits of such a system for the necessary electrical installation of the island. In addition to this, measures should be taken at once to protect the sand fill of the island from wind action. Considerable of the area of the island has been scooped out, the sand being blown over the sea wall into the bay. It is proposed, therefore, to grade the island. The paving now on the island is cracked and broken so that there are many interstices in the assembly court in which pathogenic organisms may lodge. It is highly desirable that a new properly drained pavement shall be installed. This item will also provide for such a fencing as may be necessary for the segregation of detained contacts in proper groups.

16. The administrative residence and office building at Swinburne Island is very old and in a condition of such dilapidation that it is in need of repair continually. It is a wooden structure built in 1866 under the joint administration of John T. Hoffman and A. Oakey Hall as mayors of New York, and Samuel Booth and Martin Kalbfleisch as mayors of Brooklyn. It is proposed to replace it with a modern building, having office accommodations and residential quarters for the medical staff in the central wing, and separated quarters for male and female help in the other two wings, together with a storage plant. By such an improvement the value of the hospitals will be doubled as their use is now limited by the impossibility of providing living quarters for the help necessary to the utilization of the hospital wards to their full capacity.

17. The dilapidation of the docks at Swinburne Island is extreme. Only a few piles support the dock decks, while the other piles are swinging on their spikes, having rotted away at the base. This interferes with the delivery of coal and other heavy freight and offers certain dangers in relation to the docking of the department's boats.

18. Swinburne Island is used for the treatment of actual cases of quarantinable disease. It is, therefore, of extreme importance that the utmost care should be thoroughly utilized. It is proposed to construct a combination sterilization plant in one wing of the building, the remainder of which should be used for a morgue and autopsy room and should be attached to the crematory.

19. Erosion and wind action have done very considerable damage to Swinburne Island. Cavities have formed under the pavement which is broken down into them. This results in a dangerous condition and offers in an island of this kind sanitary objections which must be obvious. It is proposed to construct a new walk around the island, made on a proper foundation and properly drained. This item also provides for the ground improvements which are necessary for the protection of the island.

HEALTH OFFICER'S DEPARTMENT, STATE OF NEW YORK, QUARANTINE, S. I., N. Y.

1. For the construction and purchase of two passenger and boarding boats for the boat service, Department of the Health Officer of the Port of New York, two hundred thousand dollars.. $200,000

2. For the construction of a combination administration and storehouse building at the boarding station, Department of the Health Officer of the Port of New York, Rosebank, Staten Island, forty-five thousand dollars 45,000

3. For furnishing and equipping the offices, storerooms, record vaults, telegraph and wireless telegraph rooms of the new administration building, Department of the Health Officer of the Port of New York, Rosebank, Staten Island, five thousand dollars..... 5,000

4. For the laying out, regulating, grading, paving and sidewalking, and the construction and reconstruction of roadways and other ground improvements, at the boarding station, Department of the Health Officer of the Port of New York, Rosebank, Staten Island, ten thousand dollars..... 10,000

5. For the construction of a conduit to contain pipes, cables and wires used in the transmission of steam, water and electricity; for the installation of fire hydrants, with fresh and salt water connections and pipes and appurtenances, wires, cables and other electrical installation, at the boarding station, Department of the Health Officer of the Port of New York, Rosebank, Staten Island, nine thousand dollars.. $9,000

6. For the construction of a cover and the construction thereunder of storerooms for the storage of sulphur and inflammable materials, and such other rooms as may be necessary on the dock at the boarding station, Department of the Health Officer of the Port of New York, Rosebank, Staten Island, ten thousand dollars..... 10,000

7. For the construction of a new dock, the removal of an old dock, dredging of basins and the installation on said dock of coal pockets, buildings, etc., if such are considered necessary, at the boarding station, Department of the Health Office of the Port of New York, Rosebank, Staten Island, forty thousand dollars 40,000

8. For the construction of mains under the waters of New York Bay, between the south shore of Staten Island and Hoffman Island, and between Hoffman Island and Swinburne Island, for the transmission of water, and the installation of all conduits, pipes, hydrants necessary for the proper transmission and distribution of such water, Department of the Health Officer of the Port of New York, one hundred thousand dollars..... 100,000

9. For the installation of plants for the generation and distribution and utilization of electricity for light and power purposes, including all wiring and equipment at Swinburne and Hoffman Islands, and the construction of a building for the accommodation of one such plant at Hoffman Island, Department of the Health Officer of the Port of New York, twenty-five thousand dollars 25,000

10. For the construction of a combination administrative residence and hospital building at Hoffman Island, Department of the Health Officer of the Port of New York, one hundred and twenty-five thousand dollars..... 125,000

11. For the installation of fire escapes on the dormitories, residences, and hospital buildings at Hoffman Island, Department of the Health Officer of the Port of New York, five thousand dollars 5,000

12. For the construction of new docks, the removal of old docks, the dredging of basins and the construction of coal pockets at Hoffman Island, Department of the Health Officer of the Port of New York, fifty thousand dollars $50,000

13. For the construction of an assembly court enclosure for detained immigrants at Hoffman Island, Department of the Health Officer of the Port of New York, ten thousand dollars.. 10,000

14. For the construction of a storage and refrigerating plant and building at Hoffman Island, Department of the Health Officer of the Port of New York, thirty-five thousand dollars 35,000

15. For ground improvements, including grading, paving and repaving, laying and relaying of sidewalks, the installation of conduits, pipes and electrical installation, at Hoffman Island, Department of the Health Officer of the Port of New York, forty thousand dollars 40,000

16. For the construction of an administrative residence and storage building and the razing of the present administrative building at Swinburne Island, Department of the Health Officer of the Port of New York, ninety thousand dollars 90,000

17. For the construction of new docks, the removal of old docks, the dredging of basins and the construction of coal pockets at Swinburne Island, Department of the Health Officer of the Port of New York, forty-two thousand dollars 42,000

18. For the construction and equipment of a sterilization plant, morgue, and crematory at Swinburne Island, Department of the Health Officer of the Port of New York, fifteen thousand dollars 15,000

19. For ground improvements, including the grading and regrading of grounds, the pavement and repavement of walks, the installation of conduits, piping, wiring, and other electrical equipment at Swinburne Island, Department of the Health Officer of the Port of New York, ten thousand dollars 10,000

$886,000

Summary of contents of annual report of the Health Officer of the Port of New York, for the year ending September 30, 1913, submitted to the legislature January 7, 1914.

Number of vessels inspected	5,325
Number of passengers, thereon, including crew	1,876,810
Percentage of increase in vessels over previous year	9
Percentage of increase in number of persons inspected over previous year	24.5
New York's percentage of the immigration entered at all the ports of the United States and insular and territorial possessions thereof	71.25
Number of persons removed at quarantine	2,724
Number of cases treated at quarantine hospitals	604
Number of contacts held for observation	2,120
Number of deaths	10
Mortality rate in cases	1.6

Geopathographical table showing 400 ports in maritime commerce with New York (pp. 47 *et seq.*), their respective distances from New York, the number of vessels arrived during the year from each such port, and the presence at or absence from each such port during the year of cholera, bubonic plague and yellow fever.

Discussion of pathogenic possibilities of the recent Balkan War (pp. 56 *et seq.*) showing the introduction of cholera into Europe, its epidemicity in the Balkan states, Greece, Turkey and the Austro-Hungarian Empire, and its extension as far north as Vienna, and pointing out the danger involved therein of a contamination of the stream of immigration flowing from the near east to New York. During the year 215 vessels arrived from ports on the Adriatic and the Aegean Sea, and 172,085 persons of the nationalities affected by the cholera infection arrived in the United States.

Article on sulphur and sanitation (pp. 74 *et seq.*) describing the extent of fumigation performed for the destruction of rats as possible agents in the dissemination of plague, and other purposes. During the year 1,201 vessels were treated, 911 of these being fumigated in their holds and storerooms for the destruction of rats. In this work 559,193 pounds of sulphur were consumed. Experiments at quarantine and on board ship showing the efficacy of sulphur dioxide not only in the destruction of rodents but in the destruction of insect life and of germ life. The same experiments show the effect of sulphur dioxide upon various articles of merchandise.

Analysis of financial statement (pp. 124 *et seq.*) shows a net cash expenditure for the operation of the department of $96,078.60 and a net cost of operation of $93,823.91, or a reduction in the cash paid out by the state for the maintenance of the department of $43,455.22 below the corresponding figure of the previous year. Notwithstanding this reduced net cost of operation many necessary improvements to the plant were paid for out of the running expenses.

The recommendations for physical improvements (pp. 139 *et seq.*) for the consideration of the legislature generally repeat similar recommendations for the year ending September 30, 1912, but urge as immediately necessary the following:

(*a*) Construction of two passenger and boarding boats for the boat service.

(*b*) The construction of a combination administration and storehouse building at the boarding station.

(*c*) The construction of sanitary roadways, conduits, and other ground improvements at the boarding station.

(*d*) The construction of a storeroom cover on the new dock at the boarding station.

(*e*) The extension of the dock system so as to conform with the new dock plan.

(*f*) The construction of mains under the waters of New York Bay to supply Hoffman and Swinburne Islands with water.

(*g*) The installation of plants for the generation, distribution and utilization of electricity for light and power purposes at Hoffman and Swinburne Islands.

(*h*) The construction of a combination administrative residence and hospital building at Hoffman Island.

(*i*) The construction of new docks at Hoffman Island.

(*j*) The construction of an assembly court for detained immigrants at Hoffman Island.

(*k*) The construction of a storage and refrigerating plant and building at Hoffman Island and ground improvements.

(*l*) The construction of an administrative residence and storage building at Swinburne Island.

(*m*) The construction of new docks at Swinburne Island.

(*n*) The construction of a combination sterilization plant, morgue and crematory at Swinburne Island.

These extensive improvements call for an appropriation of $866,000. They are intended to replace the old hospital buildings and supplement the buildings still fit for use at Hoffman Island with modern hospital and detention buildings, to modernize the sanitary equipment on both islands and to replace the present dangerous system of illumination by gasoline vapor with a modern electric light and power system at both islands. Also to replace the present difficult and dangerous system of water supply by collection of rain water and boat transportation with an unlimited supply of water from the city's mains.

Medical Society of the State of New York

ANNUAL REPORTS

1913

REPORT OF THE PRESIDENT.

To the House of Delegates:

It has been the privilege of your President during the past year to better equip himself for his task by making official visits to the county societies, in order to glean a personal impression of the local conditions, the aspirations, and the needs of the individual units which collectively form the Medical Society of the State of New York.

Some seventy-five hundred miles have been thus traversed, and while all of the county societies have not been visited, yet, territorially, the various sections of the State have been fairly covered.

It is thus that your President, in presenting his suggestions and recommendations, desires to play the part of no mere echo of second-hand information, but rather to present his personal impressions, and endeavor to interpret the local needs and aspirations of our profession throughout the State; to suggest such changes as progress demands; and to promulgate those broad and comprehensive principles of fraternity in which sectional differences are submerged in the greater good of the larger number.

The constitutional limitations of your executive are such that the most a president can hope to accomplish is to take a broad and dispassionate survey, and be content to suggest the direction, if not the particular path, in which progress lies.

It is gratifying to note the activity and increase in membership in the county societies. With few exceptions the membership committees have done effective work, and some of the counties report that they have secured all of the desirable physicians in their section.

There is throughout the State a fine scientific spirit actuating the rank and file of our profession. No longer do the large cities monopolize men of capacity and scientific attainments; the smaller towns are well equipped with modern hospitals and laboratories, and their efficiency is guaranteed by men of broad culture and recognized ability.

The leadership of the great Empire State in Industries, Commerce, Arts, and Sciences need fear naught for its reputation in the men who practice the fine and beneficent art of healing.

The grave danger to an organization, like our State Society, which lacks the cohesion which accrues from frequent meetings and the sustained interest of the majority, is the tendency for its government to drift into the hands of a few; its policies to travel in well-worn grooves, and precedent to take the place of progress.

The function of the State Medical Society is not general, it is specific; it is to do for its individual units what they cannot do for themselves; it is primarily a protective function; its aim is to better safeguard the interests of its individual members, and thereby sustain the dignity of the medical profession in the various communities throughout the State.

To exercise this function aright requires able leadership—one that hears and heeds, and interprets the ever increasing needs in wise and timely measures; one that justifies itself by pointing to new and better paths before it is pushed from the old ones.

The State Society is for the benefit of the individual member, and as it solves his problem, so will it command his respect.

Our State Society serves the profession chiefly in four directions:

First.—Malpractice Defense. This is the Society's most important asset. The splendid protection which it affords our membership, the unqualified success which it has achieved, under the able direction of Mr. James Taylor Lewis, and its reputation for efficiency in accomplishing results have inspired a confidence which makes a powerful appeal to our membership. In this item the Society cannot afford to retrench—rather must it make provision for its increasing needs. To hamper its efficiency by a penurious policy would be a grave blunder. It is worthy of note, that your Finance Committee has met the demands by increasing the appropriation for the ensuing year.

Second.—The State Journal. It is gratifying to record the unqualified success of our State Journal, under the able editorship of Dr. John C. MacEvitt, in fine coöperation with the Publication Committee. The Society has succeeded in publishing a journal of real character and literary merit. It has refused all advertisements of a questionable character, and maintained the highest standards of medical journalism to its

financial detriment. The Journal reflects with dignity and distinction the recorded thought of our Society.

Furthermore it should be noted, that the publication of the Journal this year has been accomplished at a cost of over $1,400 less than the preceding year. This economy is worthy of commendation. Whether our Journal under different business management could maintain its high standard of ethical advertising and be made self-supporting is a question worthy of serious consideration. Our increasing budget may force this upon our attention in the near future.

Third.—The Directory. The value of the Directory *per se* is not debatable. It is an admirable publication. Its accuracy and convenience is unquestioned. It reflects credit upon the Society and the Committee under whose supervision it has been managed. Its value, however, as an asset of the Society, which during the past eight years has been the Society's chief item of expense, is open to serious criticism; not because of the expense, but because the expenditure does not confer an equal benefit upon each investor.

Viewed in its broadest aspect the Directory is a luxury for the minority, for which all are taxed, and at an expense far in excess of what our income warrants, or a fair sense of justice should demand.

Your President does not wish to depreciate the value of the Directory in the eyes of those who daily use it as a book of reference, nor conceal the dissatisfaction of the large majority who feel they are being taxed for that which they do not use, but to emphasize the wisdom of a readjustment of an appropriation which is out of all proportion to the benefits it confers.

Fourth.—Committee on Legislation. The efficient work of this Committee is worthy of high commendation. Its importance should be emphasized.

Among the chief obligations of the State Society to its members are:

The watchful supervision of all measures affecting public health.

The proper moulding of public opinion regarding the true worth of all such proposals.

Prompt information and elucidation of all proposed laws affecting the medical profession.

The guarantee of combined action in opposing vicious measures and informing stupid legislators.

In this direction the Society should be more liberal in its appropriation. It is spending money for things of less importance.

The strategic point in the Society's further progress lies in a wise and equitable appropriation of its finances. The future progress of the Society demands an increasing budget, out of all proportion to the expected increase in membership. The needs of the Society require a readjustment of its appropriations—proportioned according to the value of the asset for which the money is being spent. The Society's activities should be advanced in certain directions and curtailed in others, and the measure of their value should be their efficiency, which is nothing more than their net value to the membership as a whole. Your President is convinced that it would be futile and undesirable to submit these questions of future policy to unprofitable debate, when they can be satisfactorily disposed of only by calm and dispassionate consideration. Your President therefore makes the following:

Recommendation.—That a committee of five be appointed, representing the different sections of the State, of which no officer of the Society shall be a member.

That this committee shall consider the following subjects and report its conclusions at the next annual meeting:

First.—What is the relative value to our members of the State Society's three tangible assets, Malpractice Defense, the State Journal, and the Directory, and what is the equitable basis upon which appropriations should be made?

Second.—Can our State Journal of Medicine be made self-supporting under different management? Would the entire time of a Business Manager be more efficient than the sporadic efforts of a committee of professional men? In short, are the Journal's possibilities being fully realized, and its business conducted according to modern methods of efficiency?

Third.—Can our Malpractice Defense be made still further effective by the establishment of a legal bureau with a central office, counsel, and assistants, who shall not only conduct our Malpractice Defense, but assist in the prosecution of illegal practitioners throughout the State, especially in the towns where the local legal machinery is either impotent or totally inadequate to cope with the local conditions.

Fourth.—Is the Directory of sufficient importance to the Society, as a whole, to warrant the present appropriation. Would the best interests of the Society be better conserved by publishing the Directory biennially, or by limiting it to New York State, or by contracting with the American Medical Association to bind, in a single volume, that part of their Directory which refers to New York State, as is done by other States (notably Illinois).

Our Society will continue in processional, not by meeting from year to year and repeating the time-worn formulas of congratulations because of the smoothness of the old ways, but by a commendable discontent and ambition for the new ways, in which things are better done. For efficiency is the vital factor in every organization.

William Francis Campbell,
President

April 1, 1914.

REPORT OF THE SECRETARY.

To the House of Delegates:

In compliance with Section 3, Chapter VI, of the By-Laws, the Secretary submits the following report for the year ending December 31, 1913:

Membership, December 31, 1912..	6,854	
New members, 1913	394	
Reinstated members, 1913	262	
		7,510
Deaths	77	
Resignations	50	
Expelled	2	
Automatically dropped	1	
		130
		7,380
Dropped for non-payment of dues, December 31, 1913		303
		7,077
Elected after October 1, 1913, and credited to 1914		162
Membership, January 1, 1914.....		7,239
Membership, January 1, 1913.....		6,964
Membership, January 1, 1912.....		6,865
Membership, January 1, 1911.....		6,681

This table shows that the gain for the past year was larger than during any of the last four. The percentage of paid up membership is also larger than it has ever been. Both these showings are most gratifying and the prospect for increasing membership next year is extremely good.

The honor list of county societies, whose membership for 1913 is fully paid up, is as follows: Chautauqua, Clinton, Delaware, Dutchess, Essex, Lewis, Montgomery, Oneida, Orleans, St. Lawrence, Schoharie, Tompkins, Warren, Washington, Wayne and Yates.

If affords the Secretary great pleasure to report that during the past year the few missing volumes of the Transactions of the State Society have been secured and to-day the set is complete from the beginning to the present time. The volumes from 1807 to 1832 are not originals, but consist of a set reprinted by order of the Society in 1868. There are in the Library of the Academy of Medicine copies of the originals and there are several members of the Society who have complete sets of these originals and it would be a great addition to the Society's set of transactions if these could be willed to the Society by the present owners.

The pleasant task of the Secretary of collecting portraits of the ex-presidents has been completed, in so far as it has been possible to do so. There are hanging to-day, on the walls of the Society's rooms, pictures of 80 ex-presidents. The missing ones are as follows: 1807, W. McClelland; 1808 to 1810, N. Romayne; 1811, W. Wilson; 1832-1833, T. Spencer; 1845, J. Webster; 1850, A. Thompson; 1853, J. S. Sprague, making the total number of ex-presidents 87. Every effort has been made to secure the missing ones, every clue that might possibly lead to discovery of a picture has been followed up during the past three years, but without securing the desired portraits. The Secretary at the present time wants to thank all who have so generously assisted in this work. The same thanks are due to those who failed as to those who have succeeded, because they have used their best endeavors. Each portrait, upon its receipt, was properly acknowledged and the donor thanked.

In the summer, owing largely to the efforts of Dr. Banker, of Fort Edward, the Essex County Society has been re-organized, new By-Laws adopted and one of the oldest organizations of the State Society, is again in active existence and in a flourishing condition.

During the last part of the year the work of organizing the Bronx County Medical Society was undertaken and it bids fair to be a large and flourishing society. Although situated within the Greater City of New York, its boundaries are distinct and the divisions made rather clear by the Harlem River running from the Hudson to the East River, practically all the territory above it in the city limits, being in the county of the Bronx.

This Society will bring into the state organization many members, who, heretofore, have not joined because of the long distance from their homes and offices to the meeting place of the New York County Society, and the fact that their work, in many instances, was largely local and did not bring them below the Harlem River to any great extent.

There are in the State 62 counties and all have societies but two, Hamilton and Putnam. Both are very sparsely inhabited and it is questionable whether it would be advisable at the present time to endeavor to organize a society in these counties. The counties of Queens and Nassau are joined together in the Queens-Nassau Society, the former county being in the city of the Greater New York. The total number of county societies is 59.

As might be expected, the largest counties have the smallest percentage of members to the total number of physicians in the county. In the large cities there are many other societies to attract the physician, while in the small counties, the county society often is the only society and the percentage of membership in many is very large, and in some only the undesirable are non-members. But there are still a great many physicians throughout the State, both in the country and city, who do not belong to the County or State Society, and it is earnestly hoped that renewed efforts will be made during the coming year to induce them to join.

A request has been received from the Council on Health and Public Instruction of the American Medical Association asking the State Society to appoint a Committee on Health and Public

Instruction or modify existing committees so as to provide for an appropriate committee of the Society through which the work of the Council may be carried on in each State. The Society was also requested in organizing this Committee to consider the advisability of the appointment of one woman member in order that the Committee on Public Health Education Among Women might have a representative on each State Committee through which to carry on the work in each State.

The request of the Council that State Associations give this matter careful consideration, is due to the desire of the Council to carry on its work in each State as far as possible through the officers and committees of the State Association.

It would seem for the best interests of the Society that this work be placed in charge of the Committee on Public Health of the State Society, which properly should have the supervision over all such matters.

The Committee on Red Cross of the American Medical Association also desires the appointment of members throughout the State to represent it in any cases of emergency in which the Red Cross might act. This work could well be placed in charge of the Councilors, who could, if necessity arose, appoint sub-committees in the County Societies in which such work was to be done.

The Workmen's Compensation Commission will be appointed early in the year, before the meeting of the State organization, and it would seem desirable for the Society at its meeting to appoint a Committee of Conference of not less than five members representing different parts of the State to appear before this Commission from time to time to present the views of the profession upon the various questions that will come up for solution, especially those that will effect medical men.

The Secretary recommends that the Delegates to the American Medical Association be requested to favor the passage of a resolution calling upon the Trustees to pay the traveling expenses of the Delegates to the meetings of the American Medical Association, as is now done by the Trustees for their own expenses and those of the various Councils. The Delegates go, not only to represent the State, but to transact business for the entire organization, and it would only seem right and proper that these expenses should be paid.

The following Delegates were given certificates to other societies during the year:

International Medical Congress at London, George S. Munson, Albany, William B. DeGarmo, New York, Parker Syms, New York, Richard Kalish, New York, Edward D. Fisher, New York, Henry L. K. Shaw, Albany, and Emanuel de Marnay Baruch, New York, June, 1913. Vermont State Society, Miles E. Varney, Saratoga Springs, October 1913. Pennsylvania State Society, Louis Faugeres Bishop, New York, September 1913. British Medical Association, Parker Syms, Edward D. Fisher, New York, May or June, 1913.

Respectfully submitted,

WISNER R. TOWNSEND,
Secretary.

December 31, 1913.

REPORT OF THE COUNCIL.

To the House of Delegates:

The Council of the Medical Society of the State of New York begs leave to present the following report:

During the past year meetings have been held on the following dates:

May 1st, in Rochester. Minutes will be found in the NEW YORK STATE JOURNAL OF MEDICINE, Volume 13, No. 5, page 294.

May 16th, in New York City. Minutes will be found in Volume 13, No. 6, page 347.

December 5th, in New York City. Minutes will be found in Volume 14, No. 1, page 48.

The following resolutions, adopted by the Council at its meeting on December 5th, in regard to defense of members for alleged malpractice, will be presented to the House of Delegates for action:

First. Members shall not be entitled to malpractice defense if the acts in the suit for which they make application for defense were committed prior to their admission to membership in the State Society.

Second. Members who have been dropped for non-payment of dues, if reinstated shall not be entitled to malpractice defense for acts committed during the time they were not members of the Society.

Third. Active members of the Society desiring to avail themselves of the privileges of this act, shall make application therefor in writing to the Secretary of the Society, and it shall be shown to his satisfaction that they are members in good standing in the State Society. They shall also furnish the Secretary a complete and accurate statement of their connection with, and treatment of, persons upon which complaints against them are based, giving dates of attendance, names and residences of nurses and of other persons cognizant of facts and circumstances necessary to a clear and definite understanding of all matters in question, and shall furnish such other relevant information and execute such papers as may be required of them by the secretary or the attorney of the State Society.

Fourth. A member shall agree not to compromise any claim against him, nor to make settlement in any manner without the advice or consent of the Society given through its attorney.

Fifth. In the event that a member sued or threatened with suit shall, without the advice or consent of the attorney of the Society, determine to settle or compromise any claim against him, he shall reimburse the Society for the expenses incurred in undertaking his defense, and in de-

fault thereof, he shall be deprived of further privileges under this resolution.

Sixth. The Society shall not assume any responsibility for the payment of any sum agreed upon by arbitration in the settlement of claims, or awarded by court verdicts, or for making payments for any purpose whatsoever.

Seventh. This resolution shall take effect upon its approval by the Council and adoption by the House of Delegates of the Society.

REPORT OF THE COMMITTEE ON PRELIMINARY REQUIREMENTS FOR THE STUDY OF MEDICINE.

To the Council:

The Committee of those appointed with power to act on a communication from Dr. N. P. Colwell, Secretary of the Council on Medical Education of the American Medical Association, "requesting that the Medical Society of the State of New York endeavor to induce the Regents to raise the preliminary requirements for the study of medicine by having one year in college, or its equivalent, and by raising the number of preliminary counts," would respectfully report:

Careful investigation reveals the fact that Dr. Colwell was informed in October, 1913, that the Regents had no power to act in this matter, the law compelling them to carry out its provisions, which they had found to be faulty. This condition was thoroughly remedied in Senate bills No. 622 and 1462, February 23, 1914, as will be noted on page five, lines three to six; but these bills died. The Regents are anxious, but unable to remedy the matter on account of the law so that it would be useless to appeal to them.

Your Committee feels that it would be unwise at the present time for the Society to urge the Regents to attempt to change the law, on account of other important matters now pending, such as the antivivisection question, osteopathy, etc., etc.,

Your Committee would, therefore, advise that no action be taken at present, other than to instruct the Secretary of the Society to inform Dr. Colwell that, under the existing law, the Society could gain nothing by appealing to the Regents.

Respectfully submitted,

JOSHUA M. VANCOTT, M.D., *Chairman,*
LUZERNE COVILLE, M.D.,
ARTHUR G. BENNETT, M.D.

REPORT OF THE COMMITTEE ON AMERICAN MEDICAL DIRECTORY.

To the Council:

The Committee appointed to consider the question as to whether the Medical Directory could be published by the American Medical Association, take pleasure in submitting the following from the American Medical Association:

"Your letter of the 21st inst. was duly received. On your first proposition as to 'what it would cost to take New York State as you print it in your directory and publish same in a bound volume for us the same size as your present medical directory,' we would make the following estimate:

"8,000 copies as pages are now made up, trimmed to size of the American Medical Directory, to contain all New York data in the Fourth Edition, in addition to college key, printed on No. 1 M.F. stock, which would make about a 44-page book, side stitched, with glued paper cover..... $477.00

"You would probably want an alphabetical index. This, we estimate, would require about 40 pages, and would cost approximately $227.55

"If you should decide to give such a directory to your members it might be a good idea to consider the advisability of having it printed as a supplement to your Journal. You could send this out with one of your issues at 1 cent a pound, which would mean a considerable saving in postage.

"As to your second proposition, 'what it would cost if you set it up in a different size book, and the cost with paper and cloth binding,' I presume you have in mind a book similar in size and style to the one we printed for the Illinois Medical Society three or four years ago. With this understanding we make the following estimate:

"8,000 copies made up into two-column pages, to trim to 5½x8½, containing all New York data, in addition to college key, printed on No. 1 M.F. paper, making, we estimate, a 280-page book, side stitched, with glued paper cover $633.46

"Alphabetical index, 64 pages..... $227.10

"Cloth binding on this style book would cost between 9 and 11 cents a copy.

"We have not figured on printing the books as you are now issuing it, since we could not undertake this work, at least for many months."

GEORGE H. SIMMONS,
Editor and General Manager.

Respectfully submitted,

CHARLES H. RICHARDSON, *Chairman,*
JOSHUA M. VAN COTT.

A full report of the Committee on Publication is herewith appended, and for the expenses of the Society the House of Delegates is referred to the Annual Report of the Treasurer. All bills have been properly audited, and the accounts examined and certified to by A. H. Wicks, a certified public accountant of the State of New York.

Respectfully submitted,

WISNER R. TOWNSEND,
December 31, 1913. *Secretary.*

REPORT OF THE COMMITTEE ON PUBLICATION APPOINTED BY THE COUNCIL.

At a meeting of the Council held in New York City, May 16, 1913, the following Committee on Publication was appointed: Drs. Floyd M. Crandall, Alexander Lambert, John C. MacEvitt, Victor A. Robertson and Wisner R. Townsend. At the same meeting Dr. MacEvitt was appointed editor.

At the first meeting of the Committee held at the State Society rooms, 17 West 43d Street, New York, on May 21st, Dr. Wisner R. Townsend was elected Chairman with control over all advertising and financial matters.

THE JOURNAL.

The Journal has been regularly issued on the 15th of each month during the year, and owing to the increase in membership the edition was 8,300 copies per month, and in 1914 an edition of 8,500 will be required. Owing to the fact that there were fewer papers read at Rochester than at the previous meeting in Albany, the size of the Journal for 1913 was 694 pages as compared with 752 for the previous year. The cost of the Journal for 1912 and 1913 was as follows:

JOURNAL ACCOUNT,
YEAR ENDING DECEMBER 31, 1912.

Expenditures.

Publication	$7,260.96	
Expense	378.92	
Salaries	1,754.96	
Commission	1,107.43	
Discount	54.16	
Doubtful Debts charged off	172.50	
		$10,728.93

Income.

Advertisements	$4,617.87	
Subscriptions and Sales..	213.74	
Doubtful Debts collected.	37.50	
		4,869.11
Cost of Journal for 1912.....		$5,859.82

JOURNAL ACCOUNT,
YEAR ENDING DECEMBER 31, 1913.

Expenditures.

Publication	$7,371.65	
Expense	318.05	
Salaries	1,339.56	
Commission	1,022.76	
Discount	75.13	
Doubtful Debts charged off	170.42	
		$10,297.57

Income.

Advertisements	$5,546.07	
Subscriptions and Sales..	270.76	
Doubtful Debts collected.	37.50	
		5,847.99
Cost of Journal for 1913....		$4,449.58
Making a saving in 1913 of.....		$1,410.24

An analysis of the expenditures shows the cost of publication for 1913 to be $7,371.65, which is the amount paid the Brooklyn Eagle for printing, wrapping and mailing the Journal and also the amount paid for postage and for the wrapper in which the Journal is mailed. The Journal has been printed by the Brooklyn Eagle since 1906 because its bid was lower than that of any other firm, and the work done has been most satisfactory.

The account marked expense, $318.05, covers a number of minor items such as copyright, new stencils for the addressograph, advertising rate cards, postage for correspondence, telegrams, telephones, traveling expenses of the advertising solicitor, etc., etc. The trips made from time to time up the state by the advertising solicitor have in every instance brought a most satisfactory return.

Salaries, $1,339.56, covers the amount paid for clerical work done on the Journal and the Honorarium paid the editor. For several years the item salaries was kept in the office, by having a clerk at the end of the day certify to the amount of work done in each department, and charged accordingly. This was found to be a very troublesome method and also incurred some expense in keeping track of the items. It was therefore decided, two years ago, to make an arbitrary division, by which the accountant, who audits the books, would divide the salaries at the end of the year according to the following percentage: 18 per cent Journal, 38 per cent Directory and 44 per cent General. This seemed to be the best method of dividing the salaries in an office which covers work of so many different kinds, as it enables a fair comparison to be made from year to year.

Commissions, $1,022.76, covers the 25 per cent paid the advertising solicitor for new advertisements and 15 per cent for renewals, also commissions allowed to agencies in control of certain advertisements. In cases where contracts have to be made through agencies, the advertising solicitor receives a smaller compensation, so the cost to the Society for obtaining these advertisements is no greater than when obtained directly from the advertisers.

Discount, $75.13, covers 5 per cent allowed for cash payments, and 10 per cent for joint advertisements in Directory and Journal.

Doubtful debts charged off, $170.42, are advertisements which were carried during the previous year on which no payments had been made, owing to the firms having failed, gone out of business, disappeared, etc.

THE DIRECTORY.

The Directory was issued in October, 1913, an edition of 8,000. The cost for the years 1912 and 1913 is as follows:

DIRECTORY ACCOUNT, 1912.

Expenditures.

Postage	$363.12	
Stationery and Printing	233.20	
Delivery	897.87	
County Clerk's Fees	16.00	
Salaries	1,809.62	
Printing and Binding Directory	5,210.53	
		$8,530.34

Income.

Advertisements	$1,533.50	
Sales	1,234.10	
		2,767.60
Cost of Directory for 1912		$5,762.74

DIRECTORY ACCOUNT, 1913.

Expenditures.

Postage	$320.40	
Stationery and Printing	248.82	
Delivery	922.95	
County Clerk's Fees	20.10	
Salaries	1,764.44	
Commission	287.21	
Printing and Binding Directory	5,562.78	
		$9,126.70

Income.

Advertisements	$1,747.75	
Sales	1,335.00	
		3,082.75
Cost of Directory for 1913		$6,043.95

Making an increase in cost in 1913 of $281.21.

An analysis of the actual amount paid the printer is as follows:

Composition, presswork and binding, $4,767.00.

Alterations and authors' corrections, $672.50, which includes changes of address, telephone numbers, office hours, etc., new names and other data received after the Directory has been set up, the omission of which would decidedly decrease the value of the book.

Notary fee and new half tone for advertising, $10.78.

Inserting 7,500 copies in pasteboard boxes, pasting labels, delivering to express companies, $112.50; making the total amount paid the printer $5,562.78.

Of the $281.21 increase in the cost of the 1913 Directory over 1912, about $250 is due to the addition of a complete list of Examiners in Lunacy in New York State. This list, outside of the expense incurred for clerical work in compiling it, added 35 pages to the Directory.

In the report of this year, the salaries and commissions have been divided into separate headings so it is possible to see how much should rightfully be credited to each. Heretofore they had been included under the one heading, salaries. The increased size of the book also increases the cost for postage and express by about $25. The Committee has always had this book delivered by Boyd's City Dispatch in New York City and Brooklyn, because it not only receives a receipt for each book delivered but the cost is less than it would be if sent by mail or express.

After March 16, 1914, the Directory can be delivered by Parcel Post, but the cost to the Society will not thereby be reduced, as it will be necessary to insure each book, which will add five cents to the cost and thus make the expense greater than is now paid to Boyd's Despatch. Many physicians move about October 1st and if this book were not insured the State Society would have no way of knowing if it reached the physician or not. From 150 to 200 books are returned or redelivered by Boyd's City Dispatch or the express companies each year, which if sent by mail would never be heard from unless insured. For the third zone, including Buffalo, the present express rates are lower than the Parcel Post.

The Directories on hand will all be exhausted before the next edition comes out. The sales and advertisements have increased in 1913 but as there was an increase in the cost of the book there was no gain to the Society.

Every effort is made to secure the data as early as possible but each year many members move in the early autumn and cannot send in their data until after the book is in proof. This causes a heavy bill for corrections, but it is unavoidable if we desire the book to be up to date and valuable. If not up to date it is virtually worthless not only to the members, but also to the purchasers. Many inquiries have been made as to whether New Jersey and Connecticut could not be omitted. Careful investigation has been made of the cost of including these States, which shows that the sales resulting from their insertion more than balance the expense. The Committee has carefully gone over the question of omitting any of the data now published in the Directory, and cannot see that it would be possible to thus reduce the book in size without materially interfering with its value. A publication based on the plan of the American Medical Association Directory, in which in order to find a man's college and year of graduation a key must be used, and in which the other data is greatly abbreviated, would in the opinion of the Committee greatly lessen the value of the book.

The Directory has been printed by the Federal Printing Company for the past seven years, as their bids were lower than those of other printers.

The Committee earnestly requests that every member answer the request for information as promptly as he can, so that if possible the expense incurred for corrections may be reduced to a minimum.

The Committee desires to thank all those who aided it during the past year, especially the Secretaries of the County Societies.

Respectfully submitted,
WISNER R. TOWNSEND, *Chairman.*
FLOYD M. CRANDALL,
ALEXANDER LAMBERT,
JOHN C. MACEVITT,
VICTOR A. ROBERTSON.

December 31, 1913.

REPORT OF THE TREASURER.

To the House of Delegates:

It seems wise at stated intervals to review the financial condition of any organization. The Treasurer, therefore, desires to draw the attention of the Society to some further explanations of the financial condition of the treasury than is contained in the mere figures of each succeeding annual report.

The Treasurer has been in office eight years since the amalgamation. Taking first the total amount of funds in possession of the Society at the end of each year, which in this Society is represented at present by the bank balance, we have the following:

TABLE I.

Dec. 31st	*Bank Balances*	*Excess of Income*	*Deficit.*
1906	$5,328.19	$3,234.29	.....
1907	4,788.88	.....	$1,287.37
1908	5,300.30	642.46	.....
1909	9,426.79	3,311.63	.....
1910	10,096.73	.....	479.22
1911	10,608.33	850.85	.....
1912	8,617.78	.....	1,306.09
1913	9,448.08	879.40	.....
		$8,918.63	$3,072.68

Excess of income for the last eight years, $5,845.95.

In considering these various balances with varying surplus and deficit, it is worthy of note, that the dues of the Society have been $3.00 a year, and are so at present. The large surplus of 1906, and the deficit of 1907 must be taken together. A note in the Treasurer's report of 1907 gives the following explanation:

> "The loss on the Journal for the year 1906 was, in the last year's report, placed as an asset, because of the belief of those in authority at the time that the Journal of 1907 would show a profit, and that this could be charged against the loss for that year. Owing to the Rules adopted by the House of Delegates restricting advertisements, and to the financial condition of the last few months, it has been found that the Journal cannot be run at a profit at present. Therefore, it has been charged off."

Another noticeable feature of the management of the Journal at that time was, that it had been run by a business manager for the previous year. In the beginning of 1908 the Committee on Publication of the Council took the Journal in its own hands and has since conducted it.

The large surplus of 1909 is explained by the fact that expenses of the Directory were $1,598.68 less, and of the Journal $585.45 less than the year previous, and there also were some $863.00 of increased dues above the year previous from the growth in membership. There were other small items, showing increase or diminution on both sides of the ledger, which gave a further surplus of $284.32. This large reduction in the expense of the Directory was due at that time to the contraction and elimination of data which had been previously given. Further contractions and eliminations of this kind, however, cannot take place as the limit has been reached, as is shown in the report of the Committee on Publication.

In the following year, 1910, where a deficit is shown of $479.22, the expense of the Journal had increased over $1,400, and the expense of the Directory over $800, and in spite of the strictest economy the Society faced a deficit as above. In 1911, however, there was again a surplus of $850.85, and in 1912 a deficit of $1,306.09. The 1912 loss was due to the great expense of the Journal, as the size of the Journal had been increased in order to care for the many papers read at the Sections, and there were a great many cuts, and the honorarium of the editor had been doubled.

The year 1913 shows an excess of income of $879.40. This was accomplished by a saving on the Journal of some $1,400. Excess of expenses in other directions brought the surplus down to the above figure, $879.40. Adding the total excess of income in the last eight years we find it amounts to $8,918.63. The total of deficits during this time has been $3,072.68, making an excess of income over expenses during the last eight years of $5,845.95, so that the cash surplus of the Society has risen from $5.328.19 to $9,448.08, these being the bank balances on the 31st of December of the years 1906 and 1913.

Table II shows the total cash receipts during the last eight years:

TABLE II.

Year ending Dec. 31st	
1906	$30,045.06
1907	32,003.31
1908	35,547.36
1909	35,373.31
1910	38,689.78
1911	38,339.07
1912	39,771.33
1913	41,404.13

The business of the Society, therefore, is seen to have steadily grown. In a running balance in a trust company the Society is allowed interest, and the interest on deposits of this last year amounted to $357.11. This source of revenue could be increased if the county societies, whose deposits do not draw interest, would remit as promptly as possible in the early part of each year to the State Treasurer, although in the By-Laws they are not required to remit before July first.

The sources of revenue of the Society are: The State per capita assessment, or so-called dues, comprising two-thirds of the total, the other one-third being made up of revenues from the advertisements of Journal and Directory, and sales of both. This, added to the balance of moneys on hand, comprises the total receipts of the Society for each year. It would seem that one cannot expect to increase the sales or the adver-

tisements of either Directory or Journal to any appreciable extent, and any increased revenue to the Society must come, under present conditions, from increased membership. From the standpoint of the treasury, the desirability of an increased membership cannot be too strongly impressed upon the individual members of the Society.

As to the disbursements of the Society, the following tables show the cost to the Society of the Directory and the Journal and of Malpractice Defense:

TABLE III.
Cost of Journal

Year	*Edition*	*Cost to Society*
1906.....	10,000*	$2,824.55
1907.....	7,500	2,749.32
1908.....	7,500	2,916.16
1909.....	7,500	2,320.71
1910.....	7,500	3,514.23
1911.....	7,500	4,553.29
1912.....	8,000	5,859.82
1913.....	8,300	4,449.58

* A few issues, then 8,000.

TABLE IV
Cost of Directory

Year	*Edition*	*Amount*
1906.....	7,000	$6,949.39
1907.....	7,000	6,835.92
1908.....	7,000	7,631.86
1909.....	7,500	6,053.09
1910.....	7,500	6,865.78
1911.....	7,500	5,951.02
1912.....	8,000	5,762.74
1913.....	8,000	6,043.95

TABLE V
Legal Expenses

1906.....	$3,461.75
1907.....	3,000.00
1908.....	3,000.00
1909.....	3,000.00
1910.....	4,590.79
1911.....	3,613.13
1912.....	3,898.78
1913.....	4,952.58
and for 1914 already appropriated by the Finance Committee of the Council	6,500.00

Considering next the expenses of the office of the Society in 1906 and 1907 the rent paid for its accommodations was $500 a year; for 1908, $600; for 1909, 1910, 1911, 1912, and 1913 the rent has been $900 each year. The increase in rent, however, has been slightly compensated for by the fact that the insurance has dropped from $44 to $5.90, because of moving from a non-fireproof building to a fireproof building, and in addition the quarters in the Academy of Medicine are far more convenient and desirable.

The greatest expense of running an office is in the salaries paid to those who do the daily work. In the office of the Society this is done by a head clerk, four assistants and an office boy. The work done comprises the duties of the Secretary's office, of the Treasurer's office, of the Committee on Scientific Work, the Committee on Legislation, the Committee on Medical Research, and, this past year, the Committee on Arrangements, and the continuous work on the Journal and the Directory which never ceases. The salaries paid to the individuals are not higher than the current wage under similar circumstances. It has been the policy of the office to take green hands and train them to efficiency, and raise their salaries as their efficiency increased. This has enabled the Society to obtain services more economically than if efficient hands were taken and paid continuously. The expenses of stationery and printing, of postage and the minor expenses of the office, vary but little from year to year, but are increasing with the increased work necessary.

The ordinary traveling expenses of officers of the Society have remained about the same, but in 1911, when the Society paid the traveling expenses of the delegates to the American Medical Association, $1,003.60 was paid out on this item alone. In 1912 it was $635.17, and in 1913, $651.40. It would seem proper that the American Medical Association should pay the traveling expenses of all its delegates to its meetings from all the states, as is now done with trustees and various councils, and is analogous to the payment by the United States Government to its congressmen. The Treasurer further urges the delegates of this Society to the next meeting of the American Medical Association to bring this subject before the House of Delegates to accomplish this result.

The expenses of district branches remain about the same, about $300, being a small expense considering the work done and the results accomplished.

The expenses to the Society for the Annual Meeting have been:

1907	$376.00
1908	521.00
1909	317.00
1910	596.00
1911	509.00
1912	1,197.00
1913	251.00

The year 1912 was the first year of the division of the scientific work into sections.

Last year, at Rochester, for the first time in the history of the Society, receipts from the Committee on Arrangements were greater by $613 than its expenses. This brought the cost of the annual meeting down to $251.

The expenses and receipts of the Journal and the Directory are fully analyzed in the report of the Committee on Publication and need not be gone into further here. Below is appended the detailed report, as usual, for the year ending December 31, 1913, audited by the public accountant, A. H. Wicks.

Respectfully submitted,

ALEXANDER LAMBERT,
Treasurer.

December 31, 1913.

REPORT OF THE TREASURER.

ALEXANDER LAMBERT, *Treasurer,* In Account with THE MEDICAL SOCIETY OF THE STATE OF NEW YORK.

DR. CR.

CASH RECEIPTS, YEAR ENDING DECEMBER 31, 1913.

To	Balance, January 1st		$8,617.78
"	Directory, 1911	$5.00	
"	Directory, 1912	649.00	
"	Directory, 1913	2,722.75	
"	Clerical Work	161.01	
"	Interest on Deposits	357.11	
"	Interest on Bonds	90.00	
"	Sundry Receipts	554.35	
"	Advertising	5,056.45	
"	Subscriptions and Sales	271.76	
"	Annual Meeting	613.92	
"	Annual Dues and Arrears	33.00	
"	Annual Dues, 1911	63.00	
"	Annual Dues, 1912	915.00	
"	Annual Dues, 1913	20,901.00	
"	Annual Dues, 1914	393.00	
			32,786.35
			$41,404.13

CASH PAYMENTS, YEAR ENDING DECEMBER 31, 1913.

By	Annual Dues Overpayments		$12.00
	Furniture and Fixtures		70.00
	Traveling Expenses	$203.54	
	Delegates A. M. A. Meeting	651.40	
			854.94
	Accountant		200.00
	Carfare		17.32
	Express		26.60
	Treasurer's Bond		12.50
	Exchange on Checks		13.20
	Sundry Petty Cash Disbursements		198.30
	Framing Pictures		5.95
	Telephone		141.25
	Stationery and Printing		320.17
	Postage		446.28
	Rent		900.00
	Insurance		5.70
	Com. on Legislation		129.90
	Legal Expense		4,952.58
	1912 Directory		88.36
	1913 Directory		9,156.70
	JOURNAL Expense		318.05
	JOURNAL Salaries		1,339.56
	JOURNAL Commissions		1,022.76
	JOURNAL Publications		7,371.91
	District Branches		287.48
	Clerical Work		56.00
	Salaries		2,064.10
	Annual Meeting		864.80
	Com. on Experimental Medicine		15.34
	Secretary		500.00
	Interest on Bonds deposited		90.00
	Transfer Prize Funds		474.30
			$31,956.05
	Balance in Guaranty Trust Co		9,448.08
			$41,404.13

ANNUAL DUES, 1913.

County.	*Amt. Paid.*	*County.*	*Amt. Paid.*
Albany	$471.00	Onondaga	$486.00
Allegany	123.00	Ontario	204.00
Broome	213.00	Orange	270.00
Cattaraugus	108.00	Orleans	93.00
Cayuga	159.00	Oswego	156.00
Chautauqua	273.00	Otsego	108.00
Chemung	177.00	Queens-Nassau	396.00
Chenango	114.00	Rensselaer	258.00
Clinton	138.00	Richmond	144.00
Columbia	93.00	Rockland	87.00
Cortland	87.00	St. Lawrence	168.00
Delaware	93.00	Saratoga	132.00
Dutchess	303.00	Schenectady	285.00
Erie	1,362.00	Schoharie	66.00
Essex	24.00	Schuyler	42.00
Franklin	138.00	Seneca	60.00
Fulton	93.00	Steuben	192.00
Genesee	81.00	Suffolk	285.00
Greene	78.00	Sullivan	60.00
Herkimer	174.00	Tioga	66.00
Jefferson	183.00	Tompkins	144.00
Kings	2,421.00	Ulster	186.00
Lewis	60.00	Warren	102.00
Livingston	117.00	Washington	108.00
Madison	87.00	Wayne	105.00
Monroe	768.00	Westchester	663.00
Montgomery	159.00	Wyoming	87.00
New York	7,356.00	Yates	54.00
Niagara	186.00		
Oneida	453.00		$21,099.00

ADVANCE DUES, 1914.

County.	*Amt. Paid.*	*County.*	*Amt. Paid.*
Chautauqua	$6.00	Oswego	$3.00
Chemung	9.00	Otsego	9.00
Chenango	54.00	Queens-Nassau	6.00
Essex	18.00	Rensselaer	60.00
Herkimer	54.00	St. Lawrence	6.00
Kings	48.00	Steuben	6.00
Monroe	36.00	Suffolk	6.00
Oneida	15.00	Washington	3.00
Onondaga	15.00	Wayne	30.00
Ontario	3.00		
Orleans	6.00		$393.00

DIRECTORY ACCOUNT, 1913.

Expenditures.

Postage		$320.40	
Stationery and Printing		248.82	
Delivery		922.95	
County Clerk's fees		20.10	
Salaries	$1,764.44		
Commission	287.21		
		2,051.65	
Printing and Binding Directory		5,562.78	
			$9,126.70

Income.

Advertisements	$1,747.75	
Sales	1,335.00	
		3,082.75
Cost of Directory		$6,043.95

REPORT OF THE TREASURER.

JOURNAL ACCOUNT, YEAR ENDING DECEMBER 31, 1913.

Income.			*Expenditures.*		
Advertisements	$5,546.07		Publication	$7,371.65	
Subscriptions and Sales	270.76		Expense	318.05	
Doubtful Debts Collected	31.16		Salaries	$1,339.56	
		$5,847.99	Commission	1,022.76	
				2,362.32	
Cost of JOURNAL		$4,449.58	Discount	75.13	
			Doubtful Debts Charged Off	170.42	
		$10,297.57			$10,297.57

BALANCE SHEET DECEMBER 31, 1913.

Assets.			*Liabilities.*		
Cash, Bank	$9,448.08		Annual Dues, 1914		$393.00
Petty	9.90		Accounts Payable		78.30
		$9,457.98	Lucien Howe Prize Fund	$1,929.24	
Accounts Receivable		897.38	Merrit H. Cash Prize Fund	916.96	
Furniture and Fixtures	$274.00				2,846.20
Directory Catalogue	250.00		Surplus Jan. 1, 1913	$9,918.66	
		524.00	Gain, 1913	879.40	
Directory, 1913		390.00	Surplus Dec. 31, 1913		10,798.06
Union Dime Savings Institution, 1.	$429.24				
Union Dime Savings Institution, 2.	416.96				
Title G. & T. Mtg. Ctfs	2,000.00				
		2,846.20			
		$14,115.56			$14,115.56

I hereby certify that the above Balance Sheet is correct as shown by the books.

A. H. WICKS,
Certified Public Accountant,
302 Broadway, New York.

INCOME AND EXPENDITURES, YEAR ENDING DECEMBER 31, 1913.

Income.			*Expenditures.*		
Arrears of Dues	$1,011.00		Expense	$1,354.50	
Dues, 1913	21,099.00		Telephone	137.90	
Interest on Deposits	357.11		Stationery and Printing	320.17	
Clerical Work	105.01		Postage	346.28	
Directory, 1911	5.00		Rent	900.00	
Directory, 1912	60.64		Insurance	5.70	
			Salaries	2,064.10	
			Com. on Legislation	129.90	
			Legal Expenses	4,952.58	
			Annual Meeting	250.88	
			District Branches	287.48	
			1913 Directory	6,043.95	
			Secretary	500.00	
			Com. on Experimental Medicine	15.34	
			JOURNAL Cost	4,449.58	
					21,758.36
			Excess of Income		879.40
		$22,637.76			$22,637.76

INCOME AND EXPENDITURES, YEAR ENDING DECEMBER 31, 1912.

Income.			*Expenditures.*		
Arrears of Dues	$960.00		Expense	$1,526.90	
Dues, 1912	20,535.00		Telephone	129.77	
Interest on Deposits	381.62		Stationery and Printing	256.63	
Clerical Work	64.17		Postage	350.95	
		$21,940.79	Rent	900.00	
Excess of Expenditures		1,306.09	Insurance	5.70	
			Salaries	2,067.83	
			Com. on Legislation	114.50	
			Legal Expense	3,898.78	
			Annual Meeting	1,187.05	
			District Branches	518.84	
			1911 Directory	60.12	
			1912 Directory	5,762.74	
			Secretary	500.00	
			Com. on Experimental Medicine	107.25	
			JOURNAL Cost	5,859.82	
		$23,246.88			$23,246.88

REPORT OF THE COMMITTEE ON LEGISLATION.

To the House of Delegates:

The Committee on Legislation begs to present the following report:

During the year 1913 the work of the Committee was greatly increased by the large number of bills introduced. On the editorial page of the May Journal a full synopsis is given of the most important legislation which was passed and which failed. Those wishing full details are referred to this article.

The Chairman desires to thank the members of the Society who so ably helped in securing the results achieved. No legislation was passed which was opposed by the Society until the same had been amended in a satisfactory manner. All the really undesirable measures were killed.

The Health bill which was finally passed was amended in important particulars as the result of the work of the State Society. The same is true of the cocaine bill which was passed.

The Chairman desires to call the attention of the profession to the fact that if the Society is to be of any great influence in the future the individual members must do more work. The number in any county is remarkably small, who actually do any work toward helping or opposing any legislation. Very few of the members of the Society in the cities know the names of their Assemblyman or Senator, and even in the rural districts but few know them personally.

It has been the experience of the Committee that the members of the Legislature are willing to listen to the profession on any subject that affects the public and the profession, but it cannot be expected that a legislator believes the profession is opposed to a bill when he never receives a protest from a physician he knows or from the physicians he represents in the Legislature.

The work of the Legislative Committee is growing and it cannot afford to pay lobbyists nor is it desirable that it should employ them, but the Chairman and members of the Legislative Committee and a handful of men throughout the State can produce very little influence by themselves. With the proper support from the entire profession, any measures they oppose stand a poor chance of passing.

If, in the future, measures such as the Osteopathic, Naturopathic and Chiropractic bills are not to be passed, the profession must realize that every man has to work, otherwise we will see much undesirable legislation placed on our statute books.

The Committee anticipates that a large number of bills will be introduced at the next session of the Legislature.

Respectfully submitted,

LEWIS K. NEFF,
Chairman.

December 31, 1913.

REPORT OF THE COMMITTEE ON PUBLIC HEALTH.

To the House of Delegates:

The Committee on Public Health would respectfully report that:

The year has been noteworthy for the number and variety of bills and movements either directly or indirectly bearing upon or affecting the public health, and this Committee would urge upon all County and District Branch Societies as well as the State Society, the importance of doing all in their power to further the good measures and oppose the bad. Everything looking towards fadism or the obstruction of scientific medical progress should be vigorously combatted by physicians individually and collectively.

We note with pleasure that Saratoga Springs has not only become State property, but that it is under a most able management, which can be depended upon to make of the historic old spot a park which will rank second to none in the country.

We would congratulate the State and ourselves on the appointment of Dr. Hermann M. Biggs as Commissioner to the New York State Department of Health. His long service in matters pertaining to the public health and his fearlessness in performance of duty peculiarly fit Dr. Biggs for such a high office. A good attest to the soundness of this opinion is to be found in the action taken by the Commissioners during the smallpox epidemic at Niagara Falls. We may rest secure in the belief that the best interests of the profession and laity will be subserved by our new Commissioner and we should cordially pledge him our fullest support in all his efforts. We regret the tendency of people of intelligence to become stumbling blocks in matters of public health,—witness the recent refusal of Governor Blease of South Carolina to sign a bill providing for the systematic examination of school children and the painfully hopeless efforts of the anti-vivisectionists, which are making constant demand upon the time and energy of our Committee on Experimental Medicine.

Your Committee would respectfully suggest that a bill be submitted to the Legislature providing for the appropriation of $100,000 for the purchase of radium for the New York State Cancer Hospital for the treatment of epithelioma. We feel that the results would warrant the expenditure.

We believe the time is at hand when State action should be taken for providing filtration plants in cities situated as Buffalo and Niagara Falls are where the lake and river waters are so polluted as to make a clean water supply next to impossible. Why should we invite the experience of the city of Hamburg before she installed her filtration plant at Altoona?

It is noted with interest that the Medical Society of the County of Ulster has, after con-

siderable effort, succeeded in getting their Board of Supervisors to establish a Pathological and Bacteriological Laboratory and supply a pathologist. This only emphasizes the reiterated recommendation of this Committee that definite action be taken by the State Society to secure such laboratories for all counties where there exists a demand for them. We feel that under the present regime, the matter might be taken up by the New York State Department of Health and would recommend that the Committee on Public Health be instructed to confer with the Commissioner of Public Health and urge that some action be taken in the matter. Finally, we feel that the State Legislature should be appealed to by the Medical Society of the State of New York to appropriate a sufficient sum of money to make the quarantine station adequate to the needs of the largest port of entrée in the world. Dr. O'Connell, the Health Officer of the Port, has done all and more than could be expected of him with the limited means at his disposal. He has manifested the type of executive ability and public spirit which should command the respect and trust of the people of the Empire State. While Hoffman and Swinburne Islands are in as good condition as is possible under existing circumstances and a thoroughly modern pathological and bacteriological laboratory is practically completed at Rosebank, the Quarantine Station is sadly lacking as an up-to-date plant.

The State Society should endorse a request for two millions of dollars for the purpose of remodelling the plant. Hoffman and Swinburne Islands should be shored up, a modern unit system of pavilions should be built on Swinburne Island and the old buildings on Hoffman Island should be either reconstructed or replaced by modern structures. There should be a central light, heat, power and water plant which would make a great saving of running expenses. And the channel to the two islands should be deepened. We could then point with pride to a Quarantine Station which would be on a par with those of the other great powers.

Respectfully submitted,
JOSHUA M. VAN COTT, *Chairman,*
ALLEN A. JONES,
CHARLES STOVER.

December 31, 1913.

REPORT OF THE COMMITTEE ON MEDICAL RESEARCH.

To the House of Delegates:

The Committee on Medical Research was constituted a Standing Committee of the Society, at the last meeting held in Rochester, April 28, 1913.

As the Legislature had already taken action on the various Anti-vivisection bills before the committee was organized, no activity in that line was necessary. The Committee expects during the next session of the Legislature, that considerable work will have to be done, as it already has knowledge in its possession that several bills will be introduced.

The Chairman was appointed by the Council at its meeting on May 1, 1913, and the full Committee was appointed by the Chairman with the approval of the Council.

The Committee consists of the following:

First District—H. M. Biggs, J. D. Bryant, B. F. Curtis, J. Ewing, S. Flexner, A. F. Hess, S. W. Lambert, E. LeFevre, W. H. Park, W. M. Polk, J. E. Sadlier, H. E. Schmid, L. A. Stimson, J. S. Thacher, W. R. Townsend, F. Van Fleet.

Second District—E. H. Bartley, W. F. Campbell, J. R. Kevin, J. C. MacEvitt, F. Overton, J. M. Van Cott.

Third District—J. D. Craig, A. Vander Veer, S. B. Ward.

Fourth District—G. F. Comstock, G. C. Madill, C. Stover.

Fifth District—T. W. Clarke, C. B. Forsyth, H. G. Locke.

Sixth District—L. Coville, R. P. Higgins, B. W. Stearns.

Seventh District—W. T. Mulligan, W. W. Skinner, J. F. W. Whitbeck.

Eighth District—H. W. Johnson, E. C. Koenig, N. G. Richmond, G. W. Wende, H. U. Williams.

At a meeting held on December 27th, an Executive Committee, consisting of Drs. James Ewing, Simon Flexner, William H. Park, Wisner R. Townsend and Frank Van Fleet, was elected to act between the meetings of the whole Committee.

Respectfully submitted,
WILLIAM H. PARK, *Chairman.*

December 31, 1913.

REPORT OF THE COMMITTEE ON PRIZE ESSAYS.

To the House of Delegates:

On December 31, 1912, the Committee presented a very full outline bearing upon the Merritt H. Cash and Lucien Howe Prize Essays, which was published in January, 1913, number of THE NEW YORK STATE JOURNAL OF MEDICINE.

For the information of members of the State Society, who may wish to compete for the prizes a very full report containing the names of the subjects selected, was published in the June, 1913 number of the State Journal, also December, 1913.

It will be necessary to make a supplementary report at the annual meeting regarding the awarding of the prizes.

ALBERT VANDER VEER, *Chairman,*
J. F. W. WHITBECK,
EDWARD D. FISHER.

December 31, 1913.

REPORT OF THE COMMITTEE ON ARRANGEMENTS.

To the House of Delegates:

The Committee on Arrangements begs to report satisfactory progress in the work of preparation for the Meeting of 1914.

Accommodations for the sessions of the five Sections have been secured at the Hotel Astor, which place will be the Headquarters for all literary parts of the program.

Clinical features at the various hospitals will be presented during the afternoons of the days of the Meeting, and opportunities will be afforded to visit the scientific and research institutions of the city. The banquet will be at the Hotel Astor on the night of April 29th, which, it is hoped, will be attended by all visiting members and their wives. The arrangements for the previous meeting at Rochester were successfully carried out under the direction of Dr. Wesley T. Mulligan, Chairman.

Respectfully submitted,

Charles H. Richardson,
Chairman.

December 31, 1913.

REPORT OF THE COMMITTEE ON SCIENTIFIC WORK.

To the House of Delegates:

The Committee on Scientific Work begs to report, that following the plan of the year preceding they arranged that the meeting to be held in Rochester last year should be in five Sections, namely—Section on Medicine, Section on Surgery, Section on Eye, Ear, Nose and Throat, Section on Obstetrics and Gynecology, and Section on Pediatrics.

The large attendance, the high standard of papers read, and the enthusiasm shown bore witness to the wisdom of the radical change which has been made in the form of the program. The several Sections were so well supported last year that it has been decided to adhere to them for the coming meeting. For the first time the Sections have chosen their own officers, the chairman of whom, by the new by-law, constitute, with two others, the Committee on Scientific Work.

The arrangements for the coming meeting in New York City are well under way, and there is every indication that this will be the largest and most successful meeting in the history of the Society.

Respectfully submitted,

Thomas J. Harris,
Chairman.

December 31, 1913.

REPORT OF THE COMMITTEE APPOINTED TO CONSIDER THE QUESTION OF THE PROSECUTION OF ILLEGAL PRACTITIONERS.

To the House of Delegates:

The committee appointed at the last meeting of the State Medical Society to report on the prosecution of illegal practitioners of medicine in the State wish to respectfully report the following conclusions. We have held two meetings in New York City and have spent much time in correspondence and interviews with physicians and lawyers from various parts of the State. We find the following facts to be true:

1. There are in most of the counties of the State, depending on their size and various local conditions, from one to several illegal practitioners. These are divided among the following variously named callings: Mechano-Neuro-Therapeutists, Hydro-Therapeutists, Naturopaths, Physician Abortionists, Midwife Abortionists, Magnetic Healers, Mental Healers, Christian Scientists, Medical Violators of Federal Laws, Medical Corporations, Medical and Lay Sellers of Abortion Drugs and Chiropracters. All of these are openly and flagrantly violating the medical practice laws in treating disease by various methods, but most of them carefully abstain from giving drugs.

2. In many cases the local county society has procured indictments against these practitioners and the case has been brought to trial. In most of these cases, with the notable exception of the cities of New York and Buffalo, where the prosecution of these cases has been well organized the defendant has been acquitted and the after effect of the verdict has been to establish them more than ever in their practice. Many factors have served to bring about this state of affairs. In New York City these cases are tried in a Court of Special Sessions with three judges passing on the case instead of a picked jury. In rural or smaller communities local prejudice and feeling have been drawn upon and defense has been told that this is a free country and defendant is a poor fellow trying to earn an honest (?) living, and that the physicians have been trying to establish a monopoly of the healing art, and that many physicians' acts would not bear the light of investigation. In many of these cases the defense has endeavored to bring forward the claim that he has only done good, that he has cured cases pronounced incurable by the physicians, and that he has done no harm by his practice. It is just on these points that it seems to your committee that successful prosecution could be brought. No matter what may be the technical violation of the law, unless evidence can be brought forward showing actual harm done by the defendant, prosecutions will be very difficult in the smaller communities. This can and should be done in every possible case, and instances of the harm

done by these practitioners should be brought to the attention of the public in some forcible manner. A young woman died in Corning shortly after the present New Year while under the manipulations of a mechano-neuro-therapeutist. In Cortland, about the middle of last January, a child four years old died from pneumonia during the manipulations of a chiropracter. Every community could furnish like instances, but the cases are generally hushed up and known only to a few people of the immediate locality; but the general public should, and have a right to, know these facts that they may judge aright about them. If a good healthy sentiment can be aroused in the State about these matters, prosecution will be easy. The State Society through the State Journal could serve as a medium for spreading the information, and county boards of censors could be advised as to proper steps to be taken in prosecuting these cases.

3. The experiences of New York County has been large and varied. It has gathered a large amount of material of especial value in the prosecution of illegal practitioners. This information as well as any other information that could be of assistance in these cases should be collected in a central office, such as the office of the State Secretary, and rendered easily available for use by the county societies. The Attorney-General of New York has been notified of the state of affairs and has offered assistance in investigation of these cases, and has designated one of his deputies to investigate cases of violation of the medical practice act.

We recommend that the investigation and active prosecution of these cases as at present be undertaken by the board of censors of the various county societies. They are the ones best fitted to know local conditions and can more easily obtain evidence than a State prosecuting agent. That the evidence thus collected be presented to the district attorney of the county concerned for prosecution. That the State Society, through its executive officers or through a standing committee for this purpose, serve as a bureau of information and tender its advice and counsel when requested, either in advice as to getting evidence in these special cases, or in counsel when these cases are presented for trial. Should funds be available, we recommend that this committee be empowered to employ a legal adviser to attend to this correspondence. In counties where the district attorney is apathetic or inefficient in the prosecution of these cases we recommend that the matter be taken up with the attorney general's office. Your committee feel that in the regularly elected district attorneys throughout the State, with supervision by the attorney general's office, there is enough legal machinery to prosecute these violations, but that inasmuch as the ordinary district attorney is not equipped or prepared to collect evidence in these cases, that this can best be done by the various county board of censors, under advice from the local district attorney or the State Society. We further recommend that the State Society appropriate $500 for the necessary expenses of the first year of this bureau of information.

Respectfully submitted,

R. P. Higgins,
C. H. Richardson,
A. L. Peckham,
Committee.

REPORT OF THE COMMITTEE ON THE REGULATION OF THE INTRODUCTION OF MEDICAL EXPERT TESTIMONY.

To the House of Delegates:

It is the pleasure of your Committee on Medical Expert Testimony to report that good progress was made during the past year.

The following bill was introduced in the Legislature and passed by both houses, and was vetoed by Governor Sulzer in a blanket veto.

AN ACT

To amend the judiciary law, in relation to examining physicians.

The People of the State of New York, represented in Senate and Assembly, do enact as follows

Section 1. Chapter thirty-five of the laws of nineteen hundred and nine, entitled "An act in relation to the administration of justice, constituting chapter thirty of the consolidated laws," is hereby amended by inserting therein a new section, to be section thirty-one, to read as follows:

No. 31. Examining physicians. In a criminal action or proceeding or in a special proceeding instituted by the state writ of *habeas corpus* or *certiorari* to inquire into the cause of detention, in which the soundness of mind of a person is in issue, the court in which or the judge or justice before whom the action or special proceeding is pending may appoint not more than three disinterested competent physicians to examine such person as to his soundness of mind at the time of the examination. Any such examining physician may be sworn as a witness at the instance of any party to the action or proceeding. The compensation of such examining physician for making such examination and testifying when certified by the presiding judge or justice of the court or judge or justice making the appointment, shall be paid out of any funds available for the payment of and in the same manner as other court expenses.

No. 2. This act shall take effect immediately.

In the opinion of the chairman of the Committee, from correspondence I have had with the Governor's office, he vetoed the bill without careful examination.

The bill will be again introduced in the year 1914, and we hope to be able to have it placed upon the statute books.

If this is in keeping with the desire of the State Society, your Committee is willing to continue the work, and we suggest the continuing of the Committee for this purpose.

Respectfully submitted,

Dwight H. Murray, *Chairman,*
Edward D. Fisher,
Charles L. Dana.

December 31, 1913.

REPORT OF THE COUNSEL.

To Dr. William Francis Campbell as President, and to The Council and House of Delegates of the Medical Society of the State of New York:

GENTLEMEN:

I have the honor to transmit to you herewith my report for the year 1913, referring to malpractice defence:

More actions have been begun during the last year than during any other year, and if certain years were selected, more have been brought than during any other two years together. There have been fifty-seven brought. It goes without saying, therefore, that the work of counsel has been far greater during 1913 than any other year since malpractice was inaugurated in this State, so much so that much of the time counsel's entire effort has been devoted to the work of the State Society.

More cases have been tried this year than in any other. One has been lost, the verdict amounting to $500. This case, tried in Wayne County, was one of special interest. The husband and wife both sued, but only one action was tried, that of the wife. The claim was that at the time of childbirth the defendant in the action, through negligence, permitted the wife to become septic, with the result that she was compelled to go to a hospital in an adjoining city, and there be treated and undergo a long and painful convalescence, for which she asked damages in a large sum. The facts in the case seem to show that the woman was not septic, but after a period of convalescence she was infected with scarlet fever, was taken to a hospital, and in the hospital placed in the Contagious Ward. The real question which the jury decided against the defendant, was as to whether or not she actually had scarlet fever, decided wrongfully beyond any question. This case has been taken up on appeal, and will be argued in June, 1914, although the verdict is extremely small.

For years many physicians have settled their own cases, and as I have been about the State attending to my duties, I have heard inquiries as to whether or not the State Society represented a various number of physicians. From these inquiries it is evident why the number of cases brought to the attention of your counsel has been small; but now the knowledge of this defence having finally reached the great body of physicians in this State, and realizing as they do the powerful influence for good represented by this organized malpractice defence, I have heard less and less of this settling of cases, and the proposed defendants are walking into court and referring critical patients to your counsel, and are resting secure in the efforts made by our State organization. This is most gratifying, and accounts for the increased number of cases during the present year; now settlements are rare.

Your counsel is confident that there will be a very substantial reduction in the number of cases brought during 1914, because lawyers who are bringing these actions are becoming more and more discouraged.

Such a large number of physicians in various counties have coöperated with me in the success of the past year, that their names would only represent the very best in these counties, and as they rendered their services uniformly gratuitously and without the hope of reward, I shall omit the names. Each community furnishes its full quota, and each community recognizes who these men are.

The following is a list of new cases begun during 1913:

1. This was an action wherein the defendant was sued on behalf of the child by the father as guardian, and also by the father individually for loss of services of the child, wherein it was charged that through the negligence of the defendant the plaintiff, an infant, lost his leg by reason of too tight bandaging. The defendant in this action was represented originally by other attorneys who practically abandoned the defendant on the eve of trial, and your counsel was called in. The exhibit in the case was one which tended to arouse the sympathy of the jury. The plaintiff was represented by two well known attorneys, and advised by three well known physicians and surgeons. The trial occupied about a week, and though begun during 1913 was promptly reached and tried, the verdict of the jury being in favor of the defendant in both cases.

2. This action was begun on behalf of a child by the father as guardian, wherein it was charged that the right leg of the child was improperly set, plaintiff having received a fracture of both bones of the lower leg. As often happens, the X-rays in this case were the primal cause of the action having been instituted, but the result was so completely satisfactory although the X-rays showed deformity, that the Court dismissed the complaint. This case was also begun and tried during the year 1913.

3. This action was one brought by the plaintiff against two defendants, one of them a general practitioner, and the other an osteopath. Your counsel represented the general practitioner who is a member of the State Medical Society. The cause of action arose upon the alleged carelessness of the defendant in setting the arm of the plaintiff who had had the radius fractured while cranking an automobile. This action was begun and tried during this year. The jury did not even take their coats off, but returned to the courtroom almost immediately with a verdict in favor of the defendant. The osteopath in this case had turned over to the other defendant the labor of setting the arm and taking care of it.

4. This action has not been begun, although there is threatened suit. The gravamen of the charge is that ulcers followed a hypodermic injection. The doctor has had a threatening letter from the attorney, and has every reason to believe that pleadings will be served.

5. This action was brought by a woman who received serious injuries to her right hand and arm, and was finally taken to and treated at a well known hospital, where she was put under an anæsthetic and her arm set. It is claimed that after the defendant had operated upon her and treated her hand there remained material in the joint requiring treatment to cure, the alleged negligence of the defendant. There is nothing in this case.

6. This action was brought against a surgeon, the plaintiff claiming that the doctor had been careless in the treatment of the plaintiff, a female, as is shown by letters, but as a matter of fact only a summons

was served in this action, a notice of appearance from your counsel was served, but up to date, some months later, no complaint has been introduced. In the judgment of your counsel it is one of these purely "strike" claims, and the action will probably never even get so far as to be dignified with the services of a complaint.

7. The gravamen of this action is outlined in a letter from the physician to the Secretary of the State Medical Society, but in which no summons and complaint has ever been served. While the cause of action can only be conjectured, it has to do with the treatment of the hand and arm of this woman plaintiff. Your counsel took particular interest in this case, and immediately inquired of other physicians who had attended the patient, as to their opinion of the entire situation, and I am satisfied that there is no danger of recovery in this case although the suggested damages were quite extensive and perhaps serious.

8. This action was one brought against a member of the State Society, who happens also to be a dentist, and the action was laid in one of the inferior courts of the State, the claim being that the plaintiff had engaged the doctor to furnish her with false teeth. As she claims, he has furnished her with teeth which do not fit her mouth and which are entirely unadapted and unsuited to meet her needs and requirements. This case was adjusted by the lady surrendering the teeth to the doctor, and the doctor returning the small deposit which she had paid to him. She is now seeking teeth adaptable to her use.

9. The basis of this action was a claim on the part of the plaintiff that the defendant had been negligent in taking care of an abscess in plaintiff's hand, whereby the patient had become blood-poisoned, and that he had thereby lost wages and had spent large sums of money in trying to cure himself. The amount sued for in this case is $15,000. The evidence of the insincerity of the claim may be well imagined from the size of the demand for money.

10. The claim of the plaintiff in this action is that the patient, who was employed by a contractor, had a fracture of the first phalanx of his middle finger with an open wound, and that the doctor was not successful, but was negligent in endeavoring to cure and alleviate the pain incident to the fracture, and in inspecting the wound, and in addition claims that the doctor should have amputated at once. It is also claimed that it was necessary to amputate his finger, and he became infected and gangrene set in.

11. This action represents the last of an epidemic of cases in one of the counties of the State, which followed the loss of two cases there by attorneys undertaking to defend this kind of a case. The remaining cases have all been disposed of and this is the only one left. It will be tried early in 1914. The action itself is one based upon the claim of negligence of two physicians, one of whom is represented by your counsel and the other by an independent attorney. The question involved is one of the treatment of a fracture of the arm.

12. Although the doctor has been threatened in this case with a letter from a firm of attorneys, it would appear that the case has been abandoned, because it has never materialized or assumed the dignity of an action actually brought, although application has been made for defence by the doctor and advice has been given by your counsel. The question involved was one of the treatment of a broken leg.

13. This action is two-fold, an action having been brought by the husband and one by the wife. It is claimed by the wife that she was in good health up to the time that she came to the doctor, that she was then pregnant, and that the doctor was negligent in the delivery of the child, and in omitting to adjust and sew up certain tissues about the birth channel. These two actions will probably be tried eventually as one, one being for personal injuries on the part of the wife and the other one for loss of services on behalf of the husband.

14. This action was based upon a charge of improper treatment of a comminuted fracture of the lower end of the humerus, wherein thereafter appeared a very great deformity, obliteration of the radial pulse and ulnar paralysis. The defendant in this case has an insurance policy, and the insurance company has declined to accept your counsel as the trial lawyer, and the doctor deciding to make use of the privileges of his policy, has accepted the lawyer employed by the insurance company. The case will be tried early in 1914, but in the meantime your counsel is doing the best that circumstances will permit to properly advise the doctor in the position in which he now finds himself.

15. This action is based upon a charge by a married woman plaintiff, that she consulted the defendant in the action, and that he undertook to treat her for a malady which had prevented her from bearing children, and the plaintiff claims by reason of his carelessness she was not cured of her complaint, and that she became afflicted with acute parametritis. This case will be reached in its regular order some time hence.

16. In this particular action the lawyers in the case became very active and demanded of the defendant that he come and settle a case which they claimed they had against him by reason of his carelessness in the treatment of a daughter of the proposed plaintiff. The defendant was somewhat mystified in receiving these demands, in view of the fact that he had never seen the family and had never had anything to do with the child. After extended correspondence your counsel was able to convince the attorneys that they had sought out the wrong doctor, and after some time a letter of apology terminated the litigation.

17. This action was based upon the claim of the plaintiff, that the defendant had been negligent in caring for and treating her for an ailment of her right hand and fingers. Although the complaint does not state what the trouble is all about, it would seem that the plaintiff had had her hand infected and came to the doctor for treatment. His treatment was absolutely proper and right, and there is not a semblance of a cause of action in the case, although it may come to trial.

18. The basis of this action is a claim that the doctor improperly treated a woman, to see whom he had been called by a midwife. He found the plaintiff discharging blood, with a somewhat elevated temperature. It is claimed that within a few days the patient became worse, and that she was taken to a hospital and there operated upon. The doctor asked to be present at the operation which was to be performed, but was not advised until the time the woman died. The doctor applied for defence, but up to date no formal action has been begun. It is clear that what the doctor did was proper, the only thing to do, and the unfortunate termination of the case was by reason of circumstances over which the doctor had no control and could not avoid.

19. This action was begun by the husband as administrator of his wife's estate, she having died following childbirth. It is claimed in the complaint that the doctor was called, plaintiff's wife being pregnant and approaching delivery; that a few weeks later, and at full term, the woman was attended by the doctor for the purpose of delivering her of the child with which she was then pregnant. It is claimed that the doctor was negligent in the use of instruments which it became necessary for him to apply to the child, and in not sufficiently dilating the parts in order to permit the child's delivery. It is stated that he faile l in his attempt to perform version, and neglected to give the patient an anæsthetic, and that eventually in his efforts to remove the fœtus defendant severed the head from the body. There is no evidence of carelessness on the part of the doctor in the case.

20. The basis of this action is a claim made against a doctor for the improper repair to a fracture of the radius and ulna of the plaintiff's left arm, received by his being thrown from an automobile. It is claimed also by the plaintiff that the doctor not only improperly set the fractured ends of the bones, but that he permitted them for an unnecessary length of time to remain out of place, and thereby the plaintiff was caused to suffer more than the ordinary pain incident to such treatment.

21. The basis of the claim in this action is that the doctor treated the patient experimentally, and proceedings were opened by a letter from the patient directed to the doctor to the effect that he intended suing the doctor for $100,000 on account of his negligence. The doctor has been advised by your counsel, and the patient has rested with his threat. This letter of the patient was evidently written for the purpose of attempting to defeat the doctor in securing the amount of his bill, and for no other purpose.

22. This action is one brought against two physicians, one of whom is represented by independent counsel, and the other by me. The claim is that the doctors, examiners in lunacy, through their negligence and carelessness, and with the husband of the plaintiff conspired together to place her in an insane asylum. This case has very many interesting phases, and one of its phases has already gone to the Appellate Division on the questions as to whether or not an insane person can bring an action, as she alleges in her complaint that she was insane and has never been adjudged sane. This case may be reached for trial during 1914, but it is unlikely.

23. This action up to date has never materialized into the form of a summons and complaint, although that may be the outcome eventually. The defendant is a surgeon, and he has sent me a carefully detailed history of the case. The treatment involved an operation around, and a refracture at the hip, which it would appear may have resulted in some impairment of function at that joint, although there seems no chance of their establishing any liability on the part of the surgeon.

24. The facts pertaining to this case refer to treatment in an office of a surgeon, of tears resulting from a former pregnancy. The patient asked advice as to the advisability of an operation and the physician advised none. The woman soon after became pregnant, and it was necessary to take her to a hospital, where, refusing Caesarian section, forceful mechanical delivery was resorted to. The patient had small pelvic opening. She soon became pregnant again after this delivery, and was operated on ahead of term by inducing labor. The patient died.

25. This case is based on an alleged wrong treatment in lupus-erythematosus. The doctor informs me that this woman's attorney says that she paid $250 for treatment, but that is not a statement of accurate fact, as the woman was largely a charity patient. There can be no hope of success in this case.

26. This action is two-fold, one brought by the husband and one by the wife, the wife for personal injuries and the husband for loss of services and money expended. Plaintiff charges that the doctor was grossly ignorant, and that he was rough and unskilful in his treatment of the plaintiff, who was then pregnant, and tore and otherwise injured her, and in addition failed to remove the after-birth, and that she became septic and that she developed milk leg, and was caused unnecessarily to suffer pain incident to her condition, which, if she had been properly cared for, she would not have been called upon to suffer.

27. The basis of this action is a claim that the defendant, who treated the plaintiff for a fracture of the right arm at the wrist, was negligent in caring for him. This case will soon be tried, and as there are some particular facts in connection with it, it will not be discussed just now at greater length. Suffice it to say the case can be successfully defended.

28. This particular claim is based on treatment of an employee of the American Locomotive Co., who, a few days after an injury, developed keratitis. The patient lost one eye, and it is understood that he has settled with the company for a very large amount. I have studied this case very carefully, but I cannot see the slightest semblance of a just claim against the doctor.

29. The basis of this claim is that the doctor did not diagnose correctly what is alleged to be a fracture of the hip of a woman. In the last few years there have been several cases of this kind, none of which have ever been successful.

30. This action is based upon a claim that the doctor failed to remove the appendix in a case wherein he was called to attend the patient who was suffering from what he considered to be appendicitis. This case presents some rather amusing features, one of which is that the Statute of Limitations has run against it, and the other is that the inference to be drawn from the plaintiff's complaint is that the only procedure which any surgeon would take in the case of appendicitis is the immediate removal of the appendix, at all hazards. I doubt if this case will ever come to trial as there is absolutely no merit to it.

31. The claim in this proposed action has never taken on the formality of a summons and complaint. The basis, however, of the action, is one of a woman patient demanding damages from a doctor by reason of her claim that he improperly diagnosticated, and improperly treated a fracture of the radius near the wrist. Although the patient was enthusiastic about her claim last August, it has rested there.

32. This action was begun by the service of a summons only, and subsequently a complaint was served outlining the claim of the plaintiff, which was that she had originally been injured in her right shoulder; that she employed the defendant, and that he undertook to treat her, but that his treatment of the arm and shoulder was unskilful and negligent in that he unskilfully bound the arm of the plaintiff to her body with splints and bandages, etc.; that by reason of this alleged carelessness she suffered unnecessary pain in and about the muscles of her shoulder, and that she has lost some use of her shoulder joint. She also alleges that her nervous system has been interfered with, and that she will have to undergo further operation. This action will be tried early next year.

33. The basis of this claim is the result of treatment in a dispensary, wherein it was claimed the doctor was negligent. All the facts in this case are not before counsel at this time on account of it being a very recent claim.

34. The plaintiff in this action demands $20,000 from defendant by reason of the alleged negligence of the doctor in treating a dislocation and fracture of one of the patient's shoulders, and other physical injuries. Part of the negligence claims is the alleged failure on the part of the doctor in diagnosing the presence of the fracture and dislocation, and by reason of the doctor's carelessness and unskilfulness the patient has suffered unnecessarily, and has been unable to follow his ordinary vocation.

35. This action is brought by the administrator of a deceased infant, who bases his claim as administrator upon the negligence of the doctor to the effect that while the infant was suffering from the symptoms of diphtheria which were plain and clearly evident, the defendant neglected to treat the child for diphtheria, and that owing to such negligence on the part of the defendant the father claims the child died. He also claims that if proper diagnosis had been made and proper treatment given, the child's life would have been saved. This action is for $25,000.

36. The plaintiff in this action is a woman who sues the defendant for improper and careless surgery in removing a growth from one of her abdominal organs. This operation was performed in a hospital, and incident to this operation there were placed, it is claimed, within her abdomen, pieces of gauze which were per-

mitted to remain there for a long period of time and until they were expelled by nature, and by reason of these facts plaintiff contends that she is entitled to recover damages.

37. This action is two-fold, one brought by the wife and the other by the husband, and is brought against a hospital and two doctors. The defendant whom your counsel represents recommended the particular hospital to the plaintiff, although she used her own judgment and that of her husband in selecting it. She was operated on, and after the operation it is alleged that she was burned with bottles or bags, containing hot water which were of a dangerously high temperature. She claims that she has been disfigured, scarred, and permanently injured. The husband sues for loss of services and the wife sues for personal injuries.

38. Application for defence was made in this case. The doctor resides without the State but practices within the State, the cause of action accruing within the State of Pennsylvania. Your counsel is not representing him, but he is represented by another attorney. I consulted with the defendant's attorney recently and advised him with reference to it, but do not expect to take an active part in the trial of the case or to assume the responsibility of his defence.

39. This action was brought against two brothers, one a member of the State Society. Your counsel represents only the one who is a member of the State Society. The action is based upon allegations of negligence and is two-fold, an action having been brought by the husband and one by the wife, for loss of services on his part and for personal injuries on hers. She claims that she was examined, and that the condition from which she suffered was diagnosed as appendicitis, and that one of the defendants was employed to treat her and operate on her. The negligence claimed is that the doctor delayed his operation with a resultant hernia caused by his negligence.

40. This case also is two-fold, the actions being by husband and wife. In neither of the complaints is there an allegation as to what the operation complained of consisted in. In addition to that fact the Statute of Limitations has run against the claim, as the dates fixed show that more than two years have elapsed since the alleged cause of action accrued. There is no fear on the part of counsel of how this litigation will terminate.

41. This action was started when the doctor undertook to collect his bill. The nature of the treatment accorded to the patient, and the fact that the claim was turned over to the State Medical Society, quickly terminated the anxiety of the patient to have it tried.

42. The plaintiff in this action is the administrator of an infant whose death plaintiff claims was caused through the negligence of the defendant; in the first instance when the child was suffering from appendicitis, and secondly when it became necessary to perform an operation, from which it is claimed the patient died. The action is for loss of services of the child.

43. This action was begun by the administrator of the patient, wherein it is claimed that the doctor was negligent in administering, carelessly and negligently, an overdose of chloroform, and in carelessly administering an improper injection of soapy water by reason of which decedent died. This case is at issue and will hardly be tried for a year or two.

44. This action was brought by a young woman who claims that the doctor represented himself to be especially proficient in filling in hollows in the neck of the plaintiff and others, and that incident to his injecting materials for the purpose of increasing her beauty, she was rendered sick, sore and disabled, and alleges that she has been grievously damaged instead of beautified.

45. This action is two-fold, one brought by the husband and the other by the wife, wherein it is charged that the doctor, the defendant, was employed under a contract to render services required to be performed in connection with the birth and delivery of a child with which the wife was pregnant. The plaintiff claims that when the time for delivery came, the doctor refused to attend and treat her, and that she suffered unnecessarily severe pain, nervous shock and mental anguish. She sues for personal injuries, and the husband for loss of services and moneys expended.

46. This action was begun and has been tried this year, and the complaint alleges improper care on the part of the doctor in taking care of the wife at childbirth. This case resulted in a verdict of $500 against the defendant, and is now on appeal and is heretofore referred to in my report.

47. This action was brought this year and tried, and resulted in a verdict for the defendant. This action was against a member of the State Medical Society and a nurse. The nurse was represented by outside counsel. The action was based upon a claim that improper instructions had been given to the patient and to the nurse by the doctor, and as a result of his negligence the patient was given an anema containing bichloride of mercury from which she died, instead of a vaginal douche as the doctor ordered. It transpired that the nurse who had her in charge, in the absence of anyone to help her, permitted the patient herself to insert the nozzle.

48. The claim for damages in this case is based upon the allegation that prior to a date mentioned in the complaint the plaintiff had the free and natural use of his legs, and on a certain day he broke and injured his left leg; that the leg was improperly set and was left out of place for upwards of seven weeks, until it became impossible to set it over again; that the defendant was also careless in that he permitted the leg to become swollen, and that now the leg is diseased and shortened. The amount sued for is $30,000. This action will be tried early in 1914.

49. This action is two-fold, one brought by an infant, and the other by the father, in which the plaintiffs allege that the doctor was careless in treating the child, to whom the defendant was called for the purpose of setting and healing a broken arm. The claim is that the doctor was negligent, and that now by reason of his negligence the child has scars, wounds and paralysis, and the father claims that he has had to expend large sums of money in attempting to cure the condition from which the child is now suffering.

50. This action is brought against two physicians, and is brought by the mother against them, the son not yet being twenty-one years of age. Your counsel represents only one of the defendants. The other is represented by an insurance company, although he is a member of the State Medical Society. The complaint alleges that the boy injured his hip, and that he came under the care of these two defendants, who, making careful examination, diagnosed the condition as a fracture of the hip and he was treated accordingly. The mother now alleges that his hip was not fractured, and because the doctors diagnosed the case as a fracture, she asks damages from them. So far as I can remember, this is the first case I have ever had where it has been alleged in a complaint that the surgeon has been overcareful.

51. This action was begun by the service of a summons only, and although a notice of appearance has been served no complaint has followed it. This case will soon be in position to be dismissed for failure to prosecute. As there is no complaint the statement of the doctor must be a basis of conjecture only as to what the action is about, and reference will not be made to it at this time.

52. In this action the defendant and one of the hospitals are made party defendants. The action is brought by a guardian ad litem in behalf of an infant. It is claimed that by an operation performed by the defendant represented by your counsel, the eyelid of the right eye was caused to droop, and that the doctor was negligent in and about such operation in that he left a piece of a needle within the flesh, which was retained

for a considerable period of time, as the complaint alleges. This case will be disposed of soon.

53. In this case the plaintiff contends that she was suffering from leucorrhea, and that the defendant was negligent and unskilful, in that he prescribed and administered medicines for external and internal use in improper and injurious doses, which instead of curing plaintiff, as plaintiff claims, caused her to have a miscarriage, and that in cleaning her womb the doctor was negligent.

54. This action was begun by a guardian ad litem of an infant. It is claimed that in one of the dispensaries of a large hospital this child was treated by the defendant in the action, medically and surgically; that the defendant undertook to remove some bandages from a cut finger of the child's right hand, and that in removing the bandages it is claimed the child's finger was cut with the scissors by the doctor, and that the child was injured thereby permanently.

55. This is an action in which your counsel is acting as counsel and adviser, other attorneys being the attorneys of record, the defendant being insured, and the insurance company desiring their own counsel to look after the case. The claim seems to have arisen out of an operation for appendicitis and a large number of gallstones, and it is claimed by the plaintiff that, although all the precautions were taken, some strips of gauze were left in the abdomen.

56. This action was brought by an administrator, the basis of the claim being the contention that the plaintiff employed the defendant to attend her in confinement and deliver her of a child, but that the physician was careless in failing to remove the afterbirth in its entirety, and that the afterbirth was allowed to remain in her womb for three days, and that she finally had puerperal sepsis from which she died later.

57. This action was brought by the husband and wife, claiming that the doctor had been negligent in curetting her uterus after an inevitable abortion, and in addition it appears by the pleadings that he is charged with constructive assault, in that he performed a secondary curettement without her consent. Other attorneys began the defence of this action, but your counsel was substituted and has gone on with the defence of the case. This case presents many interesting questions and subjects, and the damages demanded are very large, based upon the claim that the wife was made insane through the negligence of the doctor. This case will be tried early in 1914. *Later*—This case went to the jury and resulted in a verdict for the defendant in both cases, which were tried at the same time.

Your counsel has been called upon during the year, as has been usual for the last several years, to do a great amount of work and render a great deal of advice, entirely outside his contract. The reason for this is that the profession does not understand that your counsel's contract is limited and confined to one class of effort only, but he has gone on advising and rendering such services as requested, without consideration.

During the year many important matters have been presented, among which has been the establishment of the Medical Society of the County of the Bronx, an area carved out of the County of New York and made a separate county. It is many years since this has occurred, and there have been no precedents available to your counsel, and special care has been taken, meetings attended and advice given, in order that immediately after the first of January, 1914, there might be established in this new County a representative County Medical Society, under the best auspices.

Your counsel is glad to report that in no case of malpractice has any member of the State Society been called upon to pay money. The case referred to heretofore will, beyond doubt, be reversed as it should be, and upon a second trial, if any is ever held, there will be no verdict. The verdict rendered was evidently a sympathetic one, entirely independent of the rights of the parties or the testimony in the case.

Your counsel should feel that he had not done his full duty if he did not again express his deep feeling of appreciation for the many courtesies extended by those of the medical profession with whom he has come in contact, and to add that their active and earnest coöperation and assistance have materially lessened the difficulties of his task, which otherwise would have been unsurmountable, and the satisfactory results attained, impossible.

The year 1913 has been by far the most strenuous year of your counsel's relationship to the medical profession. Greater work and sacrifices have been demanded and accomplished than ever before. We may well congratulate ourselves upon the year's work.

All of which is respectfully submitted,

James Taylor Lewis,
Counsel.

December 31, 1913.

REPORT OF THE COUNCILOR OF THE FIRST DISTRICT BRANCH.

To the House of Delegates:

Owing to an exasperating illness, which has incapacitated me for nearly a year, I have been able to give very little attention to the duties devolving upon me as President of the First District Branch. Those duties have been very kindly assumed by the Vice-President, Dr. H. Lyle Winter, of Cornwall, to whom is due all the credit for one of the best meetings ever held by this Branch.

The meeting place was Yonkers and the program, arranged by Dr. Winter, was well balanced, not too long, the papers all of great interest and of educational merit, and the discussions illuminating. The local arrangements, and entertainment, planned by a committee of Yonkers physicians, was pleasing and all that could be desired. The attendance, which was large, was fairly representative of the seven important counties comprising the First District Branch. The following officers elected for the ensuing year bespeak increased interest and attainment:

President—H. Lyle Winter, Cornwall; Vice-President, James E. Sadler, Poughkeepsie; Secretary, Charles E. Denison, New York; Treasurer, Thomas F. Goodwin, Mt. Vernon.

Although unable, for reasons stated above, to carry out the provision of Section five of Chapter five of the by-laws, I am reliably informed that

there is renewed activity in all of the six counties having county societies, Putnam having none, and that the work is being satisfactorily accomplished.

Respectfully submitted,

JOHN C. OTIS,
President First District Branch.

December 31, 1913.

REPORT OF THE COUNCILOR OF THE SECOND DISTRICT BRANCH.

To the House of Delegates:

The annual meeting was held in Brooklyn on November 24, 1913, in the auditorium of the Medical Society of the County of Kings. There was an unusually large attendance and the address of the evening was discussed with great interest.

All the county societies were well represented. Among those present were: Dr. James M. Winfield, President, Medical Society of the County of Kings; Dr. Frank Overton, Secretary, Suffolk County Society, and Dr. James S. Cooley, representing the Queens-Nassau Medical Society, and Vice-President of the Second District Branch.

The scientific session of the program consisted of an address by Dr. Robert Abbé on "The Present Aspect of Radium Work," supplemented by many plaster-of-Paris casts of cancer cases treated by this method.

The discussion was very ably opened by Drs. John O. Polak, Paul M. Pilcher and Jacob Fuhs, of Brooklyn, and continued by other members present.

The following officers were elected for the ensuing year: James S. Cooley, Mineola, President; A. H. Terry, Patchogue, Vice-President; Charles Eastmond, Brooklyn, Secretary.

On October 30, 1913, the President made an official visit to the Suffolk County Medical Society on the occasion of their 117th Annual Meeting, at Riverhead. There was an excellent program presented, Dr. James M. Winfield reading a paper on syphilis. Addresses were made by Dr. Guy H. Turrell, President of the Society; by Dr. William Francis Campbell, President of the Medical Society of the State of New York, and by Dr. Victor A. Robertson, President of the Second District Branch.

The members of the Society and their guests were hospitably entertained at dinner during the course of the meeting.

There is nothing of note to mention regarding the various societies constituting the Second District Branch, all seem to be prospering.

The annual meeting is of undoubted value, as it permits the members of the constituent societies to discuss matters of mutual interest and thus become better acquainted.

Respectfully submitted,

VICTOR A. ROBERTSON,
President Second District Branch.

December 31, 1913.

REPORT OF THE COUNCILOR OF THE THIRD DISTRICT BRANCH.

To the House of Delegates:

The Third District Branch held its annual meeting in Catskill, October 25, 1913, with fifty members in attendance. We were honored with the presence of the President of the State Society, which was highly appreciated by all. The Medical Society of the County of Greene acted as host, entertaining the visitors. The program with one exception was followed out with time for discussion. The meeting was held in the Court House. I have so far been able to visit but one Society in the District, that of the County of Ulster, but hope before the meeting of the State Society to have visited them all.

The following officers were elected for the ensuing year: President, Robert Selden, Catskill; Vice-President, A. H. Traver, Albany; Secretary, J. N. Vander Veer, Albany; Treasurer, Mary Gage-Day, Kingston.

Respectfully submitted,

ROBERT SELDEN,
President Third District Branch.

December 31, 1913.

REPORT OF THE COUNCILOR OF THE FOURTH DISTRICT BRANCH.

To the House of Delegates:

In arranging our work in the Fourth District Branch, we found that it would not be possible to visit all of the County Meetings, and therefore decided to devote what time we could to those counties that appeared to need it the most, and especially where there was a prospect of adding new members.

Essex County, with a registration of 46 physicians and 18 members had no society. This we succeeded in reorganizing September 8th, with an addition of eight new members to the State Society, and at a recent special meeting six more were taken in.

St. Lawrence County, with 119 registered physicians and 56 in the Society was urged to make an effort to add new members, but so far only two have been added to the Society.

Franklin County has added four members, but will lose some that will join the Essex County Society.

Clinton County has made her loss to the Essex County Society more than good by the addition of eight members.

Warren, Washington and Saratoga Counties have not added to their membership, but their societies are all in a prosperous condition.

Schenectady, Montgomery and Fulton Counties with their cities and hospitals are in active and prosperous condition.

The annual meeting was held at Fort Edward, October 14th. There was a good attendance, and we were honored by the presence of our State President, Dr. Campbell, and State Secre-

tary, Dr. Townsend. We also had the pleasure of listening to a paper by Dr. Abraham Jacobi, Ex-President of the American Medical Association.

The program as published in the Journal was carried out, with the exception of a few numbers, the readers of which were not able to be present.

At the business meeting there was not a quorum of delegates present, hence there was no election of officers.

All of which is respectfully submitted.

Silas J. Banker,
President of the Fourth District Branch.
December 31, 1913.

REPORT OF THE COUNCILOR OF THE FIFTH DISTRICT BRANCH.

To the House of Delegates:

The President of the Fifth District wishes to report that all the County Societies show robust health.

On October 2, 1913, the meeting of the Fifth District Branch was held in Oneida, New York, about 130 physicians being present. Everyone seemed to take great interest in the sessions.

In the words of a prominent member of the profession present, "The annual meeting of the Fifth District was an honor to the officers, and the medical profession of Oneida and Madison Counties."

After welcoming the guests, the President, Dr. Otto Pfaff, of Oneida, spoke of the members who had responded to their "Last call:" Dr. Nathan Jacobson, Dr. Albert S. Hotaling, Dr. George A. Edwards, Dr. Edwin C. Reams; they were also feelingly referred to by subsequent speakers.

The program was very interesting and instructive.

The following officers were elected for the ensuing year: President, Frederick H. Flaherty, Syracuse; Vice-President, William D. Garlock, Little Falls; Secretary, James F. McCaw, Watertown; Treasurer, George F. Mills, Oneida.

The next annual meeting will be held in Syracuse.

Respectfully submitted,

Otto Pfaff,
President Fifth District Branch.
December 31, 1913.

REPORT OF THE COUNCILOR OF THE SIXTH DISTRICT BRANCH.

To the House of Delegates:

The officers of the Sixth District Branch beg leave to submit their report for the year. There has prospered throughout the district the work of the profession. There has been accord in the County Societies with good attendance and awakened interest. Of the smaller bodies, such as Schuyler, Delaware and Otsego, the members are few and scattered. Their meetings are few and State and District Officers and members unfortunately visit their meetings but infrequently. It has been my privilege to have had but two invitations to meet with County Societies; those of Cortland at the joint meeting with Tompkins, and the annual meeting of Chenango, not that a presidential visitation is at all necessary, yet it would seem that better co-operation would prove most acceptable and worthy of adoption. The railway connections in the district are bad and the solution is one of good roads and automobile communication.

The president visited a good meeting of the Keuka Lake Medical Society. The annual meeting of the district was held at Stimson Hall, Ithaca, and despite the prolonged rain the attendance was excellent and the program well discussed. The advancement of the date of this meeting permanently to the first Tuesday in October will have a most salutory effect as means of travel will then be of the best.

The Council Meeting of the district held in Binghamton in June was the means of bringing all officers easily together and getting full discussion of needs in the district and formulating the annual program.

For the first time the Councilor, Delegate and members of Steuben have been with us and we welcome them heartily.

There is more than evident need in some of our counties of state help in the regulation of practice and application of present laws to the restriction of those unqualified to practice. Action in this has been taken with favorable vote, by more than half the County Societies of the District. It is purposed to bring the whole mater before the House of Delegates in April next.

Your officers have had the utmost help from State Secretary Townsend and his office.

The following officers were elected for the ensuing year: President, Thomas F. Manley, Norwich; Vice-President, Arthur D. Booth, Elmira; Secretary-Treasurer, R. Paul Higgins, Cortland.

Next annual meeting Norwich, Tuesday, October 6, 1914.

Respectfully submitted,

Luzerne Coville,
President Sixth District Branch.
December 31, 1913.

REPORT OF THE COUNCILOR OF THE SEVENTH DISTRICT BRANCH.

To the House of Delegates:

The Seventh District Branch of the Medical Society of the State of New York held a Joint Meeting with the Eighth District Branch, at Sonyea, N. Y., September 25, 1913. Inasmuch as

the weather was so very fine, it was rather a disappointment that the attendance at the meeting was not larger. The program presented was well discussed and the two branches had the pleasure of listening to an inspiring address by the President of the State Society, Dr. William Francis Campbell, of Brooklyn.

During the year, as one of my duties I have visited six of the seven County Societies included in the Seventh District Branch and expect to visit the Society of the other County in January, 1914.

The officers of the Seventh District Branch were re-elected for the year 1914, as follows: President, William T. Shanahan, Sonyea; Vice-President, Frederick J. Bowen, Mt. Morris; Secretary, J. F. Myers, Sodus; Treasurer, H. J. Knickerbocker, Geneva.

It is my opinion that if the members of our various County Societies, not only in this District but in other Districts, would take a little livelier interest in medical matters that their respective meetings could be made much more valuable than is often the case at the present time.

The place of meeting for 1914 has not as yet been decided upon, but in all probability will be held at a central point in the District.

Respectfully submitted,

WILLIAM T. SHANAHAN,
President Seventh District Branch.

December 31, 1913.

REPORT OF THE COUNCILOR OF THE EIGHTH DISTRICT BRANCH.

To the House of Delegates:

During my term of service as President of the Eighth District Branch, I have visited the medical societies of the Counties of Allegany, Cattaraugus, Chautauqua, Erie, Niagara and Wyoming. Conflict of dates and professional engagements have interfered with the Orleans County meetings, but I expect to meet with this society at an early date. I have been ably assisted in placing before the meetings of the various societies the advantages of belonging to the organized profession by Dr. Albert T. Lytle, the second Vice-President, who has accompanied me on most of the visits. Generally speaking, the different County Societies embrace the great majority of the eligible physicians, Chautauqua Society in particular, being very strong in its membership. Wyoming County also shows up exceedingly well. The point that impresses me most strongly is that the recruiting of the different societies rests largely upon a few earnest, active men who never let an opportunity slip by to enlist a good man, and to whom no effort is too great, and no time or place inappropriate in which to urge the benefits of membership in the Society of organized medicine. The men to whom particular credit is due are, Dr. J. W. Morris, of Chautauqua; Drs. Grover W. Wende and Albert T. Lytle, of Erie, and I wish here to acknowledge my indebtedness to them for their cordial support during the past year.

In compiling some statistics in reference to the membership of the Eighth District, the following figures are not without interest. They are taken from the official State Directory, and are therefore assumed to be approximately correct. In the State at large there were at the time of the issue of the Directory 13,777 physicians and of this number 7,388 were members of the Medical Society of the State of New York, a percentage of 53.6. In the Eighth District Branch there were 1,247 physicians, with a society membership of 865, a percentage of 69.36. If the Eighth District be deducted from the State at large, the figures are 12,530 physicians, and a society membership of 6,523, giving a percentage of 51.9. This gives the Eighth District Branch an advantage of 17.46 per cent. May not the Eighth District Branch say to the State at large without any bombast or feeling of self-sufficiency, "Go and do thou likewise?"

The annual meeting was held at the Craig Colony for Epileptics at Sonyea, at the invitation of Dr. W. P. Shanahan, President of the Seventh District Branch. The meeting was attended quite well and was noted for the scientific character of the papers presented. It was addressed by the President, Dr. Campbell, who spoke of the needs and policy of the State Medical Society. The meeting was entertained by Dr. Shanahan to whom the Eighth District Branch desires to extend its sincere appreciation of all that was done for its comfort and entertainment.

The election of officers for the ensuing year was as follows: President, Arthur G. Bennett, Buffalo; First Vice-President, C. G. Leo Wolf, Niagara Falls; Second Vice-President, Albert T. Lytle, Buffalo; Secretary, E. A. Sharp, Buffalo; Treasurer, F. H. Van Orsdale, Belmont.

Next Annual Meeting, Buffalo, the date to be decided by the Executive Committee.

Respectfully submitted,

ARTHUR G. BENNETT,
President Eighth District Branch.

December 31, 1913.

HOUSE OF DELEGATES.

The regular annual meeting of the House of Delegates of the Medical Society of the State of New York was held in College Hall, Hotel Astor, New York City, April 27, 1914, at 8.30 P.M., Dr. William Francis Campbell, Brooklyn, President, in the Chair; Dr. Wisner R. Townsend, New York, Secretary.

On the roll call the following members answered to their names:

A. J. Bedell, T. W. Jenkins, F. C. Conway, C. R. Bowen, M. R. Bookman, W. M. Dunning, W. G. Eynon, H. Roth, L. H. Quackenbush, V. M. Griswold, C. H. Richard, A. W. Booth, P. B. Brooks, J. B. Ransom, F. D. Reese, J. E. Safford, A. L. Peckham, F. W. Barrows, G. F. Cott, E. L. Frost, A. T. Lytle, T. H. McKee, J. Richter, W. H. Thornton, J. V. Woodruff, C. G. Stockton, H. C. Finch, V. M. Rice, W. G. Rommel, W. Browning, E. E. Cornwall, C. G. Crane, W. J. Cruikshank, J. W. Fleming, O. A. Gordon, E. A. Griffin, G. R. Hawley, O. P. Humpstone, J. W. Ingalls, J. R. Kevin, W. D. Ludlum, J. C. MacEvitt, J. O. Polak, J. C. Rushmore, J. M. Winfield, R. F. Barber, B. Harris, S. J. McNamara, E. N. K. Mears, G. K. Collier, W. E. Brown, O. E. Jones, W. T. Mulligan, J. M. Swan, J. R. Williams, C. F. Timmerman, H. Barclay, T. P. Berens, J. A. Bodine, N. E. Brill, M. L. Carr, W. L. Carr, F. M. Crandall, W. L. Culbert, E. E. Harris, C. Herrman, W. B. Hoag, H. S. Houghton, H. Lilenthal, S. Lloyd, R. L. Loughran, J. M. Mabbott, J. J. MacPhee, R. S. Morton, W. C. Phillips, S. J. Kopetzky, A. C. Prentice, C. H. Richardson, W. Shannon, T. S. Southworth, J. B. Squier, H. S. Stark, I. D. Steinhardt, R. Waldo, B. H. Wells, J. V. D. Young, F. Van Fleet, E. Shoemaker, F. J. Douglas, H. G. Jones, F. H. Peck, C. E. Coon, A. E. Larkin, D. H. Murray, A. L. Beahan, R. F. Medrick, H. L. Winter, I. F. Barnes, C. Boettiger, C. D. Cleghorn, R. F. MacFarlane, E. Howd, W. Kirk, G. A. Leitner, W. B. Hanbidge, D. C. Moriarta, F. C. Reed, J. M. Quirk, J. A. Conway, S. B. Allen, M. B. Heyman, C. S. Payne, L. Coville, H. Van Hoevenberg, H. E. Clarke, E. A. Nevin, T. F. Goodwin, L. C. Broughton, H. W. Matthews. Total, 118.

The following officers and chairmen of committees were present:

William Francis Campbell, President; W. Stanton Gleason, First Vice-President; Gerrit F. Blauvelt, Second Vice-President; Myron B. Palmer, Third Vice-President; Wisner R. Townsend, Secretary; Alexander Lambert, Treasurer; Thomas J. Harris, Chairman Committee on Scientific Work; Charles H. Richardson, Chairman Committee on Arrangements; also the following councilors: Silas J. Banker, Fourth District Branch; Luzerne Coville, Sixth District Branch; William T. Shanahan, Seventh District Branch; Arthur G. Bennett, Eighth District Branch.

A quorum having answered to their names, President Campbell declared the meeting open for business, and said: "The Secretary will now read the minutes of the previous meeting."

THE SECRETARY: As the minutes of the previous meeting were published in the Journal for May, 1913, I move they be adopted as printed.

DR. WENDELL C. PHILLIPS: I second the motion. Carried.

THE PRESIDENT: The next order is the report of the President.

DR. E. ELIOT HARRIS: As the report of the President has been printed and is so full of ideas and suggestions, I do not believe that this House, as constituted, has the time, with the limitations put upon it, to properly consider it; therefore, I move that this House resolve itself into the Committee of the Whole to consider the President's report and the recommendations contained therein.

Motion seconded by several and carried.

THE PRESIDENT: I will appoint Dr. Harris Chairman of the Committee of the Whole, but before proceeding I will ask the Secretary to read a telegram, which he has prepared.

The Secretary read the following:

April 27, 1914.

HON. MARTIN H. GLYNN,
Albany, New York.

The House of Delegates assembled for the one hundred and eighth annual meeting of the Medical Society of the State of New York extend their felicitations to the Governor on the veto to protect the people of the State from incompetent practitioners of the healing art. It also congratulates the people on having so fearless and clear-sighted a man as its chief executive.

Medical Society of the State of New York,
WISNER R. TOWNSEND, Secretary.

It was moved and seconded that the telegram just read by the Secretary be sent to the Governor. Carried.

President Campbell then asked Dr. Harris to assume the Chairmanship of the Committee of the Whole.

The Chairman called the Committee of the Whole to order and stated that the business before the committee was the consideration of the recommendations contained in the President's report. See p. 254.

In the matter of the NEW YORK STATE JOURNAL OF MEDICINE, Dr. Wendell C. Phillips moved that it is the sense of the Committee of the Whole that the State Journal should remain as under the present management; that the entire time of a business manager would not be more efficient than the efforts of a committee of professional men; that it is the sense of this Committee of the Whole that the Journal's possibilities are being quite fully realized, and that its business is being conducted according to modern methods of efficiency.

Motion seconded and carried.

As to Malpractice Defense, Dr. Frank Van Fleet moved that the malpractice defense of the Medical Society of the State of New York be continued as it is without any change.

Motion seconded and carried.

As to the Directory, Dr. Van Fleet moved that it is the sense of this body that the Directory is of sufficient importance to the Society as a whole to warrant its publication.

Motion seconded.

Dr. T. Passmore Berens moved to amend that the Directory be published yearly as at present.

The amendment was seconded, accepted, and the original motion as amended was put and carried.

It was moved and seconded that the Committee of the Whole rise and report to the House. Carried.

President Campbell then called the House of Delegates to order, and called on the Chairman of the Committee of the Whole to report.

DR. HARRIS (Chairman of the Committee of the Whole): In reporting for the Committee of the Whole, I do so with the feeling that the President in his report was filled largely with the consideration of the individual practitioner of this State. Every paragraph in his report is full of concern for the well being and general benefit of the practitioners of this State, and it is hoped that this State Society, this State scientific body, can extend its activities so as to be more careful of the economic interests of the medical profession and the general practitioner, and yet, if I may quote from a section of his report, he says: "The function of the State Medical Society is not general, it is specific; it is to do for its individual units what they cannot do for themselves; it is primarily a protective function; its aim is to better safeguard the interests of its individual members, and thereby sustain the dignity of the medical profession in the various communities throughout the State." In another part of his report he says: "The State Society is for the benefit of the individual member, and as it solves his problem, so will it command his respect."

I wish to state that the individual also ought to make sacrifice for the profession of the State, and it is incumbent upon him to support the publication of the Journal and the Directory of the State Society, which are not the result of any sporadic action on behalf of

this Society, but the result of the most careful consideration of years of a general committee of the Society, and the Society met, debated, and considered what were the interests that could be best furthered by a scientific society represented by the Medical Society of the State of New York, whose ideals and traditions are protected in these publications, and, therefore, in moving the adoption of the report, which includes the adoption of the motions made and carried in the Committee of the Whole, I do so with all respect to the large heartedness of our President.

Motion seconded and carried.

THE PRESIDENT: The next order of business is the Report of the Council. See p. 256.

The Secretary read the recommendations in the report.

THE PRESIDENT: What will you do with the Report of the Council?

DR. PHILLIPS: I move that it be received and adopted.

Motion seconded and carried.

THE PRESIDENT: The next item is the Report of the Secretary. See p. 255.

The Secretary read the recommendations in his report.

THE PRESIDENT: What disposition will you make of this report?

DR. PHILLIPS: I move that the report of the Secretary be received and adopted.

Motion seconded and carried.

THE PRESIDENT: The report of the Treasurer. See p. 260.

DR. ALEXANDER LAMBERT: There are no recommendations in the report of the Treasurer.

THE PRESIDENT: What will you do with the report of the Treasurer?

DR. BOOTH: I move that the report be accepted as published.

Motion seconded and carried.

The next report is from the Committee on Scientific Work. See p. 266.

THE PRESIDENT: What will you do with it?

It was moved that the report be accepted as printed. Motion seconded and carried.

THE PRESIDENT: The next order of business is the report of the Committee on Legislation. See p. 264.

In the absence of Dr. Neff, Chairman, the report was read by the Secretary.

It was moved and seconded that the report be received and adopted. Carried.

THE PRESIDENT: We will listen to the report of the Committee on Public Health. See p. 264.

The Secretary read the report of this committee.

THE PRESIDENT: This report is before you. What will you do with it?

THE SECRETARY: I move it be referred to the Committee on Legislation with power.

Motion seconded.

DR. HOWARD LILIENTHAL: I think that part of the report in reference to an appropriation of $100,000 for radium ought to be left out as the time is not ripe for asking the Legislature to appropriate that amount. Radium has not been shown as yet to be a cure-all.

DR. SAMUEL LLOYD: I move to amend that the report be received and adopted, with the exception of that part of it referring to radium.

The amendment was seconded, accepted, and the original motion as amended was carried.

THE PRESIDENT: The next is the report of the Committee of Arrangements. See p. 266.

Dr. Charles H. Richardson, Chairman of the Committee on Arrangements, reported that satisfactory arrangements had been made for the meetings of the five sections in the Hotel Astor, which would also be the headquarters.

THE PRESIDENT: You have heard the report. What will you do with it?

It was moved and seconded that the report be accepted.

Motion carried.

THE PRESIDENT: The next is the report of the Committee on Medical Research. See p. 265.

It was moved that the report be adopted as published.

Motion seconded and carried.

THE PRESIDENT: Reports of Special Committees.

Dr. Edward D. Fisher read the report of the Committee on Prize Essays, as follows:

To the House of Delegates:

The Committee on Prize Essays would respectfully report that no essay has been presented for the Merrit H. Cash Prize, and but one for the Lucien Howe Prize.

The latter is of so much value we believe it worthy to be awarded the prize. The name of the author is contained in the envelope bearing the motto "Cogito Ergo Sum." Dr. Fisher opened it and found the author to be Mark J. Schoenberg: "A Contribution to the Experimental Study of Ocular Anaphylaxis."

A. VANDER VEER,
EDWARD D. FISHER,
J. F. W. WHITBECK,
Committee.

THE PRESIDENT: You have heard the report of this committee. What is your pleasure?

It was moved and seconded that the report be adopted. Carried.

THE PRESIDENT: The next is the report of the Committee Appointed to Consider the Question of the Prosecution of Illegal Practitioners. See p. 266.

Dr. R. P. Higgins, Chairman, presented the report.

THE PRESIDENT: What will you do with this report?

Dr. Rosalie S. Morton stated that although this matter was referred to in the Committee of the Whole, this specific report has not yet been considered. It should be fully discussed.

DR. SAMUEL LLOYD: I move that the report be received and the recommendations adopted.

Motion seconded and after discussion on being put to the House was declared lost.

DR. MABBOTT: I now move that the report be received and placed on file.

Motion seconded and carried.

THE PRESIDENT: The next special committee.

The Secretary presented a supplementary report of the Committee on the Regulation of the Introduction of Medical Expert Testimony.

Your special committee on Medical Expert Testimony desires to make the following supplementary report:

The bill as set forth in our original report was introduced in the Assembly and Senate, but we were unable to get action upon the bill this year. We will continue to work upon this bill if the House of Delegates desires to have us continue the work.

We respectfully suggest that the Chairman of the Committee on Legislation be added to this committee.

We respectfully suggest that the committee be reappointed and given the same powers as heretofore.

DWIGHT H. MURRAY, *Chairman.*

THE PRESIDENT: What will you do with this report?

DR. PHILLIPS: I move that it be received and adopted.

Motion seconded and carried.

THE PRESIDENT: The next special committee is the report of the Counsel. See p. 268.

DR. PHILLIPS: I move the report be received as printed and placed on file.

Motion seconded and carried.

THE PRESIDENT: Reports of Councilors of District Branches. See p. 272.

It was moved that the reports of the Councilors of the First, Second, Third, Fourth, Fifth, Sixth, Seventh, and Eighth District Branches be received and placed on file.

Motion seconded and carried.

THE PRESIDENT: The next order is Unfinished Busi-

ness. Is there any unfinished business to come before the meeting?

The Secretary read the amendments to the Constitution presented at the last meeting, and they were duly seconded and adopted.

Section 2 of Article II:

Sec. 2. The term county medical society as used in this Constitution shall be deemed to include all societies now in affiliation with this society or which may be organized and chartered by the House of Delegates.

Sections 1 and 3 of Article III:

Section 1. The officers of the Society shall be a President, three Vice-Presidents, a Secretary, a Treasurer, and one Councilor from each District Branch. They shall be elected annually by ballot for the term of one year, except the Councilors, and the majority of the votes cast shall elect.

The President, Vice-President, Secretary and Treasurer shall be elected by the House of Delegates. At the first election in the District Branch societies hereafter held, the Councilors for the First, Second, Third and Fourth District Branches shall be elected for the term of two years. The Councilors for the Fifth, Sixth, Seventh and Eighth District Branches shall be elected for one year, and thereafter all Councilors shall be elected for the term of two years by the District Branch of the District in which they reside and shall be the respective Presidents thereof.

Sec. 3. No delegate elected to the House of Delegates shall be a candidate for a general office in the Society until after the expiration of the term for which he shall have been elected a delegate, and no person shall be elected to any office in the Society who shall not have been a member of the Society for two years immediately preceding the date of his election.

SECTION 1 AND 2 OF ARTICLE VII.

FUNDS.

Section 1. Funds shall be raised by an annual per capita assessment on each county society at a uniform per capita rate throughout the State. Funds may also be raised by voluntary contributions, by the sale of the publications of the Society, and in any other manner approved by the House of Delegates. No funds of the Society shall be appropriated for any purpose except by authority of a resolution of the Council, nor shall any indebtedness be incurred by officers, members of committees or members of the Society until the same shall have been approved by the Council.

Sec. 2. The State annual per capita assessment shall be $3.00 and shall be collected by the county treasurers at the same time and as part of the county dues, and shall be remitted to the State Treasurer by the treasurer of each county society on or before the first day of June of each year.

THE SECRETARY: It is necessary to take action on the motion by Dr. E. Eliot Harris, presented last year in accordance with Article VI, Section 1, of the Constitution, relative to the time and place of holding the annual meeting.

DR. HARRIS: I move its adoption.

Seconded and carried.

Dr. E. Eliot Harris moved, in accordance with Article VI, Section 1, of the Constitution, that notice is hereby given that a motion will be made at the next annual meeting to change the time and place of meeting.

Motion seconded and carried.

THE PRESIDENT: Where will this Society hold its meeting next year, and at what date?

Dr. Charles A. Stockton, of Buffalo, extended a warm invitation to the Society to hold its next Annual Meeting in Buffalo, and moved that when the Society adjourns, it adjourn to meet in Buffalo in 1915.

DR. JAMES W. FLEMING: I second the motion. Carried.

THE PRESIDENT: The date of the meeting?

It was moved that the next Annual Meeting be held on the last Tuesday in April, 1915, namely, April 27th (the House of Delegates will thus meet on April 26th).

Motion seconded and carried.

THE PRESIDENT: Any further new business?

THE SECRETARY: There is a recommendation for honorary membership, Dr. John George Adami, Montreal, Quebec, recommended by Drs. Fox, Whitbeck, and Elsner.

THE PRESIDENT: What will you do with this recommendation?

DR. PHILLIPS: I move the recommendation be concurred in.

Motion seconded and carried.

THE PRESIDENT: Anything further?

THE SECRETARY: Dr. Edward G. Rave, Hicksville, desires to be placed on the retired list. The Secretary stated that his application is properly endorsed.

THE PRESIDENT: What will you do with this request?

DR. PHILLIPS: I move the request be granted.

Motion seconded and carried.

THE PRESIDENT: Is there any further new business?

Dr. Brooks H. Wells, New York, offered the following preambles and resolution, and moved their adoption:

Resolutions for the establishment of a Committee on Health and Public Instruction in the Medical Society of the State of New York:

WHEREAS, The Public Health Education Committee has been made a standing committee of the Council on Health and Public Instruction of the American Medical Association; and

WHEREAS, The Council on Health and Public Instruction has recommended that a Committee on Health and Public Instruction be established by each state society; and

WHEREAS, The Committee has offered in other states the best method of reporting organized, free-lecture work carried on by doctors; and

WHEREAS, The Committee, through its course of lectures on the prevention of disease, has increased the good-will of the public toward the medical profession; and

WHEREAS, It is only through organized effort that the best results in the work on the prevention of disease can be accomplished; and

WHEREAS, The annual expense of said Committee has been less than fifty ($50) dollars in many states, to the State Society; and

WHEREAS, This Committee has been formed and recognized by the State Society in twenty (20) states; therefore, be it

Resolved, That the Medical Society of the State of New York authorize the appointment of a Sub-Committee on Health and Public Instruction as part of the Public Health Committee of the Medical Society of the State of New York.

Motion seconded and carried.

THE PRESIDENT: Is there any further new business?

DR. COVILLE, Ithaca: Under the head of new business, I would suggest, Mr. President, the following resolution, and I so move, that the Medical Society of the State of New York appoint a special committee of ten to be known as The Medical Educational Committee, who shall endeavor to secure the coöperation of the Board of Regents, and shall act in conjunction with the Board of Regents to obtain a modification of the state education law, in so far as it relates to medical practice, as follows:

1. A candidate for a license to practice medicine in addition to the four-year course in a medical school now required, shall furnish evidence of preliminary education consisting of a diploma from a high school recognized by the Regents of the State of New York (equivalent to 72 counts).

2. And a year of study of college grade in the subjects of physics, chemistry and biology.

3. The year of work of college grade in physics, chemistry and biology may be given in the medical school as the first year of a five-year medical course.

4. The law to take effect January 1, 1919.

Requirements as high as those above-stated have been announced as being required by all of the following

colleges: Columbia University, Cornell University, Syracuse University, Fordham University, University and Bellevue Hospital Medical College, Albany Medical College, Long Island Medical College, University of Buffalo.

The above colleges have made this announcement to take effect in 1914, if not already in force, or if not having higher requirements. Any student entering in 1914 would graduate in 1918. By placing the date at which the above suggestion would take effect, January 1, 1919, one year leeway would be given to take care of cases where it might otherwise work hardship.

THE PRESIDENT: When is this committee to report?

DR. COVILLE: It is to report to the House of Delegates next year.

Motion seconded and carried.

THE PRESIDENT: Is there any further new business?

DR. M. B. HEYMAN, Central Islip: I have some resolutions I desire to present and move their adoption. They are as follows:

WHEREAS, The entry of insane and mentally defective immigrants to this country is a menace to the mental health of the Nation, not only in the present, but in succeeding generations; and

WHEREAS, As pointed out by Governor Glynn in a special message to the Legislature of New York, this State bears an unequal part of the burden of caring for insane and mentally defective aliens; and

WHEREAS, The present immigration laws, although providing for the exclusion of such immigrants, do not provide adequate means for their examination by trained experts nor for effective measures for the return of insane aliens who become inmates of our institutions; and

WHEREAS, These are primarily matters of public health; therefore be it

Resolved, By the House of Delegates of the Medical Society of the State of New York, that Congress be urged to provide for the mental examination of arriving immigrants by physicians in the United States Public Health Service especially trained in the diagnosis of insanity and mental defects; to provide adequate facilities for the detention and careful mental examination of all immigrants at large ports of entry; to provide for the detail of American medical officers on vessels bringing immigrants to this country in order that their welfare may be safeguarded and those with mental diseases or defects discovered; to provide for the assumption by the Federal Government of an equitable share of the burden of caring for dependent aliens which is now borne entirely by the states and to provide for the safe and humane return to their own home of those immigrants whom it is necessary to exclude and of those aliens in our public institutions who desire to return; and be it further

Resolved, That copies of this resolution, duly attested, be sent to the President and the Vice-President of the United States, the Secretary of Labor, the Surgeon-General of the United States Public Health Service, the Commissioner-General of Immigration, the Chairman of the Senate and of the House Committees on Immigration and to each member of the New York State Delegation in Congress.

Motion seconded and carried.

THE PRESIDENT: Any further new business?

DR. DWIGHT H. MURRAY, Syracuse: Since our last meeting four members of the State Society who have been most prominent in their work in this body, and who have been beloved by all, have died. I refer to Dr. Egbert Le Fevre, Dr. Joseph D. Bryant, Dr. Roswell Park, and Dr. Nathan Jacobson. I move you, Mr. President, that a special committee of three be appointed to draft a memorial to be presented to this House of Delegates.

The Chair appointed Drs. Alexander Lambert, Edward D. Fisher and Dwight H. Murray.

Dr. Bennett, of Buffalo, offered the following amendments to the Constitution and By-Laws.

Amend Article III of Constitution, Section 1, by adding after the word Secretary, the words "also an *Assistant Secretary,*" and after the word Treasurer, "also an *Assistant Treasurer.*"

Amend Article V by adding after the word Society in the second line, the words "except the *Assistant Secretary* and the *Assistant Treasurer.*"

Amend the By-Laws by adding to Chapter VI, a section 3a to read as follows:

"The *Assistant Secretary* shall aid the Secretary in the work of his office, and in his absence or inability to act, perform the duties of the latter until he shall resume his duties or in case of a vacancy until a successor shall be appointed."

And add to Chapter VI, a section 4a to read as follows:

"The *Assistant Treasurer* shall aid the Treasurer in the work of his office, and in his absence or inability to act, perform the duties of the latter until he shall resume his duties, or in case of a vacancy until a successor shall be appointed."

Amendments received and ordered printed, and to follow regular course prescribed in Constitution, and By-Laws.

Dr. John Van Doren Young, New York, offered the following preambles and resolution:

WHEREAS, The demand for better obstetric care has directed increased attention to the practice of midwives; and

WHEREAS, Necessity demands that the supervision and training of midwives should be undertaken by the State; and

WHEREAS, At the present time there does not exist in New York State any such supervision and regulation; therefore, be it

Resolved, That the President of the Medical Society of the State of New York appoint a commission of five members who shall immediately after their organization begin a study of the subject as it presents itself in this state, and file their report with the House of Delegates of the State Society at its meeting in 1915.

THE PRESIDENT: You have heard this resolution. What is your pleasure?

It was moved that the resolution be adopted.

Motion seconded and carried.

THE PRESIDENT: Is there any further new business?

The Secretary read a proposed amendment to Chapter 45 of the consolidated laws of the State of New York, which was presented by Dr. Irving D. Steinhardt, who suggested that the Medical Society of the State of New York recommend this legislation to the State Legislature.

Amend health law, chapter 45 of the consolidated laws. Became a law February 17, 1909. Amended to close legislation, 1913. (See handbook 9, University of the State of New York.)

ARTICLE 8.—PRACTICE OF MEDICINE.

Section 160, proposed amendment to read as follows:

(9) "Unprofessional conduct" means and shall include the following acts or conduct by or on the part of a practitioner of medicine:

(*a*) Advertising in his own name or in the name of another person, firm, association, or corporation in any newspaper, magazine, pamphlet, or other printed paper or document, or writing general letters or causing them to be written wherein or whereby the medical practitioner holds himself or herself out to cure diseases or defects of the sexual organs, or to cure chronic or incurable diseases. Nothing in this section, however, is to be construed as limiting or enjoining the usual presentation of cases, instruments, papers, etc., before scientific bodies nor in any way limiting, preventing or enjoining open and full discussion of what is presented, nor is anything in this section to be construed as preventing the established custom of the medical practitioner writing for the medical or scientific press and distributing among his colleagues and friends reprints or copies of these articles. Neither shall anything in this article be construed to prevent scientific bodies from holding meetings for the public wherein

the latter may learn of medical and surgical progress, nor shall lectures on various topics of the public weal or health be prohibited by anything in this section, nor shall it be construed against the meaning of this section if the name or names of the medical practitioners who are to deliver the said lecture or lectures be announced or published. Nor shall this section be construed to prevent the medical practitioner, where medical custom permits it, to have a card in the medical or public press stating name, address, office hours, telephone number and limitation of practice, if any, but shall be construed to absolutely exclude any other statements particularly such as testimonials of success, specific methods (except such statement as to the school of medicine the physician professes to practise), guarantees, etc. Neither shall anything in this section be construed as enjoining, preventing, or limiting the medical practitioner from writing scientific or semi-scientific articles for the lay press, magazines, journals, etc., for their respective editions but it is expressly prohibited that the author pay for or cause to be paid for in money or otherwise for the printing of the same.

(*b*) Employing a capper, solicitor, drummer or other employe to secure patients, whether on salary, commission, or otherwise. Nothing in this section shall be construed to mean that a medical practitioner may not give his services free as he sees fit.

(*c*) Employment by any corporation, individual, firm or association who advertises medical treatment by printing, writing or word of mouth where a charge is made for the examination and diagnosis or where the prescribed treatment is charged for at a profit. Nothing in this section is to be construed as preventing the medical practitioner from working in recognized public clinics, hospitals or dispensaries.

(*d*) Announcing of professional services without compensation if a cure is not effected or the acceptance of a fee with the consideration that it is to be returned if a cure is not effected, or the acceptance of a fee in consideration of the assurance that an incurable disease may be permanently cured by some treatment known only to the particular practitioner.

(*e*) Wilfully betraying a professional secret, and this shall include the betrayal of a professional secret while intoxicated or under the influence of drug or drugs, self-administered because of a drug addiction.

(*f*) Habitual drunkenness, addiction to drugs, mental incompentency, insanity.

(*g*) Advertising either in his own name or in the name of another person, firm, corporation or association in any newspaper, magazine, pamphlet or other printed paper or document or in written letters to cure any disease by a secret process or remedy.

(*h*) Who undertakes to act by contract, verbal or written, as physician to houses of prostitution or ill fame. Nothing in this section, however, shall be construed to prevent any medical practitioner from treating immoral women as individual patients.

Section 168 to be amended to read as follows (*new matter in italics*):

Examinations and reports.—Examinations for licenses shall be given in at least four convenient places in this state, and at least four times annually, in accordance with the Regents' rules, and shall be *both written and practical.* The written examination shall be exclusively in English. Each *written* examination shall be conducted by a Regent's examiner who shall not be one of the medical examiners. At the close of each *written* examination the Regents' examiner in charge shall deliver the questions and answer papers to the medical board or its duly authorized committee, who, without unnecessary delay shall examine and mark the answers, and transmit to the Regents an official report, signed by its president and secretary, stating the standing of each candidate in each branch, his general average, and whether the board recommends that a license be granted *so far as the candidate's standing in the written examination goes.* Such report shall include the questions and answers and shall be filed in the public records of the university. *At the time of the written examination, and at such hours or on such days as will not interfere with it the practical examinations are to be held. These practical examinations are to be held in hospitals, clinics or dispensaries designated by the Regents, and are to be conducted by examiners designated by the Regents with the proviso that no examiner may examine applicants for a license who may have studied in the medical school where the said examiner teaches in or is connected with in any capacity. The practical examination shall consist of diagnosis in general medicine, surgery, pediatrics and obstetrics. The examinations shall be held upon actual patients chosen at random for each candidate and shall be held in the presence of and under the supervision of a Regents' examiner. At least five cases in each subject shall be presented to the candidate who shall be required to answer in a satisfactory manner at least fifteen of the twenty cases presented to him. At the close of each practical examination the examiners shall at once deliver to the Regents' examiner in charge their individual report on each applicant examined in their particular subject. This report shall state the kind of cases presented to the candidates, the correct diagnosis, in so far as this is possible, and the diagnosis made by the candidate. It shall also state whether in the opinion of the examiner the applicant passed a satisfactory examination in the particular subject, and the standing or per cent attained. The Regents' examiner in charge shall from these reports draw up an official report for the Board of Regents stating which of the candidates have passed in all the required subjects, recommending the successful ones for a license, provided the board in charge of the written examinations do make a like recommendation for the same candidate. This report of the results of the practical examinations shall be filed in the public records of the university. If in the written examination a candidate fails to get the required average in either surgery, diagnosis, or obstetrics, but passes the practical examination in these subjects* (i. e. any one of them) *with a percentage of over* 90 *per cent, the surplus percentage in that particular subject may be used to add to his written examination percentage and the applicant passed in the subject providing that this combination will give him an average of at least* 80 *per cent in both the practical and written examinations. If a candidate fail in not more than one subject in both the written and practical examinations he may try again at the examination without extra fee, and be required to pass in this one subject only; if a candidate fail in not more than one subject of the written examination and one subject of the practical examination he may after six months try again without extra fee and be required to pass in the failed subjects only. If a candidate fail in more than one subject of the written examination and more than one subject of the practical examination he may after six months try again without extra fee but must pass the examinations in all subjects both written and practical. No candidate may try re-examination more than twice in the same year. It shall be within the discretion of the Board of Regents whether to permit a candidate a retrial after three failures, and if they should so permit another examination fee must be paid.*

Section 170 to be amended as follows: Up to but not including subdivision "a" to remain as at present.

(*a*) A practitioner of medicine who was or is guilty of any fraud or deceit by which he or she was admitted to practice; or

(*b*) A practitioner of medicine who was or is guilty of any felony; or

(*c*) A practitioner of medicine who was or is guilty of fraud of any kind or is deliberately guilty of deceit in his practice for private gain or advantage; or

(*d*) Is an habitual drunkard or who attempts or undertakes to diagnose, treat or prescribe for a patient while under the influence of drink; or

(*e*) Is habitually addicted to the use of morphine,

opium, heroin, cocaine or other drugs having a similar or other deletorious effect or who attempts or undertakes to diagnose, treat, or prescribe for a patient while under the influence of such drugs; or

(*f*) Is adjudged mentally incompetent or insane; or
(*g*) Present section "c" to become section "g"; or
(*h*) Present section "d" to become section "h"; or
(*i*) Who is guilty of unprofessional conduct as defined in section 160, sub-division 9 of this act.

The rest of the law to be the same as it is at present with the following added to it:

But upon notice to the accused practitioner of medicine that the findings of the Committee of the Board of Medical Examiners are against him, which notice shall be sent him upon receipt of the said findings by the Board of Regents, the said accused medical practitioner may appeal to the Board of Regents to review his case and if their verdict shall still be against him he may appeal to the Supreme Court of the state to pass upon the findings in his case. If the Supreme Court decides in favor of the accused practitioner the Board of Regents may retry the accused practitioner once more only, or may drop the charges against him entirely. Should they retry the practitioner, he or she shall have the same right of appeal again to the court. If the court sustains the findings against an accused practitioner the punishment visited upon the accused must meet the approval of the court. Such appeal to the Supreme Court shall act as a stay against any punishment being meted out to the accused practitioner until the issue is decided. Such appeal to the Supreme Court must be filed within twenty days, and it shall be incumbent upon the court to hear the case within sixty days. The decision of this court must be final in cases of this sort.

THE PRESIDENT: What will you do with this amendment?

It was moved and seconded that it be referred to the Committee on Legislation with power. Carried.

THE PRESIDENT: Any further new business?

The Secretary announced the presence of Dr. J. Romer, as a delegate, representing the New York Branch of the American Pharmaceutical Association; and Dr. C. W. Baldwin, of Vermont, representing the Vermont State Medical Society.

THE PRESIDENT: Any further new business?

The Secretary moved that the question of sections for the meeting in Buffalo be referred to the Council with power.

Motion seconded and carried.

THE PRESIDENT: Is there any further new business? If not, the Chair will entertain a motion to adjourn.

It was moved that the House adjourn until 9.30 A.M., Tuesday, and that the first order of business shall be the election of officers.

Motion seconded and carried.

Whereupon the House adjourned at 11.45 P.M.

ADJOURNED MEETING OF THE HOUSE OF DELEGATES.

The adjourned meeting of the House of Delegates was called to order at 9.30 A.M., Tuesday, April 28, 1914. Dr. William Francis Campbell, President, in the chair; Dr. Wisner R. Townsend, Secretary.

The nomination and election of officers being in order, the following officers were nominated and duly elected:—President, Dr. Grover Wende, Buffalo; First Vice-President, Dr. Myron B. Palmer, Rochester; Second Vice-President, Dr. S. W. S. Toms, Nyack; Third Vice-President, Dr. Robert M. Elliott, Willard; Secretary, Dr. Wisner R. Townsend, New York, re-elected; Treasurer, Dr. Alexander Lambert, New York, re-elected; Chairman of the Committee on Scientific Work, Dr. Thomas H. McKee, Buffalo; Chairman of the Committee on Public Health, Dr. Joshua M. Van Cott, Brooklyn, re-elected; Chairman of the Committee of Arrangements, Dr. Albert T. Lytle, Buffalo; Chairman of the Committee on Medical Research, Dr. Frank Van Fleet, New York; Chairman of the Committee on Legislation, Dr. Lewis K. Neff, New York, re-elected.

The President appointed as tellers to count the votes for Delegates to the American Medical Association, Drs. William Shannon, L. Coville and O. P. Humpstone.

The following were placed in nomination for delegates for 1914-1915; Drs. Dwight H. Murray, Syracuse; Wendell C. Phillips, New York; James W. Fleming, Brooklyn; John C. MacEvitt, Brooklyn; Charles H. Richardson, New York; Owen E. Jones, Rochester; Samuel Lloyd, New York; M. M. Lucid, Cortland, and W. E. Bowen, Rochester.

The following received a majority of the votes cast: Drs. Dwight H. Murray, 72 votes; Wendell C. Phillips, 70; James W. Fleming, 64; John C. MacEvitt, 49; and Charles H. Richardson, 49. Total number of votes cast 96.

The Chair declared Drs. Murray, Phillips, Fleming, MacEvitt and Richardson elected delegates to the American Medical Association for two years.

The following were placed in nomination for alternates for 1914 and 1915: Drs. Owen E. Jones, Rochester; Samuel Lloyd, New York; M. M. Lucid, Cortland; W. E. Bowen, Rochester; A. W. Booth, Elmira; O. A. Gordon, Brooklyn; J. R. Kevin, Brooklyn; W. H. Thornton, Buffalo; W. J. Cruikshank, Brooklyn; H. S. Stark, New York; L. H. Neuman, Albany; I. D. Steinhardt, New York; W. T. Shanahan, Sonyea.

The following were declared elected alternate delegates for two years: O. E. Jones, 48 votes; A. W. Booth, 40; S. Lloyd, 37; W. E. Bowen, 33; M. M. Lucid, 31; total number of votes cast 74.

The Secretary presented the resignation of Dr. MacEvitt as alternate for 1914. On motion duly seconded it was accepted.

Moved, that Dr. J. Richard Kevin, who received 30 votes, next highest after Dr. Lucid, for alternate, take the place of Dr. MacEvitt resigned, for the year 1914. Seconded and carried.

The Chair declared Dr. Kevin elected alternate for 1914.

THE PRESIDENT: Is there any further business to come before the meeting before we close?

DR. DWIGHT H. MURRAY: I have a memorial report to present on the deaths of members of our Society.

As the Medical Society of the State of New York has sustained a great loss in the past year in the deaths of four most useful and prominent members, Drs. Nathan Jacobson, Roswell Park, Egbert Le Fevre and Joseph D. Bryant; be it

Resolved, That the Medical Society of the State of New York record its appreciation of their past services and desires to pay this tribute to their personal high character and attainments; and be it further

Resolved, That a copy of this memorial be sent to the members of each family and be spread on the minutes of this meeting.

Signed, ALEXANDER W. LAMBERT,
EDWARD D. FISHER,
DWIGHT H. MURRAY.

THE PRESIDENT: What will you do with this report of the Memorial Committee?

DR. NATHAN E. BRILL, New York: I move that it be adopted as read.

Motion seconded and carried.

THE PRESIDENT: Is there any further business to come before the House?

DR. J. B. RANSOM, Dannemora: Inasmuch as there is to be a Constitutional Convention in 1915, when the Constitution of the State of New York is to be revised, and many important matters of legislation are to be referred to that convention, I deem it important that the medical profession of the State of New York be represented. I therefore move, Mr. President, that a committee be apointed that shall have the interests of the medical profession of the State of New York in hand and be present at that convention to do such other work as may be necessary to secure the wisest provision upon medical matters.

THE PRESIDENT: How many do you wish on the committee?

DR. RANSOM: I will leave that with the President.

Motion seconded and carried.

THE PRESIDENT: Is there any further business?

Dr. Goodwin (Medical Society of the County of Westchester), stated that at a meeting of that society, held September 16, 1913, the following was adopted:

WHEREAS, The object of the National Food and Drugs Act as applied to drugs, being specifically for purpose of conserving the public health in relation to standards of purity; and

WHEREAS, Under the present construction of the law in relation thereto, it is manifest that such purpose is wholly defeated by reason of the proviso under section 7, which admits of any standards; and

WHEREAS, There can be only one grade, quality and standard of medicine in order to safeguard the health of the people; therefore be it

Resolved, That we respectfully request the accredited delegates of the Westchester County Medical Society to the State Society at its annual meeting use their efforts in affecting an amendment to the present law, by striking out the following words:

"*Provided*, That no drug defined in the United States Pharmacopœia or National Formulary shall be deemed to be adulterated under this provision if the standard of strength, quality or purity be plainly stated upon the box, bottle, or other container thereof, although the standard may differ from that determined by the test laid down in the United States Pharmacopœia or National Formulary.

"If the strength of purity fall below the professed standard or quality under which it is sold."

Then this section so far as applying to drugs will read as follows:

Section 7. That for the purpose of this act an article shall be deemed to be adulterated:

In case of drugs:

If when a drug is sold under or by a name recognized in the United States Pharmacopœia or National Formulary, it differs from the standard of strength, quality or purity, as determined by the test laid down in the United States Pharmacopœia or National Formulary official at the time of investigation.

THE PRESIDENT: You have heard this resolution. What is your pleasure?

It was moved that the resolution be adopted.

Motion seconded and carried.

The Secretary read the following letter from Dr. Frederick Tilney, Directing Librarian of the Medical Society of the County of Kings:

MY DEAR SIR: Some five or six years ago the books in the Library of the old New York State Medical Association were deposited with us, the remainder, after making a selection for this library, to be held for distribution among other county medical society libraries throughout the state. Selections were made by Schenectady and Poughkeepsie, but there remain several thousand old volumes, etc., which we still have on storage. The books and journals are all old and out of date and of but little value to any but a large medical library; their practical value for starting a new library is almost nil. They are likely to remain on storage here for many years, subject to deterioration. We would offer the suggestion that the remainder on hand be offered to the state library, Albany, N. Y., and that such, if any, as they may not wish be donated to the National Medical Library Association Exchange, Baltimore, for distribution among the medical libraries throughout the country. The volumes might thus prove of some use, and we would be glad to see them disposed of in this way. With your approval, will you not bring the matter to the attention of the Council?

Sincerely yours,
FREDERICK TILNEY,
Directing Librarian.

On motion, duly seconded and carried, the communication was referred to the Council.

Dr. Wende, the newly-elected President, was asked to come to the platform, which he did amid great applause.

The retiring President, Dr. Campbell, in introducing his successor, said: "Gentlemen, behold your President."

Dr. Wende, in accepting the Presidency, said: "Mr. President and members of the House of Delegates, I sincerely thank you for the compliment you have paid me. I take it not as a compliment to myself, but to the faithful men who come to the meetings of this society from the western part of the state. I also appreciate the partiality you have shown in selecting me as President of this society for the coming year, and I can assure you that in selecting Buffalo for the next place of meeting we shall endeavor to contribute as much of value as we can to the scientific proceedings and other matters. Again, I thank you."

As there was no further business to come before the House, on motion, duly seconded and carried, the House adjourned *sine die*, at 11 A.M.

WISNER R. TOWNSEND, *Secretary*.

Medical Society of the State of New York

ONE HUNDRED AND EIGHTH ANNUAL MEETING.

The society met in the North Ball Room of Hotel Astor, Tuesday, April 28, 1914, and was called to order by the President, Dr. William Francis Campbell, of Brooklyn, at 11 A.M., who said:

Members of the Medical Profession of the State of New York, Honored Guests, Ladies and Gentlemen: I wish to extend to you a hearty welcome to our metropolis and bid you join with us in the program which has been prepared for your edification and entertainment. I think the medical profession is realizing more than ever that broad medical culture cannot be obtained by staying at home and plying our well worn grooves; and so a spirit of travel possesses it during the past decade, going to and fro, exchanging fraternal courtesies, deeply appreciating each other's work and worth, and all this has moulded and modified and vitalized the profession to a remarkable extent. Whether you live in a large town or a small town, it makes no difference. No town has a monopoly of the genius of American medicine. I have even heard, Dr. Crile (turning to Dr. Crile), of men going from New York to Cleveland in order to cull some of the blossoms which grow on your fruitful vine, and all this has raised the level of the medical profession and has leavened the lump, so that medicine at the present time was never more progressive. With this thought in mind we have prepared for you a series of scientific papers which are intensely interesting; and the clinics of New York, with their wealth of material, bid you come and see what the men in this town are doing. We trust you will take advantage of this hospitality, so that when you return home you will not feel this week has been spent simply in idle recreation, but that you have been enriched for all time and repaid a hundred fold.

I do not know as much about the purlieus and devious ways of New York City as others, and so I am going to introduce to you the Hon. Marcus M. Marks, President of the Borough of Manhattan, New York City, who will deliver an address of welcome.

ADDRESS OF WELCOME BY MR. MARKS.

Mr. President, Ladies and Gentlemen: It is really a joy to me, representing the great City of New York, to bid you an official welcome to-day. I offer you the freedom of our city—our streets, our sidewalks, our galleries, our museums, our libraries, our parks, our baths, our markets, and all our other public works. You may stroll freely and there will be no toll charged to you on the outside anywhere. (Laughter.) This is a cheap city to come to, but a dear city to get away from, but whatever we have is yours, principally for a consideration. (Laughter.)

Personally, my dealings with physicians up to a few years ago were slight and pleasant. In the last few years my touch with physicians has been more than personal. I have had the good fortune to co-operate with a number of our leading physicians in certain preventive work, and I have been lost in admiration of the men with whom I have worked—men like Dr. Hermann M. Biggs, like Abraham Jacobi, like Thomas Alexander Miller, like Charles Baldwin. (Applause.) I found all of these men with their eyes looking far into the future and the possibilities of what might still come, and, at the same time, they had their feet firmly planted on the ground as leaders. They were not dreamers but thinkers; they were practical men as well as being professional men, and that combination is not generally credited to one individual.

The main purpose of your society, I assume, is to give to the members whatever benefits may come to any one of them. Formerly, people were averse to giving up their own benefits in business as well as in the professions. It seems the selfish element was then predominant. We wanted to keep things to ourselves, to get every advantage. That day has passed by. We do not work any more in committees of one. We work in associations, and the benefit of every member of an association is the benefit which he himself gives to an association multiplied by the number of members of the association. If you have six hundred members, you have got 600 benefits all concentrated in exchange of what you give up yourselves. That is the spirit of the day; it is rather to give than to receive. Cure is slow and difficult and expensive; prevention is simple and economic, and the physician of the present day is the man who concentrates his attention upon every possible method of prevention, just as our civic servants are working for the prevention of waste, for the prevention of strikes; as our diplomatists are working for the prevention of war. It is the same in war as in medicine—the tendency is to save, to prevent, and we have given one of our great preventive physicians of the City of New York to your service in the state. We have with heavy hearts given up Dr. Hermann M. Biggs from the Health Department of the City of New York to become the head of the State Department of Health of the State of New York, so that you all will have the benefit of his achievements, particularly along preventive lines.

The City of New York may appear to some, who come from a distance, as a cold city. Even the freedom of the city I offered was rather cold and formal, but I wish you to know and appreciate fully that the heart of the world beats in New York. We have in New York a great heart which is fed with the blood of all other nations pouring in, and when we hear the beat of the heart, we feel the impulse echoing from Germany, from France, from Russia, from Italy, from England, from every part of the world, and it is a great joy to live at the heart and hear the heart beat of all. We are an experiment here. The experiment of the world is being worked out here, a social experiment of having people of all classes and of all nations come and live together in close association, and if this democratic experiment of New York works out successfully there is no doubt but that the spirit of the future will be the spirit of the world over. War! How can we war when we have England in New York; we have Germany right here, Italy right here. We cannot war with these nations; we are a part of them, and America's mission is one of peace, and New York should be in the forefront of the mission of peace, because New York cannot afford to fight with itself, and New York itself is all the nations welded together through the melting pot into one great heart. I offer you the fulness of courtesy, consideration and regard from that great heart of the City of New York. (Loud applause.)

THE PRESIDENT: We have the great pleasure of having as our honored guest to-day a man who has trod the higher range of surgical thought and crystallized his philosophy into something of real and permanent value to humanity. It is with deep pleasure that I introduce to you Dr. George W. Crile, Professor of Surgery in Western Reserve University,

Dr. Crile then delivered the Oration on Surgery.

At the close of the oration President Campbell said: "I am sure, I express the sentiment of this convention when I give you their deep appreciation and gratitude for your presentation of this brilliant contribution to experimental medicine." (Applause.)

THE PRESIDENT: The Secretary will read the minutes of the last annual meeting.

THE SECRETARY: I move that the minutes of the last annual meeting be adopted as printed in the State JOURNAL for May, 1913.

Motion seconded by several and carried.

There being no further business, the meeting adjourned.

WISNER R. TOWNSEND,
Secretary.

The scientific program was carried out as published in the NEW YORK STATE JOURNAL OF MEDICINE, April, 1914, issue, Vol. 14, No. 4, pages 221 to 226. For clinics held see same program.

MEETING OF THE COUNCIL.

A regular meeting of the Council of the Medical Society of the State of New York was held at the Society Rooms, 17 W. 43d Street, New York, April 30, 1914, at 12.30 P.M. Dr. Grover W. Wende, President, in the chair. Dr. Wisner R. Townsend, Secretary.

The meeting was called to order by the President, and on roll call the following answered to their names: Drs. Grover W. Wende, S. W. S. Toms, Wisner R. Townsend, Thomas H. McKee, Joshua M. Van Cott, Albert T. Lytle, Lewis K. Neff, Frank Van Fleet, Henry L. Winter, James S. Cooley, Robert Selden, George Lenz, Thomas F. Manley, William T. Shanahan, Arthur G. Bennett.

Drs. Lambert, Palmer and Elliott sent excuses.

The minutes of the last meeting were approved as printed in the NEW YORK STATE JOURNAL OF MEDICINE for January, 1914, vol. 14, page 48.

The Secretary reported that the House of Delegates had referred the question of Sections to the Council with power. Moved, seconded and carried that the subject be left over to the May meeting.

Moved, seconded and carried that the present contract with the Attorney, Mr. James Taylor Lewis, be cancelled.

Moved, seconded and carried that the present Council make a new contract on the same terms as made by the Committee on Finance of last year, to date from May 1, 1913, to April 30, 1915, and until a new contract is made.

Moved, seconded and carried that the communication from the House of Delegates in regard to the distribution of books in the Medical Library of the County of Kings, the property of the Medical Society of the State of New York, be referred with power to a committee consisting of Dr. Joshua M. Van Cott and the Attorney, Mr. James Taylor Lewis.

Moved, seconded and carried that a committee of three to pass upon County Society By-Laws be appointed, to consist of Drs. Lewis K. Neff, William T. Shanahan and Thomas F. Manley.

Moved, seconded and carried that a Committee on Finance be appointed to consist of Drs. Alexander Lambert, S. W. S. Toms and Frank Van Fleet.

Moved, seconded and carried that the present Committee on Prize Essays be reappointed, namely, Drs. Albert Vander Veer, John F. W. Whitbeck and Edward D. Fisher.

Moved, seconded and carried that the amount due on the Lucien Howe Prize for 1914 be paid by the Treasurer to Dr. Mark J. Schoenberg, New York City, on authorization of the Finance Committee.

Moved, seconded and carried that the following Committee on Publication be appointed: Drs. Floyd M. Crandall, Alexander Lambert, John C. MacEvitt, Victor A. Robertson and S. W. S. Toms.

Moved, seconded and carried that Dr. John C. MacEvitt be appointed Editor for the ensuing year, the Honoriarium to be the same as during the past year.

Moved, seconded and carried that the Honorarium of the Secretary be the same as for the past year.

Moved, seconded and carried, that on and after July 1, 1914, no member of the Medical Society of the State of New York shall receive the Directory, the NEW YORK STATE JOURNAL OF MEDICINE, nor be entitled to malpractice defense, until his county dues and state assessment have been paid.

Moved, seconded and carried that, in order to encourage increase in membership for the year 1914, all members who are elected between October 1, 1914, and December 31, 1914, and who shall pay during that period their state assessment, may have the same credited to 1915, provided that they request it. All whose assessments are so credited shall be entitled to malpractice defense for 1914, but shall not be entitled to receive the Directory or the Journal for 1914. State assessments so credited shall be immediately forwarded by the County Treasurer to the State Treasurer.

Moved, seconded and carried that the Secretary of the State Society be requested to attend the meeting of the state secretaries and editors to be held in Atlantic City, on June 22d, and that upon presentation of proper vouchers he may have his railroad expenses paid.

Moved, seconded and carried that officers, members of committees and delegates or alternates acting as delegates of the Medical Society of the State of New York upon presentation of proper vouchers may have their railroad expenses paid, providing that all shall be presented within sixty days after they have been incurred, and that the delegates to the American Medical Association be paid only if they attend all the meetings of the House of Delegates, and stay through the last meeting of the House.

Moved, seconded and carried that the Treasurer be thanked by the Council for his services during the past year.

The Chairman of the Committee on Scientific Work, Dr. Thomas H. McKee, named as members of his Committee the following: Dr. Franklin W. Barrows, Buffalo; and the elected section chairmen. Surgery, Dr. Samuel Lloyd, New York; Medicine, Dr. G. Reese Satterlee, New York; Pediatrics, Dr. Joseph Roby, of Rochester; Obstetrics and Gynecology, Dr. James E. King, of Buffalo; Eye, Ear, Nose and Throat, Dr. Thomas J. Harris, of New York.

The Chairman of the Committee on Public Health, Dr. Joshua M. Van Cott, proposed as members of his Committee the following: Drs. Allen Arthur Jones, Buffalo; Charles Stover, Amsterdam. On motion duly seconded and carried they were approved.

The Chairman of the Committee on Legislation proposed as members of his Committee: Drs. James F. Rooney, Albany, and J. Richard Kevin, Brooklyn. On motion duly seconded and carried they were approved.

The Chairman of the Committee on Arrangements, Dr. Albert T. Lytle, proposed as members of his Committee: Drs. Carl G. Leo-Wolf, Edith R. Hatch, Lesser Kauffman, Julius Richter, A. L. Benedict, Arthur G. Bennett, Edward A. Sharp, all of Buffalo. On motion duly seconded and carried they were approved.

Dr. Frank Van Fleet, Chairman of the Committee on Medical Research, stated that as his Committee was a very large one, and also a very important one, he would like to defer making the nominations until the May meeting.

Moved, seconded and carried that Dr. Henry L. Winter and Mr. James Taylor Lewis, Attorney for the Society, be appointed a committee to prepare uniform by-laws for the district Branches, same to be submitted at the May meeting.

Moved, seconded and carried that the Council grant authority to the Chairman of the Committee on Public Health, Dr. J. M. Van Cott, to appoint the committee authorized by the House of Delegates, on Public Health and Instruction as a sub-committee of the Committee on Public Health.

Moved, seconded and carried that in accordance with the By-Laws a May meeting be held. New York was selected as the place. The date to be announced by the Chair. There being no other business, the meeting adjourned at 3.00 P.M.

WISNER R. TOWNSEND, *Secretary.*

MEDICAL SOCIETY OF THE STATE OF NEW YORK

Next Annual Meeting, Buffalo, April 27, 1915

President—Grover W. Wende, Buffalo.
First Vice-President—Myron B. Palmer, Rochester.
Second Vice-President—S. W. S. Toms, Nyack.
Third Vice-President—Robert M. Elliott, Willard.
Secretary—Wisner R. Townsend, 17 W. 43d Street, New York.
Treasurer—Alexander Lambert, 17 W. 43d Street, New York.
Counsel—James Taylor Lewis, 40 Exchange Place, New York.

STANDING COMMITTEES.

Committee on Scientific Work.

Thomas H. McKee, Chairman, Buffalo; Franklin W. Barrows, Buffalo; Samuel Lloyd, New York; G. Reese Satterlee, New York; Joseph Roby, Rochester; James E. King, Buffalo; Thomas J. Harris, New York.

Committee on Legislation.

Lewis K. Neff, Chairman, New York; J. Richard Kevin, Brooklyn; James F. Rooney, Albany.

Committee on Public Health.

Joshua M. Van Cott, Chairman, Brooklyn; Allen Arthur Jones, Buffalo; Charles Stover, Amsterdam,

Committee on Arrangements.

Albert T. Lytle, Chairman, Buffalo; A. L. Benedict, Buffalo; Arthur G. Bennett, Buffalo; Edith R. Hatch, Buffalo; Lesser Kauffman, Buffalo; Carl G. Leo-Wolf, Buffalo; Julius Richter, Buffalo; Edward A. Sharp, Buffalo.

Committee on Medical Research.

Frank Van Fleet, Chairman, New York.

COUNCILORS.

First District—Henry L. Winter, Cornwall.
Second District—James S. Cooley, Mineola.
Third District—Robert Selden, Catskill.
Fourth District—George Lenz, Gloversville.
Fifth District—Frederick H. Flaherty, Syracuse.
Sixth District—Thomas F. Manley, Norwich.
Seventh District—William T. Shanahan, Sonyea.
Eighth District—Arthur G. Bennett, Buffalo.

SECTION OFFICERS.

Medicine—G. Reese Satterlee, New York, Chairman; Nelson G. Russell, Buffalo, Secretary.
Surgery—Samuel Lloyd, New York, Chairman; Harry R. Trick, Buffalo, Secretary.
Eye, Ear, Nose and Throat—Thomas J. Harris, New York, Chairman; Lee M. Francis, Buffalo, Secretary.
Obstetrics and Gynecology—James E. King, Buffalo, Chairman; James K. Quigley, Rochester, Secretary.
Pediatrics—Joseph Roby, Rochester, Chairman; Dewitt H. Sherman, Buffalo, Secretary.

DELEGATES TO AMERICAN MEDICAL ASSOCIATION.

1914.

Delegates—Henry L. Elsner, Edgar A. Vander Veer, S. W. S. Toms, Floyd M. Crandall, Wesley T. Mulligan, John O. Polak.
Alternates—Jerome M. Lynch, Charles A. Wall, Thomas H. McKee, Henry D. Furniss, J. Richard Kevin, George E. Davis.

1914-1915.

Delegates—Dwight H. Murray, John C. MacEvitt, Wendell C. Phillips, Charles H. Richardson, James W. Fleming.
Alternates—Owen E. Jones, Willis E. Bowen, Samuel Lloyd, Arthur W. Booth, M. M. Lucid.

FIRST DISTRICT BRANCH

President—Henry L. Winter, Cornwall.
Vice-President—James E. Sadlier, Poughkeepsie.
Secretary—C. E. Denison, 143 W. 76th St., New York.
Treasurer—T. F. Goodwin, Mt. Vernon.

BRONX COUNTY MEDICAL SOCIETY.

President—N. B. Van Etten, New York.
First Vice-President—F. L. Donlon, New York.
Second Vice-President—W. A. Boyd, New York.
Secretary—H. T. Radin, 654 E. 165th St., New York.
Financial Secretary—H. A. Dodin, New York.
Treasurer—E. F. Hurd, New York.

MEDICAL SOCIETY OF THE COUNTY OF DUTCHESS.

President—L. C. Wood, Poughkeepsie.
Vice-President—R. H. Breed, Wappingers Falls.
Secretary—F. J. Mann, 262 Main St., Poughkeepsie.
Assistant Secretary—J. H. Dingman, Poughkeepsie.
Treasurer—L. H. Marks, Poughkeepsie.

MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

President—T. P. Berens, New York.
First Vice-President—H. Lilienthal, New York.
Second Vice-President—F. Sondern, New York.
Secretary—J. VanD. Young, 138 W. 71st St., New York.
Assistant Secretary—J. M. Mabbott, New York.
Treasurer—C. H. Richardson, New York.

MEDICAL SOCIETY OF THE COUNTY OF ORANGE.

President—J. I. Cotter, Campbell Hall.
Vice-President—E. M. Schultz, Middletown.
Secretary—W. W. Davis, Chester.
Treasurer—H. J. Shelley, Middletown.

RICHMOND COUNTY MEDICAL SOCIETY.

President—H. T. Goodwin, Tompkinsville.
Vice-President—C. E. Pearson, Tompkinsville.
Secretary—C. R. Kingsley, Jr., West New Brighton.
Treasurer—E. D. Wisely, Port Richmond.

COUNTY OF ROCKLAND MEDICAL SOCIETY.

President—J. W. Giles, Nyack.
Vice-President—J. H. Crosby, Haverstraw.
Secretary—R. De Baun, Congers.
Treasurer—A. K. Doig, Nyack.

MEDICAL SOCIETY OF THE COUNTY OF WESTCHESTER.

President—J. W. Smith, Bronxville.
Vice-President—S. E. Getty, Yonkers.
Secretary—W. S. Woodruff, 133 Park Ave., Mt. Vernon.
Treasurer—B. F. Drake, New Rochelle.

SECOND DISTRICT BRANCH

President—James S. Cooley, Mineola.
Vice-President—Arthur H. Terry, Patchogue.
Secretary and Treasurer—Charles Eastmond, 67 Hanson Pl., Bklyn.

MEDICAL SOCIETY OF THE COUNTY OF KINGS.

President—J. R. Kevin, Brooklyn.
Vice-President—R. S. Fowler, Brooklyn.
Secretary—B. Harris, 475 Greene Av., Brooklyn.
Associate Secretary—C. E. Scofield, Brooklyn.
Treasurer—S. H. Lutz, Brooklyn.
Associate Treasurer—R. L. Moorhead, Brooklyn.

QUEENS-NASSAU MEDICAL SOCIETY.

President—G. A. Fensterer, Floral Park.
Vice-President—H. L. Barker, Woodside.
Secretary and Treasurer—James S. Cooley, Mineola.

SUFFOLK COUNTY MEDICAL SOCIETY.

President—S. R. Corwith, Bridgehampton.
Vice-President—B. F. Many, Port Jefferson.
Secretary—Frank Overton, Patchogue.
Treasurer—B. D. Skinner, Greenport.

THIRD DISTRICT BRANCH

President—Robert Selden, Catskill.
Vice-President—Alvah H. Traver, Albany.
Secretary—James N. Vander Veer, 28 Eagle St., Albany.
Treasurer—Mary Gage-Day, Kingston.

MEDICAL SOCIETY OF THE COUNTY OF ALBANY.

President—J. F. Rooney, Albany.
Vice-President—T. W. Jenkins, Albany.
Secretary—F. C. Conway, 292 Madison Ave., Albany.
Treasurer—G. W. Papen, Jr., Albany.

COLUMBIA COUNTY MEDICAL SOCIETY.

President—J. R. Conklin, Philmont.
Vice-President—W. D. Collins, Hudson.
Secretary and Treasurer—C. G. Rossman, 11 So. 6th St., Hudson.

MEDICAL SOCIETY OF THE COUNTY OF GREENE.

President—J. F. Loutfian, Coxsackie.
Vice-President—G. L. Branch, Catskill.
Secretary—Robert Selden, Catskill.
Treasurer—C. E. Willard, Catskill.

MEDICAL SOCIETY OF THE COUNTY OF RENSSELAER.

President—H. C. Gordinier, Troy.
Vice-President—T. S. A. O'Connor, Troy.
Secretary—J. J. McShane, 2642 Fifth Ave., Troy.
Treasurer—O. F. Kinloch, Troy.

SCHOHARIE COUNTY MEDICAL SOCIETY.

President—C. L. Olendorf, Cobleskill.
Vice-President—A. R. Warner, Gallupville.
Secretary—H. Le R. Odell, Sharon Springs.
Treasurer—Le Roy Becker, Cobleskill.

MEDICAL SOCIETY OF THE COUNTY OF SULLIVAN.

President—A. B. Sullivan, Liberty.
Vice-President—C. E. Patterson, Liberty.
Secretary and Treasurer—C. S. Payne, Liberty.

MEDICAL SOCIETY OF THE COUNTY OF ULSTER.

President—F. Keator, Kingston.
Vice-President—L. Emerick, Saugerties.
Secretary—J. R. Gillett, 193 Elmendorf St., Kingston.
Treasurer—E. E. Norwood, Kingston.

FOURTH DISTRICT BRANCH

President—George Lenz, Gloversville.
Secretary—F. J. Resseguie, 509 Broadway, Saratoga Springs.
Treasurer—G. H. Oliver, Malone.

MEDICAL SOCIETY OF THE COUNTY OF CLINTON.

President—H. S. McCasland, Saranac.
Vice-President—R. S. Macdonald, Plattsburg.
Secretary—T. A. Rogers, 42 Court St., Plattsburg.
Treasurer—J. G. McKinney, Plattsburg.

MEDICAL SOCIETY OF THE COUNTY OF ESSEX.

President—L. G. Barton, Willsboro.
Vice-President—C. B. Warner, Port Henry.
Secretary—C. R. Payne, Wadhams.
Treasurer—W. T. Sherman, Crown Point.

MEDICAL SOCIETY OF THE COUNTY OF FRANKLIN.

President—W. H. Harwood, Malone.
Vice-President—J. W. Price, Saranac Lake.
Secretary and Treasurer—G. M. Abbott, Saranac Lake.

FULTON COUNTY MEDICAL SOCIETY.

President—S. J. Colton, Johnstown.
Vice-President—S. C. Clemans, Gloversville.
Secretary—C. Bledsoe, 11 Spring St., Gloversville.
Treasurer—W. J. Kennedy, Gloversville.

MEDICAL SOCIETY OF THE COUNTY OF MONTGOMERY.

President—S. J. H. Reed, Fultonville.
Vice-President—A. McC. Gilbert, Amsterdam.
Secretary—W. R. Pierce, 60 Bridge St., Amsterdam.
Treasurer—C. F. Timmerman, Amsterdam.

MEDICAL SOCIETY OF THE COUNTY OF ST. LAWRENCE.

President—C. D. Laidlaw, Canton.
Vice-President—R. H. Hutchings, Ogdensburg.
Secretary—S. W. Close, Gouverneur.
Treasurer—A. H. Allen, Gouverneur.

MEDICAL SOCIETY OF THE COUNTY OF SARATOGA.

President—F. F. Gow, Schuylerville.
Vice-President—R. H. Stubbs, Waterford
Secretary—J. T. Sweetman, Jr., Ballston Spa.
Treasurer—T. E. Bullard, Schuylerville.

MEDICAL SOCIETY OF THE COUNTY OF SCHENECTADY.

President—L. Betts, Schenectady.
Vice-President—E. S. Vass, Schenectady.
Secretary—H. P. Groesbeck, 1226 State St., Schenectady.
Treasurer—G. V. Johnson, Schenectady.

MEDICAL SOCIETY OF THE COUNTY OF WARREN.

President—E. B. Probasco, Glens Falls.
Vice-President—M. LeR. Haviland, Glens Falls.
Secretary and Treasurer—V. D. Selleck, 44 Bay St., Glens Falls.

MEDICAL SOCIETY OF THE COUNTY OF WASHINGTON.

President—W. A. Tenney, Granville.
Vice-President—J. Millington, Greenwich.
Secretary—S. J. Banker, Fort Edward.
Treasurer—R. C. Paris, Hudson Falls.

FIFTH DISTRICT BRANCH

President—Frederick H. Flaherty, Syracuse.
Vice-President—William D. Garlock, Little Falls.
Secretary—James F. McCaw, Bank & Loan Bldg., Watertown.
Treasurer—George F. Mills, Oneida.

MEDICAL SOCIETY OF THE COUNTY OF HERKIMER.

President—A. B. Santry, Little Falls.
First Vice-President—E. W. Rude, Ilion.
Second Vice-President—J. W. Graves, Herkimer.
Third Vice-President—C. J. Diss, Ilion.
Secretary—A. W. Suiter, 105 Court St., Herkimer.
Treasurer—G. Graves, Herkimer.

MEDICAL SOCIETY OF THE COUNTY OF JEFFERSON.

President—C. N. Bibbins, Watertown.
Vice-President—L. L. Gannett, Adams.
Secretary—C. E. Pierce, 12 Savings Bank Bldg., Watertown.
Treasurer—P. E. Thornhill, Watertown.

LEWIS COUNTY MEDICAL SOCIETY.

President—I. D. Spencer, Croghan.
Vice-President—C. W. Culver, Lowville.
Secretary—E. N. K. Mears, Lowville.
Treasurer—P. H. von Zierolshofen, Croghan.

MADISON COUNTY MEDICAL SOCIETY.

President—W. T. Tanner, Oneida.
Vice-President—A. R. Thomas, West Eaton.
Secretary—G. W. Miles, 11 Washington Ave., Oneida.
Treasurer—C. H. Perry, Oneida.

MEDICAL SOCIETY OF THE COUNTY OF ONEIDA.

President—C. R. Hart, New Hartford.
Vice-President—M. J. Davies, Utica.
Secretary—W. B. Roemer, 31 Oneida St., Utica.
Treasurer—T. W. Clarke, Utica.

THE ONONDAGA MEDICAL SOCIETY.

President—I. H. Levy, Syracuse.
Vice-President—J. C. Parsons, Marcellus.
Secretary—H. B. Doust, 641 Park Ave., Syracuse.
Treasurer—R. J. Stoup, Syracuse.

MEDICAL SOCIETY OF THE COUNTY OF OSWEGO.

President—J. B. Ringland, Oswego.
Vice-President—H. W. Schlappi, Fulton.
Secretary—W. C. Todt, 40 West Cayuga St., Oswego.
Treasurer—F. L. Sin Clair, Oswego.

SIXTH DISTRICT BRANCH

President—Thomas F. Manley, Norwich.
Vice-President—Arthur W. Booth, Elmira.
Secretary and Treasurer—R. P. Higgins, 20 Court St., Cortland.

BROOME COUNTY MEDICAL SOCIETY.

President—S. H. Stevens, Union.
Vice-President—S. B. Blakely, Binghamton.
Secretary—H. DeW. Watson, 151 Front St., Binghamton.
Treasurer—F. M. Dyer, Binghamton.

MEDICAL SOCIETY OF THE COUNTY OF CHEMUNG.

President—R. B. Lynn, Elmira.
Vice-President—C. F. Abbott, Elmira.
Secretary—C. L. Carey, 314 E. Church St. Elmira.
Treasurer—H. W. Fudge, Elmira.

CHENANGO COUNTY MEDICAL SOCIETY.
President—J. T. Hand, New Berlin.
Vice-President—E. Danforth, Bainbridge.
Secretary—P. B. Brooks, Norwich.
Treasurer—J. B. Drake, Norwich.

CORTLAND COUNTY MEDICAL SOCIETY.
President—R. P. Higgins, Cortland.
Vice-President—C. J. Kelley, Cortland.
Secretary—J. Walsh, 28 Clinton Ave., Cortland.
Treasurer—F. F. Sornberger, Cortland.

MEDICAL SOCIETY OF THE COUNTY OF DELAWARE.
President—C. R. Woods, Hamden.
Vice-President—J. H. Acheson, Hancock.
Secretary-Treasurer—William Ormiston, Delhi.

OTSEGO COUNTY MEDICAL SOCIETY.
President—L. T. Genung, Worcester.
Vice-President—F. J. Atwell, Cooperstown.
Secretary—M. Latcher, 3 Church St., Oneonta.
Treasurer—F. L. Winsor, Laurens.

SCHUYLER MEDICAL SOCIETY.
President—H. De Wolf, Watkins.
Secretary and Treasurer—F. B. Bond, Watkins.

MEDICAL SOCIETY OF THE COUNTY OF STEUBEN.
President—D. H. Smith, Bath.
Vice-President—W. E. Barron, Addison.
Secretary and Treasurer—B. R. Wakeman, 5 Hakes Ave., Hornell.

THE MEDICAL SOCIETY OF THE COUNTY OF TIOGA.
President—C. W. Chidester, Newark Valley.
Vice-President—W. L. Ayer, Owego.
Secretary—C. J. V. Redding, Owego.
Treasurer—J. M. Barrett, Owego.

TOMPKINS COUNTY MEDICAL SOCIETY.
President—J. S. Kirkendall, Ithaca.
Vice-President—R. C. Wilson, Ithaca.
Secretary—W. G. Fish, 504 N. Aurora St., Ithaca.
Treasurer—H. E. Merriam, Ithaca.

SEVENTH DISTRICT BRANCH

President—W. T. Shanahan, Sonyea.
Vice-President—F. J. Bowen, Mt. Morris.
Secretary—J. F. Myers, Sodus.
Treasurer—H. J. Knickerbocker, Geneva.

CAYUGA COUNTY MEDICAL SOCIETY.
President—C. E. Goodwin, Weedsport.
Vice-President—L. E. Jenkins, Auburn.
Secretary—M. LeR. Seccomb, 2 Park Pl., Auburn.
Treasurer—F. A. Lewis, Auburn.

MEDICAL SOCIETY OF THE COUNTY OF LIVINGSTON.
President—A. H. Paine, Caledonia.
Vice-President—J. F. Munson, Sonyea.
Secretary and Treasurer—G. K. Collier, Sonyea.

MEDICAL SOCIETY OF THE COUNTY OF MONROE.
President—A. C. Snell, Rochester.
Secretary—C. W. Hennington, 292 Alexander St., Rochester.
Treasurer—F. W. Seymour, Rochester.

ONTARIO MEDICAL SOCIETY.
President—H. J. Knickerbocker, Geneva.
Vice-President—F. W. Spaulding, Clifton Springs.
Secretary and Treasurer—D. A. Eiseline, Shortsville.

MEDICAL SOCIETY OF THE COUNTY OF SENECA.
President—L. A. Gould, Interlaken.
Vice-President—C. B. Bacon, Waterloo.
Secretary—F. W. Lester, Seneca Falls.
Treasurer—R. Knight, Seneca Falls.

WAYNE COUNTY MEDICAL SOCIETY.
President—E. A. Nevin, Newark.
Vice-President—W. I. Dean, Lyons.
Secretary and Treasurer—M. A. Veeder, Lyons.

MEDICAL SOCIETY OF THE COUNTY OF YATES.
President—J. A. Conley, Penn Yan.
Vice-President—H. W. Matthews, Penn Yan.
Secretary—G. E. Welker, Dresden.
Treasurer—F. S. Sampson, Penn Yan.

EIGHTH DISTRICT BRANCH

President—A. G. Bennett, Buffalo.
First Vice-President—C. G. Leo-Wolf, Buffalo.
Second Vice-President—A. T. Lytle, Buffalo.
Secretary—E. A. Sharp, 481 Franklin St., Buffalo.
Treasurer—F. H. Van Orsdale, Belmont.

MEDICAL SOCIETY OF THE COUNTY OF ALLEGANY.
President—N. H. Fuller, Friendship.
Vice-President—L. C. Lewis, Belmont.
Secretary and Treasurer—C. R. Bowen, Almond.

MEDICAL SOCIETY OF THE COUNTY OF CATTARAUGUS.
President—H. W. Johnson, Gowanda.
Vice-President—R. B. Morris, Olean.
Secretary and Treasurer—H. H. Ashley, Machias.

MEDICAL SOCIETY OF THE COUNTY OF CHAUTAUQUA.
President—G. F. Smith, Falconer.
First Vice-President—F. C. Rice, Ripley.
Second Vice-President—A. W. Dods, Fredonia.
Secretary and Treasurer—J. W. Morris, 142 Forest Ave., Jamestown.

MEDICAL SOCIETY OF THE COUNTY OF ERIE.
President—J. V. Woodruff, Buffalo.
First Vice-President—A. W. Hurd, Buffalo.
Second Vice-President—F. W. Barrows, Buffalo.
Secretary—F. C. Gram, 849 Humboldt Parkway, Buffalo.
Treasurer—A. T. Lytle, Buffalo.

MEDICAL SOCIETY OF THE COUNTY OF GENESEE.
President—J. B. Miller, Alexander.
Vice-President—G. A. Neal, Alabama.
Secretary and Treasurer—S. E. Page, East Bethany.

MEDICAL SOCIETY OF THE COUNTY OF NIAGARA.
President—C. W. Clendenan, N. Tonawanda.
Vice-President—A. McNamara, Lockport.
Secretary—L. R. Hurlbut, 102 Niagara St., Lockport.
Treasurer—Walter A. Scott, Niagara Falls.

MEDICAL SOCIETY OF THE COUNTY OF ORLEANS.
President—R. W. Bamber, Carlton.
Vice-President—G. F. Rogan, Medina.
Secretary and Treasurer—J. F. Eckerson, Shelby.

MEDICAL SOCIETY OF THE COUNTY OF WYOMING.
President—W. J. French, Pike.
Vice-President—W. R. Thomson, Warsaw.
Secretary and Treasurer—L. Hayden Humphrey, Silver Springs.

Total Membership May 1, 1914, 7614

NEW YORK STATE JOURNAL OF MEDICINE

A Journal Devoted to the Interests of the Medical Society of the State of New York

JOHN COWELL MAC EVITT, M.D., Editor

Business and Editorial Offices: 17 West 43d Street, New York, U. S. A.
Address Journals sent in Exchange to 1313 Bedford Avenue, Brooklyn, N. Y., U. S. A.

Vol. XIV. JUNE, 1914 No. 6

EDITORIAL DEPARTMENT

CHARLATANS.

THE farmer with his hoe walks through the furrows of his growing corn and ruthlessly uproots and casts into the fire the noisome and pestilential weeds which suck the elements from the soil, which should instead give strength and maturity to the ripening grain. Would that we could in some manner eliminate, destroy or imprison the harpies who infest our ranks and prey upon the unfortunates who, through a sense of shame or through ignorance, fall victims to their insatiable greed. For audacious defiance of moral and criminal law the advertising quacks stand preëminent. Why they have been permitted to exist and multiply we cannot say but will leave the answer to the casuistry of the negligent civic officials. However, it is pleasing to know that the Department of Health has inaugurated a crusade against these malefactors under the immediate supervision of Dr. W. S. Barringer, Medical Advisor of Venereal Diseases of the Department, who, in a recent address delivered before the Medical Society of the County of Kings, presented some of the interesting facts he gained in his efforts to secure information which would aid in the criminal prosecution of these adepts in duplicity.

Their doubly unfortunate dupes are obtained principally through advertisements placed in weekly and daily newspapers. Publishers and editors of lay publications are not so entirely unsophisticated in the ways of the world that they are unable to distinguish between the true and the false in the claims made in advertisements. Logically it is then fair to assume that they knowingly, for so many cents a line, permit their publications to act as mediums for the dissemination of sordid, mendacious statements. Dr. Barringer named sixteen New York papers, and they represented but a part of the whole number, in which these advertisements appeared. Computing their cost at the regular advertising rates of these different papers, the yearly income amounted to the grand total of $105,000.00. As an example of the palpable lies contained in these advertisements, and to illustrate the rank duplicity of their rapacious methods the following are a few excerpts taken from the Health Department's Venereal Clinics.

"We guarantee to cure every man with any private disease for $10.00." "Five bottles of this medicine guaranteed to cure syphilis." "I attend you until you are fully cured for Five Dollars." "$10.00 reward for any case of lost manhood that cannot be restored."

The two following histories are of cases, similar in character to many others, recorded at the Venereal Clinic at which the patients sought relief after having been treated by charlatans.

"J. D.—Two and a half years ago he went to Dr. C. (who advertised in toilets) to be treated for gonorrhea. He was treated for twenty weeks. He paid $40.00; was not cured. Now he went to Dr. L., who advertises in most foreign papers, and who has a so-called anatomical museum. This Doctor charged him $35.00 for a cure. The patient stayed with him fifteen weeks; was not cured, and Dr. L. suggested that he pay extra money for a cure, which he did for a number of times. He now went to a druggist who advertises in the Russian papers and paid $4.00 a week for twenty weeks. Not cured, he went to another

Drug Co. on the Bowery, where he paid $10.00 down and from $1.25 to $2.00 a week for treatment. After going to them for a number of weeks and apparently not being cured, they asked him for $25.00 for a guarantee to cure his gonorrhea. The patient gave them $15.00 and he is now being treated. A blood test at the Department of Health showed that he had no gonorrhea.

"J. F. R. has had syphilis for twelve years. He went for treatment to Dr. A., who has an office over an anatomical museum. He gave the doctor $60.00 to begin treatment and paid $2.00 a week for medicine. He sometimes did not take the whole bottle during the week, so the doctor insisted that he use a larger spoon. Then he went to Dr. S. who took $85.00 for two injections of '606', although he said he would give the two for $65.00. The first one did the patient so much good that the doctor raised the price $20.00. He discharged the patient as cured and did not even attempt to take a blood examination. The Board of Health examination shows that he still has syphilis."

Among another class of victims is the penitent youth under whose eye has fallen a pamphlet on "Lost Manhood." The stories we are told of their experiences and their mental perturbation excites one's sympathy, likewise our indignation at the heartlessness of the methods pursued to rob them by working upon their fear by a gross exaggeration of the harmful results which follow practice of self-pollution, although the practice may have been discontinued a long time before. Many of these youths, through fear of imaginary consequences, approach the border line of insanity.

The eradication of this evil will be by no means an easy task. We do not believe that without the active coöperation of the County Societies and the aid of the untainted lay press that it can be accomplished. What the quacks fear is publicity. Before it they will wither like grass beneath the burning rays of the sun. Criminal prosecution seems to have no terror for them. They know full well that sufferers from loathsome diseases will not appear against them, and what with unprincipled lawyers to defend them, politicians to plead for them, and the law's devious ways they pursue their way unmolested.

The following law was enacted in Oregon in 1913. While its constitutionality has not been established it has had the desired effect. It reads:

"Section 2095. Any person who shall advertise or publish any advertisement intended to imply or to be understood that he will restore manly vigor, treat or cure lost manhood, lost power, stricture, gonorrhea, chronic discharges, gleet, varicocele or syphilis, or any person who shall advertise any medicine, medicinal preparation, remedy or prescription for any of the ailments or diseases enumerated in this act, shall be deemed guilty of a misdemeanor, and upon conviction thereof, shall be punished by a fine of not less than $1,000 or by imprisonment in the County jail for a period of not less than 6 months nor more than 12 months, or by both fine and imprisonment. Any owner or managing officer of any newspaper, in whose paper shall be printed or published any such advertisement as is described in this act, shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be punished by a fine of not less than $100 nor more than $1,000, or by imprisonment in the County jail for a period of not less than 6 months, or by both such fine and punishment."

A more stringent law was passed in Chicago, and one similar to the Chicago ordinance was passed by the New York Board of Aldermen of the present year. See page 330.

"A DUTY WE NEGLECT."

THE indifference shown by the medical profession, collectively and individually to the enactment of vicious legislation imperiling the public health is not only regrettable but evinces a spirit of selfish indolence. The requests made by the Legislative Committee of members, to write or explain to their party representatives in Albany, what is pernicious and what is good in the medical bills introduced for adoption are practically unheeded. The Committee is left to fight unaided the legislation sought for by well organized pseudo medical cults through asthenopic politicians whose vision is limited to the field of the exigencies of personal politics. This apathy should not exist. Let your culpability in the past be an incentive to fulfill your duty in the future. As family medical advisors to legislators, with the confidence and friendship which that relationship implies, you can instruct them regarding the true character of the bills introduced, and request their aid in refuting those which are pernicious to the public welfare. It is necessary to bring home to the legislator the vast importance of health legislation so that he will not in his ignorance, having no particular interest in a medical bill, indulge in reciprocal interchange of votes. At the hearing before Governor Glynn in Albany, on April 15th last, on the so-called Mental Healing or Christian Science bill, and the Osteopathic bill, which required only the Governor's signature to become laws, it was a trifle humiliating to see the small group of medical men present in contrast to the 1,000 or more Christian Scientists and Osteopaths. Of the former it is pleasing to record that they presented an assemblage of intellectually clever appearing people, a characteristic frequently accompanying highly developed neurotic temperament. Of the latter, their physical development and deportment left nothing to be desired. It was well for the public, that, seated in the governor's chair was a man who possessed a trained and judicial mind

—a man who recognized the broad humanity of our contentions—and expressed it in his veto.

For a model of deductive, persuasive pleading, free from vituperation and epithetical insinuations, the JOURNAL takes pleasure in submitting Dr. Abraham Jacobi's address.

"Amongst the main rights and privileges of citizens are security of life and the enjoyment of health. The health of the individual is secured by his own sufficiently taught and well directed efforts, advised by scientific and technical knowledge, and by the safeguards furnished by the intelligently guided democratic society. After protracted discussions, sometimes extending over years, never unguarded like that of this year, successive legislatures have aided the medical profession in extending the two years curricula to three years as long as three decades ago, to four years a decade ago, to the addition of a hospital year a year ago, the increase of entrance requirements before the matriculation of students, and twenty years ago to the enforcement of a state examination before granting the license to practice on human beings. Even the specialist has to prove by his full four or five years' study and a thorough examination, that he is an all-around doctor before pretending to cobble like a watchmaker or a corset builder, an isolated wheel in the composite human organization. This safeguarding of the people was the result of the work of the physicians of the state, supported by the state as represented in successive legislatures. In a late discussion, like many times before, it was claimed that the irregulars want only 'fair play'. So do I. But fair play, not for self-complacent half knowledge or the pert ignorance accumulated in an idle life, but fair play for ten millions of American citizens who are entitled to the restoration and preservation of their health; to the reduction of infant and adult mortality, and the lengthening of the duration of life.

"Such results have been obtained by the initiative of doctors, either alone or in coöperation with authorities or private aid. That is how cholera was kept out of the country. Swinburne and Hoffman Islands were rebuilt; the watershed was cleaned and the water supply of New York was protected; the milk supply watched and purified; and infectious diseases, such as diphtheria, typhoid fever, smallpox and meningitis, whose very existence is denied by obtuse fanatics, was diminished or totally exterminated. All that and much more was accomplished by the collective work of physicians, of their societies, their laboratories, in ceaseless, unselfish work.

"Is the profession of medicine what is called 'a union'? Surely there is no money in it; less, indeed, now than ever. Whenever there is a combat on to reduce the number of diseases or epidemics which are reputed to yield an income to the practitioner, it is he whose initiative and fearless unselfishness fights the scourges at the risk of his life and of the poverty of his abandoned widow and orphans. If there be any business or calling which permits dilettantism and levity it is not the practice of medicine or the dealing with human lives.

"The benefaction coming to the individual and the people from an enlightened profession, but through it only, can be secured only by a high degree of education and knowledge in the medical profession; in the public schools and the public; by the enforcement of strict and always new rules having in view the elevation and regulation of the practice of medicine; not by the letting down of bars in favor of misled and misleading of selfish ignoramuses or enemies of the people; but by the discreet scrutiny of bills presented to the legislatures,—indeed, the two bills now before the Governor waiting for his veto are a humiliation to the common sense of the people, who always, when looking for self sacrifice and altruism, turn their eyes to the doctor; and, finally, by the keen-eyed watchfulness of the discerning executive whenever legislatures have been led astray."

"THE GREEN-BOOK."

WE desire to call to the attention of members the necessity of promptly returning the cards containing data for the Directory. The copy is now being compiled and will soon be ready for the printer. It is important that this intimation be acted upon as it is the desire of the Publication Committee to make the Directory as complete as possible. Delay in returning the cards and corrections received after the matter has been set up causes additional expense to the Society. The Directory this year will contain the *office hours and telephone numbers of all physicians,* those who live in towns and villages as well as those who live in large cities. You will, therefore, if you have omitted to incorporate your office hours and telephone number, please to do so, or if having sent in your card you failed to do so, address a note with the desired information to Dr. Floyd M. Crandall, Chairman Committee on Publication, 17 West 43rd Street, New York City.

Original Articles

SOME OF THE NEWER METHODS OF TREATMENT IN NERVOUS AND MENTAL DISEASES.*

By L. PIERCE CLARK, M.D.,
NEW YORK CITY.

I AM aware that I have undertaken to write to a very large text—a text that has only been more or less adequately handled in a recent work of two large volumes of encyclopædic dimensions. In assuming this title I had two points in view: First, to take a subject that would permit me to touch upon several topics of treatment in nervous and mental disorders that are only remotely correlated, and secondly, to bring to your attention a series of diverse points of treatment, so that every one of us may find some one subject in which he may be particularly interested. In doing this I hope to touch only, in a casual manner, upon the several subjects, and give you as succinctly as possible the last word, as it were, upon the different issues brought up and the general trends of work and interest in neurology.

It is generally held by the neurologists that the Wassermann reaction and the modified use of salvarsan and the detection of the spirochæte in the central nervous system have done away with much of the older ideas that there is a para-syphilitic condition to be handled in nervous diseases, and instead we have come to recognize that there is but one condition always present—that of syphilis of the nervous system. We find that by fully eradicating the spirochæte from nervous tissues we put an end to degenerative changes in the brain and spinal cord, and if the damage to these delicate structures has not been great and they have not lost their innate power to take up their function again, one may hope to recover many cases of nervous syphilis. I will not speak of the different methods of salvarsan therapy in syphilis of the nervous system, as such are more or less well-known, but pass on to a newer and more pressing issue of the use of this drug in the treatment of general paresis. Since the finding of the spirochæte in the brains of paretics by Noguchi and Moore, different plans of assault upon the integrity of the spirochæte have been made. The very remoteness of the germ from vascular channels has made the problem of, how to get at it, the paramount question. Trephining the skull and direct injections of salvarsan or salvarsanized serum have even been tried. Probably the most rational and effective method of treatment is that outlined by Swift-Ellis, which is the use of a salvarsanized serum injected into the spinal canal; by this plan a series of cases in special hospitals and asylums have been treated. Probably the best controlled and observed cases are those by Cotton in the Trenton asylum. At the present time all his early cases, including juvenile paresis, have shown favorable results. There is little reaction in the injection treatments, and private cases are required to stay in the hospital but one night before returning home to wait for the next treatment. Cotton constantly reiterates, that in the most cases selected for successful termination the diagnosis must be very early, before tissue destruction in the cortex of the brain has far advanced. No one can say whether the prompt cessation of most of the symptoms of paresis is merely a remission or a real and permanent check to the disease. From the cases of Cotton's, which I have seen, the betterments do not appear like the older and well-known remissions in paresis. However, only time will tell. There is now the greatest need of careful clinical study of these salvarsanized paretics before and after treatment.

Some recent experiments, to determine how salvarsan gets to the spirochæte in the brain, have been undertaken in the last few weeks by Tilney. These studies are highly important. He found by a plan of vital staining of trypan red, by various methods of administration in animals, given intraspinously, venously, and muscularly, that probably salvarsan, administered intraspinously, reaches the deeper portions of the central nervous system by two very distinct routes: First by the trabeculæ extending from the pia mater, and second, by its penetrating the vessels and thus having access to the deeper structures of the cord and brain. It has been suggested by Goldmann, that possibly the intravitum staining substance may be used to carry in the remedial agents, and Tilney is now investigating this important therapeutic suggestion. By all the various experiments it would seem to be conclusively shown that the intraspinous method of introducing salvarsan is the best plan of giving the drug. If the intravenous method is employed, very much larger doses must be used. One cannot help but think that this intraspinous administration of salvarsanized serum promises much in the future treatment of general paresis, the fatality of which disease is greater than cancer, and comprises at least a third of all asylum deaths.

The next subject which we will consider, briefly, is that of the palliative treatment of brain tumor. It seems to be generally admitted that the vast majority of all brain tumors are either non-localizable or cannot be removed when found, therefore, our best attention of recent years has been toward the adoption of palliative measures, such as the so-called decompression operation, particularly to preserve the eyesight, relieve headache, vomiting, etc. Probably all have noted the formation of the tumors and brain hernias after the usual decompressive operations for increased intracranial pressure. Many different methods have been suggested to obviate

* Read before the New York Medico-Surgical Society, March 21, 1914.

these mishaps, but probably none have been of such signal value as the puncture of the corpus callosum, recently extensively reported upon by Elsberg of this city. During the past winter the latter surgeon reported the results in thirty-two cases; these were done for non-obstructive hydrocephalus and for obstructive hydrocephalus due to localizable but non-removable or unlocalizable brain tumors, and as a temporary procedure, in removable tumors to save the eyesight. His results, as well as some reported in the clinics of other cities, have been very satisfactory. It is undoubtedly the best decompression operation for mid-brain lesions and for tumors under the tentorium which cannot be removed. This operation conserves the patient fully as much as the older decompressive measures with enormous hernias following operation. The new operation is simple and can frequently be done under local anesthesia. Elsberg has reported no deaths in his thirty-two cases.

Surgical repair of nerves that have been lacerated and contused still finds a large field of usefulness. The secondary suture for brachial birth palsy (the obstetric accident of Erb), first undertaken in this country by Taylor and myself, has proven that if the primary injury has not gone beyond the second stage, that of laceration of the cervical fascia and the rupture of the nerve sheaths, the nerves can be practically restored to their full function when operation is undertaken early. Unfortunately old text-book dicta die slowly; in many it is still stated that spontaneus recovery from this form of obstetric palsy is the rule, even though severe lacerations of the brachial plexus obtains. On the contrary, as Prout, Taylor, and I have repeatedly shown experimentally and clinically, such spontaneous regeneration cannot take place. One needs but to see the microphotographs of our different publications, and especially Taylor's masterly summary of the whole subject in last December's issue of the *American Journal of the Medical Sciences*, to fully realize the truth that the very earliest operation, after four or six months, when little or no improvement is shown, then one should seek surgical repair and save these little children from a life of crippled misery. The work of nerve repair in palsy of the seventh or facial nerve shows even better results. The function of the paralyzed face is restored in the course of three to seven months in all recent cases, and has been known to be restored to a great extent after a score of years, as shown in one of Sachs' cases. In one of our own cases we had very poor results in a complete palsy from mastoid operation, which had existed for twelve years, and almost complete facial atrophy obtained with the exception of some muscles about the mouth. Singularly enough, in this case the few non-atrophic muscles regained considerable power after operation and did so promptly in three months after intervention. There is still a great difference of opinion as to whether one should use the spinal accessory or the hypoglossal as the implanting nerve. Occasionally one sees a slight degree of atrophy of the tongue though one but open the sheath of the hypoglossal nerve and lay inside its sheath the paralyzed seventh nerve. A slight atrophy of the tongue matters little, neither does the associated movement of the tongue after anastomosis has been undertaken, when the face may move with the tongue; these two movements are more naturally allied, anyway, than those of the shoulder and face, which occurs when the spinal accessory is chosen. Personally, after seeing many of these operations of both sorts for years, I should still advise the facio-hypoglossal anastomosis.

It is regrettable that nerve anastomosis has as yet not proven serviceable in the later treatment of poliomyelitis; one would consider poliomyelitis the ideal disease for this surgical procedure. Unfortunately the distribution of paralysis is rarely so limited as it clinically appears to be. For instance, it is rare to find the anterior tibial exclusively involved. If it appears to be so, clinically, pathological studies prove this is really not so. The marchi and other degenerative stains show much diffuse damage in the nerve fibres in other adjacent nerves to those actually paralyzed. One can readily see that attempts to draw neural power from such a partially damaged nerve might prove disastrous to the functional integrity of the tapped nerve, thus making the palsy larger, in clinical expression, than before nerve anastomosis were undertaken. In the few cases that have been reported one sees that the foregoing reason was probably the cause of the failure. In two or three cases of mine thus treated, I assured myself that this explanation was probably the more reasonable one. However, when we find a complete palsy of one extremity, an arm or leg of one side, in such lesions it has recently been proven that we are justified in doing a laminectomy and graft part of the nerve roots from the sound side to those paralyzed, thus carrying the graft across the cord. Several cases thus treated in France and England and a few in this country have proven very successful. The whole problem of successful secondary suture and anastomosis of nerves is intimately bound up with the subject of the degeneration and regeneration of nerves. The subject is perhaps of sufficient importance for us clinicians to briefly note some of the facts concerned with the subject.

For years neurologists have found themselves either in the warring camps of the "centralists" or the "peripheralists." That is, a certain group of investigators have made careful histologic studies and have apparently shown conclusively that the central end of reunited nerve grows down in the empty nerve strand tubes of the peripheral portion. An equally energetic, though opposing, group of investigators have contended that certain microscopic short segments of nerve

fibrils have the power to regenerate themselves independent of the stimulus or help from the central end. Thus the warfare has progressed since 1880 to the present day. All best investigators at the present time are apparently agreed that the proximal section of a simple division of a nerve undergoes simple atrophy, in which the medullary sheaths of the nerves undergo greater wasting than those of the peripheral segment. Regeneration of nerve fibres operates in a fashion essentially the same in central or peripheral ends of reunited nerve, although it is much slower in the peripheral segments. This fact is constant in any resected or contused peripheral nerve. Even after so short a time as fifteen hours one finds in the central end of a resected nerve evidence of a reparative process already at work; in these few hours there are present new short-length nerve fibres containing myeline, while in the peripheral end the same degree of activity is not present until three or four weeks, but in six months they appear plentifully. It would appear from the most recent research that nerve regeneration after division has its point of departure in the nuclei of the neurilemma, which are surrounded by protoplasm and in undergoing cell division form new cells, each forming a definite nerve segment. In the protoplasm of this segment, the medullary sheath and axis cylinder undergo differentiation, the latter constituting the central conductive element of nerve cells, which, each for itself, become a link in a chain of conducting cells.

In fine, then, the advance work of the past year on these problems of degeneration and regeneration of nerves, especially by Doinikow, Henriksen, and Biondi by various delicate technique, including that of the new principle of vital staining of nerve tissues, has at last rather conclusively proven that the central and peripheral ends of divided nerves before and after suture undergo degeneration and regeneration in such a manner that one may say that the healing of nerves goes on locally as well as under the impulse from the central end. Therefore, the "centralists" and the "peripheralists" of the past were both partly right and partly wrong. The practical clinical fact to be drawn from it all is that the earliest possible reunion of divided nerves should be practiced, and that one gives clinical hostage to functional fortune the longer such reparative procedures are delayed. Finally, after much clinical experience in this field, I must say that I have found that the laws governing the healing of nerves are very peculiar and are subject to change without notice; the rules of healing differ widely from the repair process of almost any other tissue of the body. The whole issue is possibly on the eve of a great impetus, especially in those instances where large gaps between the nerve ends obtain. It is just in this latter instance that the transplantation of nerves, a method that may grow out of the careful and important work of Harrison and Carrel, may find a practical application. Let us hope at the same time, however, that the various preventative measures of paralysis, peripheral and spinal, may be so perfected that there may be a steady decrease for the need of the future surgical treatment. In this respect we must still hope that we may soon find the exact preventative method against the transmission of poliomyelitis, and that we may soon have a serum or chemotherapy against its insidious attack in the individual when the tragic disorder is once initiated.

Surgical efforts for relief of spastic palsy, as inaugurated by Förster in 1908 and modified and applied by a number of us, has not borne the perfect fruit we at first thought it might. It will be recalled the original principle was to resect the sensory or dorsal roots of those spinal cord segments presiding over the paralyzed and spastic muscle group. Several hundred cases have now been operated upon both in this country and abroad. Without burdening this report with detail, one may say that in the vast majority of the cases treated the rigidity of muscles has been permanently relieved, but such a thorough and systematic education and re-education of muscle movements, covering a period of years, has been found necessary that the surgical procedure of dividing the nerves is but the merest episode to the successful treatment of the individual cases. The result has been that only in a small majority has a practical or full restoration of station and gait been obtained.

The best results follow in cases where the spasticity is confined to the lower extremities, and that, too, in the abductors and where the intelligence is fairly good. This necessarily greatly limits the field of operative cases, inasmuch as the type of palsy usually carried with it a great mental defect. The treatment has proven of little avail in any of the adult spinal spasticities following in the wake of a myelitis or a sclerosis, for two reasons: The spinal disorder involves other than motor elements, and in the majority of cases the lesions are more or less progressive and outrun the field of operation first planned. However, one may finally say that in carefully selected cases dorsal root section followed by proper continued training treatment promises the best end results of any plan of treatment heretofore planned for relief of the spasticity following in the wake of infantile cerebral palsies of children.

In this, or any other more extensive review, it must be admitted that the present methods of study of the nature and pathology of organic nervous diseases has not produced any very startling new facts in treatment of such diseases during the past decade. It is true researches of all sorts in laboratory, clinic, and experimental stations have added, slowly but surely, a more exact knowledge of the structure and functions of the several structures of the nervous system. But all this work has really been but a rounding

out of lines of work long ago visioned by the great masters—Charcot, Erb, Meynert, and Jackson. However this may be, we should not disparage this necessary completion of our knowledge of the structure and functions of the brain and spinal cord. Often in the details of such investigations one really finds the key to many a specific plan of treatment not apparent when the first part of the research is outlined.

We shall now turn our attention to that part of our subject which has practically had its maximum and not minimum development in the past decade: That of the nature and treatment of the psychoneuroses and mental disease. In this group one finds the hysterias, phobias, obsessions, tic and habit movements, the depressions, and the frank insanities. Until within very recent years it has been supposed that the name neurology naturally covered mental disorders, and it has been possible to find in many text-books a short, bizarre, and rather rigid anatomic description of various types of mental disorders, but their very inconsequential and naive plans of treatment have, in a measure, given many physicians a very contemptuous opinion of the subject, which the neurologist himself seemed to share in preparing this part of his book. For instance, in a very excellent text-book of nervous diseases of our day all the functional nervous disorders are hardly given more space in the book than that devoted to brain tumors. When one bears in mind that nine-tenths of all diseases neurologists are called on to treat are of this character, and that a severe neglect of them has enabled at least two large religious movements to make a world-wide exploitation of what they are pleased to call a new discovery in treatment of these diseases, and, what is more, many of the lay public believe these movements have discovered the first effective plan for the eradication of functional nervous diseases, it is high time we should all awaken to our duty and get on the job. A good number of neurologists are awakening; yet it may seem to many who are general practitioners that the process of our getting awake is as though our sleep had been Rip-Van-Winkle long, and as heavy as the pall of Lethe permitted, nevertheless, the point of real importance I have to declare is that we are awakening. We freely admit that our greatest handicap has been our inability to throw off the "tail of the serpent" of reckoning all nervous disorders, and especially the neuroses, such as hysteria, obsessions, tics, and the like, in terms of structural cell alterations in the brain and spinal cord. Many of us still hope against hope, and accuse the as yet shadowy ghosts, the ductless glands, for these nerve disorders. I submit, when we bring forward a line of mental and nervous symptoms that are simple and understandable and that show the plain successive order in which certain false ideas and nerve symptoms come about and speak of these symptoms as "the mechanism" by which such diseases have originated, that we are the conservative and traditional followers of the masters of rational medicine. Those neurologists who wish to speak of auto-intoxication, toxins, and disordered ductless glands as the cause of the functional and mental disorders, must submit proof, and not we. Theirs is the burden of proof, and not ours. No man can reasonably help believing that there is always a structural basis for any sort of function, natural or perverted, but I submit again, while the Abderhaldens and Metchnikofs are inspiring laboratory workers to find these chemic defects or ductless gland alterations, and while they are experimenting to find a successful chemotherapy or serum therapy, it behooves all of us as clinicians to stick close to facts that are at hand and are demonstrable, and, above all, we need to refine our system of taking case histories in the psychoneuroses. Many of us have still to learn that a very careful and detailed history, developed along the lines by which the disease process has come about, is just as scientific and important as any urinalysis or Wassermann reaction.

Those of us long immured to the study of gross and microscopic pathology, and especially clinical pathology, have been woefully slow to recognize that the careful recording of various emotional reactions which neurotics show to everyday situations are highly important, and are scientifically comparable to any laboratory test of getting reaction time, or making literary or puzzle tests. In fine (and I want to say right here that I am telling no tales out of school—school is out, and many a neurotic is shouting the news everywhere in the street!) the day of fanciful and cryptic neurology in the treatment of the neuroses is past; the cards must go on the table, face up, to the average neurotic patient. Such neurotics must know and see exactly what is being done in analysis, and they must become an important, if not the most important, participant in the plan of campaign in treatment. Neurologists are obliged daily to shamefully admit that, in many respects, until recently they were but little in advance of the Middle Ages in the treatment of the neuroses. Some of us are still striving to wash out the unclean spirits (symptoms), electrify them out, rub them out, or purge them out. Now that many of us are divorcing the auto-intoxication idea we no longer think exclusively in histologic terms of neurotic symptoms. We are aware that we must adopt a certain psychology and commonsense term instead. In place of an extensively equipped laboratory to study these neurotic symtoms, we find we have need of a pencil, paper, a quiet room, and a certain amount of tact; for silence as well as for talking. We need to know the commonest yet most important ways different types of personalities meet the various difficult situations in life, and what certain types and trends of individual habits may mean. We must know and treat the individual as a bio-

logic unit, physically and mentally. Many may say that such plans of analysis presuppose a knowledge and interest in the small affairs of life. The idea is true. A study of the disorganization of habits in a neurotic is no less difficult and important than the disintegration of the proteids in digestion and elimination, except we know the former is a part of neurotic disease, and we hope the latter may be.

What has been the result of this more intensive plan of analysis of the psychoneuroses? It has shown us that a perversion of the fundamental emotional instincts are at fault in the hysterias, and that taken early one is able to set these disorders right, not on a superficial reconstruction as heretofore by electric exorcism, but in such a radical and fundamental manner that the vast majority of such patients are of permanent use to themselves, besides, what is not less important, they cease being a pest to their friends and to society at large.

What we all need to do is to rid ourselves of mere labels, names, and cant phrases and face the facts. A large number of periodic neurasthenic depressions have been found to be at bottom doubt neuroses, the *folie de doute*, and are being treated upon that basis. I have several cases of this sort. A large number of these periodic depressions have been stopped by psychotherapy. I have one case of a woman of fifty-six, who had two or more depressions (which had been called manic-depressive by some physicians), and who had her ailment for twenty-four years. She has now corrected the defects in her mental and emotional life, at least sufficiently so that she has not had a depressed day for the past six years.

Some of the later work of Campbell, Hoch, Abraham, and some of my own studies, clearly point the way by which we must reconstruct all our work upon the nature and mechanism of the maniacal excitements and depressions. These workers contend and present a number of concrete cases to show that the heretofore often meaningless jargon of these manic and depressed individuals has a real bearing upon their form of psychosis. Further, if one will but take the pains to piece together the fragments of the flight of ideas such patients present, the same will show a rather definite mosaic pattern that not only makes sense but really intimately concerns the real difficulties with which the patient coped unsuccessfully. In addition to all this it has been more than proven that a person breaks down mentally, into a psychosis of the manic-depressive type, and especially in the depressive form, because there is a blocking or a failure for the proper outlet of the mental and soul energies, ambitions, and ideals (*libido*). Still further, you and I have these same blockings and shortcomings in winning our goal in life, but for some reason these manic-depressive individuals cannot make the fight, or they go under in the contest. All these depressions of melancholic type occur in certain individual temperaments, usually classed as the open types of personality. Studies are now in progress to determine just what way different persons react to success and failure. It is truly surprising that no one has carefully studied such a relatively simple everyday mental reaction, but such is the case.

A number of us are studying the innate nature and mental treatment of the tics. We have already found that such disorders as mental torticollis and the facial tics are really the outward expressions of certain types of mental conflicts, and which, when such individuals are fully freed by a detailed analysis of their disorder, the outcome in relief is surprisingly good. When we all realize how stubborn to treatment the tic disorder has proven in the past we should hasten to welcome any rational plan of therapy that promises any measure of permanent success. It is singular and ironically amusing that the facts we are but just now working out in detail in the tic disorder were long ago specifically given general elaboration by Charcot. The original precept of the master and the detailed facts of to-day are now one.

Two widely divergent schools are working on dementia præcox: One, the physical group that makes the insanity the outcome of certain types of toxins from ductless glands, and the other, who holds that the mental disorder is the outcome of a disorganization of innate trends of conduct and habit, and that, in consequence, the individual reacts or behaves to a type of life realities that exist only in his own diseased imagination. Hence he is shut in or shut away from the normal everyday reality and its rules of behavior. Both groups claim successes in treatment; no doubt a treatment based upon both views is now giving us better results than obtained in this well-nigh hopeless form of insanity a few years ago, when it was strictly believed that it occurred only in adolescence and was invariably attended by dementia. To-day we know that neither contention is true.

Finally, I trust I have brought out a sufficient number of individual points of treatment in nervous and mental disease to open a broad and earnest discussion of the individual topics, which is the main purpose of this somewhat rambling paper. And before closing I wish to point out in commendation a rather new departure neurologists are making, however such activity may be detrimental to individual practice. The new movement is a reconstruction of this special field to the cause and advancement of general social betterment. Foremost I wish to commend the National Committee of Mental Hygiene, whose practical work all of you, I trust, will have a chance to go over in detail in its important reports; (2) the establishment of special mental examiners to the juvenile courts soon, we hope, will be extended to all the criminal courts; (3) the passage of a state-wide law for a commission to study the cause and prevention

of feeble-mindedness, which passed the New York State Senate yesterday, and we have good guarantee that it will soon be passed and signed by the Governor; (4) the steady extension in other cities of mental clinics in connection with the public school system, wherein all neurotic and defective children may be carefully examined and taken proper care of in one way or another before their diseases, crimes or defects become a social menace and enormous economic loss to the family and the State.

THE RELATIONSHIP OF THE GENERAL PRACTITIONER TO THE SURGEON.

By NATHAN JACOBSON, M.D.,
SYRACUSE, N. Y.

THE President of the County Society has asked me to make some remarks bearing upon the relationship of the general practitioner to the surgeon, and particularly as to when the services of a surgeon are needed. In his letter he states that it has been his experience that too frequently the services of the surgeon have been called at a time so late that to render them then would be unjust to the surgeon and to the patient as well.

With increasing experience we have learned that in many cases, in which medicinal treatment is futile, surgery can afford lasting relief. Many conditions are subjected to operation for which a quarter of a century ago no one would have suggested surgical treatment.

There are two groups of cases in which it seems to me that early association of the physician and the surgeon would be of tremendous advantage to the patient. In the first group should be placed all of the emergency cases, whether of traumatic or pathologic origin, and in the second, a class of cases which, while not acute, present in their early period a time when operation would afford a cure, while because of delay the opportune time for such cure is lost. The surgeon is very apt to be called promptly in cases of emergency of traumatic origin, yet there are certain conditions which perhaps are not sufficiently appreciated by the general practitioner. There is no class of cases in which immediate need of the surgeon is greater than in penetrating wounds of the abdomen. No matter how slight may be the surface wound, in every case where there is reason to suspect that peritoneal cavity has been entered, no delay should occur. The only salvation of such patients lies in a clean but prompt investigation of the damage done within the abdominal cavity. I have seen stiletto wounds of not more than one-half and possibly one-quarter of an inch in diameter in which the knife, after having entered the abdominal cavity, has been twisted in various directions and the intestines and stomach most horribly mutilated. It is a singular thing that a single penetration of the intestines or the stomach may not be followed at once by evidence of profound shock or other manifestations to suggest the seriousness of the injury. Within a few years a case has occurred in a nearby city of a man having stabbed a fellow workman about one-half hour after the latter had eaten his breakfast. The injured man was taken to a hospital. So slight were the evidences of mischief that no exploratory operation of the abdomen was made. At noon he felt so well that he insisted upon leaving the hospital, and his father was indignant because the dietary of a healthy man was not furnished to his injured son. Throughout the day nothing occurred to suggest that intra-abdominal damage had been done, but before morning the stomach wound opened and the abdominal cavity was flooded with stomach and intestinal contents; general peritonitis occurred and the man died. I know of no excuse for not proceeding at once, in every penetrating abdominal wound, to explore the peritoneal cavity, and determine the extent of the mischief. Gunshot wounds of the abdomen, no matter how little evidence they may present of injury to the viscera, must at once be met by surgical exploration.

We have, however, another group of cases in which there has been no penetration, and possibly no apparent injury to the abdominal wall. I have repeatedly seen rupture of the hollow viscera, as well as tearing of the liver and spleen, from blows upon the abdomen. These concealed injuries should be investigated by a surgeon who, from the experience he has had, knows the possibility of rupture of the urinary or gall bladder, the intestines or stomach. In this connection I might also refer to the serious results which follow a ruptured urethra. Blows upon the perineum, in which there has been laceration of the surface tissues, are apt to be followed by a most furious form of cellulitis, if treatment is not at once administered, and urinary leakage is permitted to occur into the tissues. There is no form of cellulitis which is more destructive and apt to be associated with a more virulent toxemia than that in which bruised and torn tissues become saturated with decomposed urine.

Quite as serious as these traumatic ruptures of the hollow viscera are those perforations due to pathologic conditions. A perforating duodenal or gastric ulcer, an appendix which has been perforated by a fecal stone, or for any other reason has ruptured, and a diverticulitis affecting usually the large intestine and leading to perforation will produce results quite as serious and urgent as though penetration had resulted from a traumatism. It is imperative that these condi-

tions be recognized at once. After a lapse of six hours the prognosis is so much worse and the resulting general peritonitis imperils the life of the patient. The pain caused by a perforation of one of the hollow viscera, especially the duodenum, is most intense. It is described as being the most severe pain that an individual can suffer. The occurrence of such agonizing pain, associated with early localized muscular rigidity and attended with shock more or less profound, is Nature's loud call for surgical help. No delay is justified.

Most of the acute intra-abdominal conditions are right sided. One of the few exceptions has been referred to, namely, perforating diverticulitis. This usually occurs on the left side of the abdomen. It is sometimes impossible to differentiate between the different acute conditions which occur with such extreme suddenness with intense manifestations. The Englishmen have been describing the acute emergencies which appear within the abdominal cavity under the single term of "the acute abdomen." It seems to me only necessary for the physician to recognize the existence of an acute abdomen. With such recognition he must appreciate that nothing in the way of medicinal treatment can be of any avail. The administration of a hypodermic injection of morphine may in part relieve the suffering of the patient. More frequently than not, the individual, not a morphine subject, is not relieved by ordinary doses of morphine. The very fact that the pain is so intense that the usual hypodermic injection does not furnish relief should in itself be sufficient warning to the medical attendant that the existing condition is an unusual and serious one and probably demands surgical help. If we defer operating until general abdominal rigidity occurs, until the intestines have become paralyzed by the occurrence of general peritonitis, until vomiting becomes persistent and not even flatus is discharged, we then are no longer dealing with a simple primary condition but with a secondary general peritonitis of which unfortunately we have learned that only the exceptional case recovers.

It is not the purpose of this paper to deal with the distinguishing features of the various acute intra-abdominal conditions, but rather to call attention to the manifestations which demand immediate surgical relief.

That the appendix is responsible for more acute abdominal catastrophes than any other organ is a well recognized fact. I cannot state too emphatically that my experience justifies the statement that there exists no single manifestation nor any group of signs or symptoms which positively indicate that an acute appendicitis is of so mild a character that it will recover without operation. Let me state in plainer words my conviction that every case of appendicitis presents a surgical condition and demands a surgeon.*

* See letter Dr. Wiseman, page 330.

INFECTION WITH THE BACILLUS COLI COMMUNIS, COMPLICATING PREGNANCY, LABOR, AND THE PUERPERAL STATE: ITS MEDICAL AND SURGICAL TREATMENT.*

By EDWARD P. DAVIS, M.D.,

PHILADELPHIA, PA.

RECENT studies in obstetric pathology have added to our knowledge of septic conditions complicating pregnancy, labor, and the puerperal state, infection with the bacillus coli communis.

It is of practical importance to note that this germ does not produce an antitoxin, that it does not decompose urea into ammonia, and hence that when it infects the urinary organs the urine does not become alkaline. It is readily isolated in pure culture from blood taken from the kidneys and from blood obtained from other portions of the body. In the genital tract it is often present with staphylococci; less frequently with streptococci. Its free presence in the organism in considerable quantities causes high leucocytosis, fever which is often extreme, and in severe cases rigors. Although producing a severe reaction it seems less fatal in its results than the streptococcus.

In pregnancy the action of this germ has been extensively studied in pyelitis. In the experience of the writer, infection of the pelvis of the kidney by the bacillus coli communis is frequently accompanied by appendicitis. The germ gains access to the kidneys by ascending infection from the bladder through the ureters, or by its passage from the wall of the bowel through the contiguous ureter to the pelvis of the kidney. It may also enter the kidney through the blood current. From the anatomy of the parts, the right kidney is more often affected, although both may be involved.

The cardinal symptoms of this condition are considerable fever, pain referred in the back to the location of the kidneys, pain in the right lower abdomen, high leucocytosis, and in severe cases chills and great prostration.

The extensive literature of appendicitis complicating pregnancy shows that this disease runs a particularly insidious course in the pregnant woman. Unless promptly checked by the removal of the appendix, should adhesions and suppuration occur, the uterine wall becomes a portion of the wall of the abscess cavity, and the action of the uterus in expelling its contents must inevitably open this cavity and permit the infection of the peritoneum by its contents.

Those who operate extensively for diseases and infections of the liver recognize the fact that many cases of cholecystitis may be traced to colon bacillus infection during pregnancy. The condition is rarely recognized during pregnancy,

* Read at the Annual Meeting of the Medical Society of the State of New York, April 30, 1914.

and pain referred to the region of the gall bladder may be ascribed to the pressure of the uterus or the movements of the fetus. Unless cases are thoroughly studied a mild infection passes unnoticed.

Colon bacillus infection of the large intestine complicating pregnancy is seen in women who have neglected hygienic precautions during pregnancy, who have remained obstinately constipated, or who have taken irritant drugs to empty the bowels. The condition may remain latent during pregnancy, but after the uterus is emptied, probably from the disturbance of labor, the patient has abdominal pain, moderate distention, remittent fever, leucocytosis, and many of the symptoms of puerperal septic infection, of uterine origin. The pain may usually be localized in the intestine and not in the general peritoneum. The distention and tenderness are limited to the region of the large bowel. If the patient comes to operation a diseased appendix is found, and ulcerated surfaces in the wall of the large intestine may be seen beneath its peritoneal covering. Should the intestinal infection be active and the lymphatics of the peritoneum become involved, death will ensue, with symptoms of general peritonitis. Colon bacillus infection of the large bowel complicating the puerperal state may be mistaken for typhoid, malaria, or septic infection of uterine origin.

The differential diagnosis may be made by laboratory study, and proven by section, with removal of the appendix.

The colon bacillus may infect the newborn infant, causing icterus and ophthalmia.

The colon bacillus may be the cause of septic abortion. It has also been isolated in pure culture after labor, and hence may cause puerperal septic infection. Its action is not confined in this regard to parturient patients, as it may complicate the recovery of patients operated upon for disease of the pelvic and abdominal viscera.

From this brief summary of the pathology of this condition, as known at present, we must recognize infection with the colon bacillus as a clinical entity of importance, both in prevention and in treatment.

In prophylaxis, as the colon bacillus is most abundant in the colon the parturient patient demands especial attention to the condition of the bowels during pregnancy. As it is impossible to complete the removal of the colon bacillus, such laxatives must be used as shall not irritate the mucous membrane of the bowel by producing ulceration, which would favor the passage of the colon bacillus into the lymphatics and blood vessels of the intestine. The writer has seen fatal infection with this germ follow the use of very irritating purgatives taken by the patient with the hope of killing the child and bringing on premature labor. Those laxatives which thoroughly soften the feces, producing a competent daily evacuation, and which can be used for long periods, should be employed. Such preeminently are compound licorice powder, or preparations of olive or petroleum oil. In cases where the colon remains persistently distended, with evidences of irritation, high colonic flushing with sterile salt solution, administered skilfully by a nurse, is of great value. The ordinary enema, as usually taken by a patient, is useless and often irritates and greatly disturbs the mucous membrane and veins of the lower bowel. As the colon bacillus is usually destroyed successfully by the resisting properties of the patient's blood, it follows that anemia during pregnancy must be prevented. Exercises and the absence of constricting clothing to prevent pressure upon the bowel, are also valuable. The patient's complaint of pain in the abdomen must not be treated lightly, and pregnant patients should be examined at intervals, not only to determine the period of gestation but also the condition of the abdomen. Persistent distention, with tenderness in the right lower abdomen, or tenderness in the left lower portion of the abdomen, are significant and demand attention.

During labor the proximity of the rectum to the genital tract exposes the patient to the danger of infection with the bacillus coli communis. The bowels should be thoroughly emptied before delivery, and it is well in prolonged and difficult labor to irrigate the colon thoroughly with salt solution. At the moment of birth the anus should be completely occluded by a pad of gauze wrung out of antiseptic solution, and should fecal matter be extruded during delivery this region should be thoroughly cleansed and precautions taken to avoid wounds in the genital tract.

The treatment of colon bacillus pyelitis complicating pregnancy has been extensively described by various authors. In ordinary cases rest in bed, a diet of pasteurized milk, or lactic acid milk, the free use of mildly saline waters, flushing of the colon, and the application of dry cold for pain, are usually successful. Should further treatment be required, a differential diagnosis by catheterizing the ureters, will locate the pyelitis. The infected pelvis may then be irrigated through the ureteral catheter with salt solution, boracic acid, or other diluted and non-irritating antiseptics.

Should these measures not suffice, and should pain be localized over one kidney, it is justifiable to expose the kidney by the usual line of incision, to bring it into the wound, anchor it by sutures passed through its capsule, incise the kidney, and with the gloved finger explore the pelvis. A gauze drain should then be carried into the pelvis of the kidney and the wound closed around the drain. Drainage should be maintained until the wound closes by granulation. If the right kidney be infected the removal of the appendix should precede the drainage of the kidney.

The writer has treated successfully three cases, removing the appendix and draining the right kidney by the method described. Pregnancy was uninterrupted, the patients going on to spontaneous labor with a living child.

Where examination of the kidney shows it to be extensively riddled with small abscesses, the patient having had hectic fever and evidences of pyemia, nephrectomy may be necessary.

The writer desires to draw attention to the difficulty of diagnosis where colon bacillus pyelitis occurs in pregnancy on the right side. Aside from the urinary findings the symptoms may be those of pyelitis, appendicitis, cholecystitis, ruptured ectopic gestation, or salpingitis. Where under careful observation the patient does not improve with physiological rest and simple treatment, surgical exploration is indicated. Should the condition of the kidney and appendix not explain the patient's illness the gall bladder should also receive attention, and if necessary be drained.

The writer has not had the opportunity of seeing cholecystitis in pregnancy become so severe as to justify operation. Cases which have been suspicious have gradually subsided with physiological rest and have gone on to recovery. Unquestionably this recovery is more apparent than real, for these patients are afterward treated by the general surgeon for chronic cholecystitis. The fact of pregnancy does not in any way contraindicate drainage of the gall bladder, and the operation should be done, if indicated. In one case the patient passed through pregnancy with considerable pain in the region of the gall bladder, culminating in eclampsia. From this she recovered with a persistence of the gall bladder pain. The writer then exposed the gall bladder, finding that it had disappeared in a mass of adhesions containing several gallstones. These were removed and the patient made a complete recovery.

Colon bacillus infection of the bowel should be treated by the prompt removal of the appendix, if tenderness can be located in that region. In some cases where the infection is not severe, the symptoms are those of abortion or premature labor. With such patients the leucocyte count should be watched and a careful search made for tenderness and distention, and if these symptoms are not pronounced, and the bowel does not become paretic, the patient may be treated by rest in bed, mild laxatives, irrigation of the colon, and the use of sterilized food which contains little residue. The free use of mildly saline water is indicated. The writer has seen numerous cases of this condition where the symptoms did not justify surgical interference and where the patient recovered with medical treatment.

Where the colon bacillus infection of the bowel develops after the birth of the child uterine septic infection must first be excluded. This may be done by finding the uterus normal in size without adhesions or tenderness, the lochial discharge normal, and wounds or lacerations uninfected or healed. Should non-operative treatment fail the patient should be subjected to section, with removal of the appendix. If portions of the intestine have become adherent such adhesions should be separated. The course of this infection is a long one, and recovery is usually protracted. The following illustrative case may be of interest:

The patient was an ill-nourished primipara who had lived in a warm climate. Her labor was spontaneous, with a living child, but fever developed during the first week of the puerperal period. There were no streptococci in the blood nor could puerperal septic infection be recognized. The patient had chills of moderate severity and the temperature was considerably raised, with sharp descent. As supporting treatment did not improve her condition, and no abscess could be found, the abdomen was opened. The patient's symptoms had been fever, malaise, and diffuse abdominal pain, with impaired peristalsis.

The appendix was found enlarged at the base with recent adhesions between the coils of intestine, while a portion of the transverse and the entire descending colon were red, thickened, and at one point showed an ulcerated portion beneath the peritoneal covering. The appendix was removed, the adhesions separated, and a gauze pack drain placed at the bottom of the pelvis with a cigarette drain to the former site of the appendix. Salt solution was given during convalescence through the bowel. The drains were removed gradually. The patient's recovery was tedious, and complicated by phlebitis of moderate severity.

In this case the Widal test for typhoid, the examination of the stools for amœba, the Wassermann reaction, and the test for tuberculosis, were all negative.

Infection of the uterus and appendages by the bacillus coli communis gives characteristic symptoms, and may be diagnosticated by the bacteriological examination of the contents of the uterus. The treatment of this condition does not differ from that of uterine puerperal infection of other origin, except that the tendency to mixed infection and pus formation in these cases must be remembered. Pelvic abscess may be expected, or multiple abscesses in various portions of the body. These invariably demand drainage.

The fact that the bacillus coli communis forms no antitoxin and that it has so far resisted treatment by vaccines, does not encourage us to hope for brilliant results by the use of sera or vaccines.

In the recent literature of the subject the following cases are illustrative:

Andrews (*British Medical Journal,* May 18,

1912) in a series of cases could distinctly trace the effect of chronic constipation. In some of his cases not only was the colon bacillus in its ordinary form found in urine from the pelvis of the kidney, but in one case the streptococcus and diphtheria bacillus.

Schickele (*Archiv. f. Gynäkologie,* Band 98, Heft 1, 1912) has been able to outline the distended pelvis of the kidney in the pyelitis of pregnancy by the use of the X-rays. His observations indicate that the pain in this condition is caused by tension upon the kidney due to the dilated pelvis.

Kehrer (*Zeitschrift gyn. Urologie,* pp. 24-40, 1912) found that in the pyelitis of pregnancy the colon bacillus was the originating cause in 79 per cent. He believes the infection is an ascending one from the bladder.

Mansfeld (*Mitteilungen aus der II, Frauenklinik,* Budapest, Band 2, Heft 1, 1912) in 26 cases of the pyelitis of pregnancy draws attention to the atypical character of the symptoms. There was general malaise, and the pain was referred to various portions of the abdominal cavity. The pain was rarely characteristic of the location of the disease. The colon bacillus was the cause of the infection, and in one fatal case the pneumococcus. The passage of bacilli from the intestine through the ureter was the most frequent method of infection. Up to the fifth month of pregnancy he had the best results by catheterizing the ureters.

Widal (*Journal d. Urologie,* I, No. 3, 1912) in two cases of pyelonephritis of pregnancy found pure culture of the colon bacillus not only in the urine but also in the blood.

Gemell (*Journal of Obstetrics and Gynecology of the British Empire,* p. 348, 1912) in a case of suspected appendicitis complicating pregnancy, found an encapsulated abscess, a portion of the wall of which was formed by the uterus. This abscess was drained, but premature labor followed, with septic infection and death.

Stöckel (*Münchener med. Wochenschrift,* No. 46, 1912) performed total extirpation of the uterus for criminal abortion with perforation of the uterus. The point of perforation was in the posterior wall of the cervix, and the intestine was not opened, but there was a mass of dark red blood adherent to the small intestine. There was beginning peritonitis when the uterus was removed. Bacteriological study showed that the colon bacillus was the cause of the beginning infection. The patient recovered.

Köhler (*Zentralblatt f. Gynäkologie,* No. 50, 1912) in two cases of septic abortion obtained the bacillus coli communis in pure culture from the blood, pus in the abdominal cavity and from abscess in the parotid gland. The case was studied most thoroughly from the bacteriological standpoint and the conclusion reached that the original infection had entered the genital tract from the anus.

Sackenreiter (Dissertation Strassburg, 1912) in studying 50 cases of putrid endometritis found bacillus coli communis the cause of the condition in 34 per cent. This was the most frequent bacterium found, anr seemed to be the most active in the production of the condition.

Sachs (*Deutch. med. Wochenschrift,* No. 28, 1912) in studying infection developing during labor, in 672 cases found the bacillus coli communis the cause of the infection during labor in 20 patients. Of these he could trace 14 as infected by this germ before labor actually began; 6 cases in which the membranes ruptured prematurely seemed to have been most severely infected.

Bondy (*Gyn. Ges. zu. Breslau,* 21, XI, XII, 1911) in an extensive study of abortion, in estimating the comparative frequency of infective germs, found that in putrid abortion 81 per cent were caused by germs other than streptococci, among which the bacillus coli communis played a very important part. In the treatment of infection by the colon bacillus Köhler found salvarsan without effect.

Gruitzner (*Münchener med. Wochenschrift,* Band 59, p. 1324, 1912) in a case of septic infection from the colon bacillus traced the infection to a complete laceration in the perineum and pelvic floor, the colon bacillus passing from the bowel into the lymphatics and then into the cervix.

The colon bacillus may also be the active agent in diseases of the newborn. Beneke (*Münchener med. Woch.,* Band 59, page 387, 1912) reports cases of severe icterus in the newborn caused by the bacillus coli communis.

Bertels (*Klin. Monatsbl. f. Augenheilk,* Band 49, Heft 5 & 6, 1912) calls attention to conjuctivitis in the newborn, which is not the result of the gonococcus. In 70 cases of ophthalmia but 38 were caused by the gonococcus. The remainder arose from the presence of other germs, among them the colon bacillus.

In the *American Journal of Obstetrics,* March, 1914, Foskett reports an interesting series of cases where the colon bacillus has been the active agent of infection in the uterus, tubes, and ovaries, as observed in Coe's service at the Bellevue Hospital.

Experience shows that patients react very differently to infective bacteria, and especially to the colon bacillus. Some tolerate its presence with little or no disturbance, while others are rendered severely ill. This fact adds new emphasis to the necessity for good hygienic care during pregnancy, so that the pregnant woman may be kept in the best possible condition to resist the action of bacteria.

We cannot agree with the suggestion so often made that in these cases pregnancy should be interrupted.

Infection with the colon bacillus is a complication of pregnancy or the puerperal state, and

pregnancy and the puerperal state are not complications of colon bacillus infection. Disturbance of the genital tract in these cases may open fresh avenues for infection and introduce the germ directly into the blood or lymph channels of the patient. Cases are recorded where labor has been induced with but temporary benefit, operation becoming necessary later, and followed by a fatal issue.

Nor does it seem rational to place any risk upon the mother's life with the hope of saving that of the child. In severe bacterial infection of pregnancy the child's life depends upon the ability of the placenta to destroy infective bacteria before they gain access to the child. So uncertain are the child's chances that the obstetrician should content himself with giving the mother the best possible care. Should the child die it will be expelled spontaneously, with the least possible disturbance and risk to the mother.

We believe that if this infection be kept in mind in dealing with parturient women that patients will receive adequate treatment more promptly, and that the mortality and morbidity in parturition will be lessened. Rest, hygienic and medicinal measures, should be given a prompt and thorough trial, but if improvement does not follow in a reasonable time surgical aid gives an excellent chance of recovery.

ASPHYXIA NEONATORUM AND ITS SEQUELAE.*

By W. P. MANTON, M.D.,

DETROIT, MICH.

THAT keen observer, but somewhat priggish old gentleman, Sir Thomas Browne, propounds the question, "Why, though some children have been heard to cry in the womb, yet so few cry at their birth, though their heads are out of the womb." Let us attempt to answer the query by considering one of the most potent causes of neonatal silence, asphyxia.

It has been said that 90 per cent of all cephalic born children enter the world more or less asphyxiated; whether true or not, the condition is so frequent that "familiarity breeds contempt," and the average physician gives it scant thought beyond immediate attempts at resuscitation. Yet asphyxia of the newborn presents a problem of no little interest and importance and is well worth the time and study which may be given it.

It is greatly to be regretted that statistics are so deficient, that no reliable data are to be had as to the frequency of this condition and its sequelæ in this country. In the recording of stillbirths, boards of health should insist on the reporting of causes of death, and no certificate should be accepted unless this is definitely stated. Were this obligatory, I am inclined to believe that a large proportion of neonatal fatalities would be ascribed to asphyxia. In the present day campaign for the prevention of infant mortality, such statistics would be of value in computing the benfits of prenatal supervision and would lead to improved methods in the care of expectant mothers and in delivery technique.

That infant death rate in general is very large is shown by the mortality statistics from the registration area for 1911. In the Children's Bureau Publication No. 4 it is stated that "42 per cent of the infants dying under one year of age did not live to complete the first month of life, and of this 42 per cent almost seven-tenths died as a result of conditions existing before they were born or of injury and accident at birth. Of those that lived less than a week about 83 per cent died of such causes, and of the number that lived less than one day, 94 per cent died of these causes."

The customary division of asphyxia neonatorum into *livida* and *pallida* is a convenient one, for from the appearance of the child we are enabled to determine, with more or less accuracy, whether we are dealing with a lesser or a more serious form of the condition. It should be borne in mind, however, that prognosis is always uncertain. In livida the cyanosed face and upper thorax, the strongly pulsating cord, the tonicity of the muscles and the presence of the reflexes are signs, as a rule, of a more or less ephemeral condition. But the "blue" variety may pass into the pale, anemic form, with immediate or near-future exitus. Even resuscitation in such instances does not insure the continuance of life, for a large percentage of these children perish within the first eight days, while from 20 to 30 per cent die within varying periods thereafter. Poppel estimates that the death rate of asphyxiated children within the first week of life is seven times that of those born normal.

The causes which lead to neonatal asphyxia are so numerous and obtain under such different circumstances that, for the purpose of this paper, it will be necessary to mention only the principal factors which enter into its etiology.

During labor the slowing of the fetal heart is indicative of a lessened gas exchange, either from intra-cardial or cerebral pressure, or restriction of the utero-placental area, possibly all three operating to cause increased venosity of the blood. But this is only temporary, and compensating conditions are probably present preventing permanent damage, the circulatory equilibrium being regained during the intervals of uterine contraction.

When, however, the labor from any cause is unduly prolonged, when a malposition is present requiring operative correction, when coiling of the cord narrows the lumen of the funic vessels, when the fetus is expelled unripe, and when the

* Read at the Annual Meeting of the Medical Society of the State of New York, April 29, 1914.

forceps are injudiciously employed, the circulatory balance is gradually lost, and asphyxia supervenes.

Among the most important and serious manifestations of neonatal asphyxia are those of cerebral pressure, which must be differentiated from those arising from asphyxia of a purely suffocative type. In the latter the symptoms are usually transitory and give rise to little or no injury to the nervous structures. When death results, autopsy reveals small or punctate hemorrhages into the meninges of the brain and cord, the nervous substance being rarely implicated. Under timely and proper treatment children survive this state even when it has progressed to the pathological degree just noted, and it is altogether probable, in instances of this kind, that the minute extravasations become absorbed without leaving trace of the preceding process.

The occurrence of cerebral pressure symptoms, on the other hand, as seen a *livida,* mark a more extensive and serious involvement of the brain structures. In most, if not all, of these cases the manifestations are the result of intracranial hemorrhage of considerable extent. In these children the face and body surface is extremely pale; there is absence of muscle tonus, the extremities are relaxed and external reflex excitability is wanting. The heart's action is extremely feeble and rapid, as a rule, but it is sometimes slowed, and respiration, once established, is irregular, spasmodic and shallow. The pupils are contracted, strabismus may be present, and hemiplegia and convulsions may develop.

In those children in whom the intracranial hemorrhage is slight at birth but gradually augments during the first hours or days of life, the infant may be born apparently healthy, and at first cry lustily. Later symptoms of cerebral pressure gradually appear, convulsions and paralyses occur, breathing becomes more and more difficult and shallow, and the child finally succumbs. In other instances death may occur suddenly and unexpectedly, without previous noticeable symptoms.

The following case is illustrative:

K. Male. Born at Detroit Woman's Hospital, January 8, 1913. Position, L. O. A. Spontaneous delivery. Weight of child, six pounds five ounces. Nothing unusual was noticed except a subnormal temperature, 98 to 97.8°. The child cried and continued in good condition, took the breast well, and voided urine and mechonium. On the afternoon of the tenth it was found dead in its crib. A diagnosis of cerebral hemorrhage was made. At the autopsy a large clot was found in the occipital region, the blood coming from the superior longitudinal sinus.

Alienists, and especially neurologists, following the publication of Little's paper in 1862, have laid especial stress on these hemorrhages as causative factors in the production of the cerebral paralyses of children. Mendal and Mitchel state that 4 per cent of asphyxiated children become idiots, from involvement of the frontal lobes (Peterson): Langdon-Downs raises this to 20 per cent; Voigt emphasizes the relationship between asphyxia and subsequent nervous affections, and other observers agree with Peterson that "conditions attending birth frequently lead to brain lesions in the child." From my own experience it appears that these statements are greatly exaggerated, for in a considerable number of individuals whom I have been able to follow from birth to young adult life, the case herewith reported is the only one that I have met with; while, in my own locality I can learn of but two others. If ninety out of every one hundred children are born more or less asphyxiated, it would be strange indeed if a certain percentage of the mentally blighted and nervously affected in later life did not give a history of this birth incident. In seventy-three cases which Burckhardt was able to follow during a period of years, only one (1.3 per cent) subsequently developed palsy of undoubted cerebral birth origin. The investigations of Walter Hannes in this connection are of particular interest in that they embrace a large number of cases and, for control, compare the subsequent histories of asphyxiated born children with those unaffected at birth. Hannes' material is divided into three series of one hundred and fifty cases each, with the following results:

First Series: Asphyxiated, resuscitated children. Subsequent abnormal nervous or mental development, in 3.2 per cent.

Second Series: Healthy, artificially delivered children. Subsequent abnormal nervous or mental development, in 3.3 per cent.

Third Series: Healthy, spontaneously delivered children. Subsequent abnormal nervous or mental development, in 3.4 per cent.

Similar conclusions were arrived at by Beatus in his recent inaugural dissertation from material from the Breslau Clinic during the years 1900 to 1913.

While not denying the influence of difficult and assisted labor in the production of these postnatal mental and nervous conditions, König has shown that diseases of the individual,—lues, alcoholism, heredity,—are really of greater importance.

From what has been stated, it is evident that while profound asphyxia neonatorum is a disorder of serious import, it is not often directly responsible for the cerebral paralyses of children, —chiefly, perhaps, for the reason that infants rarely survive the initial stage of the disorder.

My object in bringing before you a subject with which you are quite familiar is, not to rehearse what may be found in every text-book of midwifery, but to direct your attention to infant mortality from neonatal asphyxia and its associated conditions. The fetal death rate from this

cause alone is exceedingly large, and it is quite within the province of modern obstetrics to reduce, or attempt to reduce, this fatality. It is true that a certain percentage of infants will continue to be stillborn, or will die soon after birth, from conditions over which the obstetrician cannot possibly have control, but I am sure that these cases are in the minority, and that more careful supervision can and will reduce the mortality rate. We have only of late years become alive to the importance of continued attention to the pregnant woman during the entire period of gestation. Is it not time that we should also extend our efforts to the prenatal care of the infant? Societies exist for the prevention of infant mortality after the child has entered the world; stations are established in order that pure and wholesome milk may be furnished even to the poorest of our tenement dwellers, and infant welfare associations endeavor to ameliorate the morbidity of these helpless babes through improved hygienic and food conditions. Up to the present, however, too little attention has been given to the "rights of the unborn child," save in the attempted prevention of abortion. Our efforts for the child should begin with the advent of pregnancy, or as soon after as opportunity makes possible. Indeed, conditions rendering the nidation of the ovum doubtful or impossible, should be relieved anticipatory of impregnation. Lues, tuberculosis and other systemic taints should be systematically treated and the future mother put in as good physical condition as possible. Congenital debility in the child should be forestalled by improved housing for the poor and proper food, fresh air and water, in maintaining the well-being of the mother; personal cleanliness, hygiene and the importance of attention to the excretory functions must be taught and reiterated; the evil effects of too strenuous work and over-strenuous exercise must be explained and cautioned against, and even the accustomed daily round of pleasures must be regulated. These matters can be affected among the poor to a large extent as well as among the well-to-do and the rich.

In this connection I desire to call attention to the splendid work accomplished by the Committee for the Reduction of Infant Mortality of the New York Milk Committee,—the saving of 7.7 per cent of lives per 1,000 is a wonderful showing, indicative of what may be done by efficient effort. The Seventh Annual Report of this Committee is well worth perusal of every physician doing obstetric work.* Following this lead the Detroit Board of Health established a prenatal clinic in two divisions at the beginning of this year (1914). While we are still too young in the work to draw conclusions, the outlook is most encouraging.

* In connection with this pamphlet should also be read Publication No. 4 of the Childrens Bureau of the U. S. Department of Labor, entitled "Prenatal Care."

A healthy child in a healthy mother should be the slogan of every one who practices obstetrics.

To accomplish this desired result, however, it is essential that the obstetrician should know his patient and not subject her to the trial of labor before assistance, often too late in the interest of the child, is rendered. The time to act is before the baby is born, as well as after the effects of preceding conditions have become manifested. The state of the pelvic floor and parturient canal should be determined long before the estimated date of confinement, and a familiarity with the size and shape of the bony pelvis is still more important. In every-day obstetric practice pelvimetry is too infrequently resorted to; it should be the rule in every case. Only in this way can we be forewarned of possible future trouble, and be put in a way of anticipating disaster so that weeks or months before the advent of labor, we may deliberately select that method of delivery which will prove best adapted to the safety of both mother and child. A woman whom I delivered in her sixth pregnancy of a healthy living eight pound boy by the abdominal route, might have been spared the deaths of her five preceding children had her former physicians possessed a better knowledge of her anatomy. In elderly primiparæ and in women whose vaginas have a reduced distensibility from natural conditions or disease, Cesarean section offers, in my opinion, the best chances for the child, while it is not more serious for the mother than a prolonged and tedious labor terminated by high forceps. With increasing experience, I am inclined to think that placenta previa and in suitable cases eclampsia will be placed in the same category. Certainly in the latter disorder the child's life would be less jeopardized, in some instances, than when colpohysterectomy with version or forceps delivery is carried out. I am more and more convinced that pregnancy should not be allowed to continue much, if any, beyond its estimated date of termination,—while in mildly contracted pelves labor should be started from two to three weeks before that date,—in the interest of the child.

As protracted delivery is a fruitful promoter of asphyxia in the neonatus, the integrity of the membranes must be preserved until their purpose is accomplished, so-called "dry labor" averted, and the child forefended from unduly long-continued pressure. We are told that in normal child-birth there must be no disparity between the passenger and the passage, and yet few children would probably be born alive were it not for Nature's conservative measure, cephalic moulding. To prevent excess of this important process, especially when the head is driven repeatedly against too stiff, unyielding tissues, I believe that the rubber bag dilator should be more frequently employed.

Under normal conditions this imbrication of the cranial bones is harmless, and by lessening certain diameters of the fetal head, permits of smooth passage through the bony pelvis. Excessive over-lapping of the bones, however, as seen in protracted labors and misuse of the forceps, is a frequent cause of intracranial hemorrhage and asphyxia, an argument against prolonged labor and for the early proper use of the forceps and against unscientific forceps operations. In spite of the teachings of a hundred years, the average physician still appears to believe that the forceps were invented for dragging the child through the parturient canal whenever Nature fails in her expulsive forces or obstacles are present which uterine contractions are inefficient to overcome. And he is too apt to forget the really tremendous pressure which the forceps wrongly used may exert upon the fetal head, and that squeezed between its blades there is great impairment of the cerebral circulation. To avoid undue continuous pressure and permit of the readjustment of the circulation in brain and meninges, traction should not be too long continued, the forceps blades should always be unlocked between pulls, and a sufficient interval allowed for circulatory re-establishment. In all forceps operations the motto *arte non vi* should be remembered.

Twenty-six years ago I read a paper before the Detroit Academy of Medicine on "Shall the forceps be applied to the after-coming head?" Schroeder and his followers at that time strongly denounced this procedure, declaring that heads which could not be delivered by manual methods should be perforated. I was then inclined to accept the dictum of this great teacher, but I have learned better since, and believe as Crede taught, that the forceps are good servants when properly employed in such cases, and are valuable preventives of those accidents which lead to fetal asphyxia and death. The position of the cord is also given too little consideration. A prolapsed cord, if sufficiently evident, is looked upon as a serious menace to the child and attempts are made at reposition. But who ever argues regarding a short cord? As a pathological entity this is rare, but the results will be the same when the shortening is due to coiling of the funis about the child. In 2,154 infants delivered at the Woman's Hospital (Detroit) this displacement was noted in 328 cases (15 per cent), not a negligible number.

In 868 cases of asphyxia studied by Wicke, the condition was found due to misplaced cord in from 10.7 to 33 per cent. Retarded labor in the presence of good pains and a normal unobstructed passage with dilatable soft parts is usually the result of this condition. Aside from tension on the cord itself, the drag upon the placenta and possible premature separation of that organ must be borne in mind. In all cases the fetal heart rate should be carefully watched during the whole of labor, and when danger threatens, timely application of the forceps made and prompt delivery effected.

In speaking of rapid delivery, let me here record my opinion that, as regards the ordinary maternal lacerations, these should not be considered whenever the life of the child is threatened. Everything should be done to spare the patient immediate and future suffering, but nine months of pregnancy is a long period of discomfort to endure with nothing to show at the end but a dead infant. The immediate aseptic repair of cervical lacerations of moment and perineal tears give good results and are worth the doing if a live and lusty child is the alternative.

Following birth, in the profound as well as in the milder cases of asphyxia, the gentler methods of resuscitation, as the Ahlfeld bath, Sylvester's, Laborde's and Bird's methods, appear all that is necessary and, persisted in, usually give satisfactory results when such can be expected. In intracranial hemorrhage such rough procedure as the swinging of Schultze should be avoided, since nothing can be thereby accomplish except, perhaps, to increase the hemorrhage.

The use of the pulmotor in the treatment of asphyxia neonatorum is too recent to warrant positive conclusions regarding its efficiency. In intracranial hemorrhage it seems to me it would be of doubtful service. Zahnmeister has pointed out three reasons for the failure of oxygen administration in asphyxia, which appear reasonable in this connection, namely, the possibility of too small contact surface in the lungs, too few oxygen carriers in the blood, and a reduced transportation of oxygen to the tissues on account of the lessened circulation. With a more general and better familiarity with the symptoms and diagnosis of intracranial hemorrhage in the newborn, I believe that the treatment of the future in these desperate cases will lie largely in surgery, and that through its scientific application many children will be rescued to lives of future usefulness that are now considered beyond hope.

"In motherhood, properly instructed and respected," as has been so well said by Mr. Alderman Broadbent, "there lies a potentiality of health and well-being for future generations beyond the dreams of the most enthusiastic sanitarian." And, it may be added, in better obstetrics lies, to a large extent, the prevention of neonatal mortality.

INTRACRANIAL HEMORRHAGE IN THE NEWBORN.

Case I.

Mrs. H. A., aged 24, Ipara, a highly nervous young woman, with good family history—no miscarriages nor syphilis—was referred to me for confinement by Dr. H. M. Rich. She passed through a normal pregnancy, and fell in labor on the evening of March 28th. The

child was active, the heart tones good, and the breech presented in the left anterior position. The mother's pelvic measurments were:

Cristæ	27 c.m.
Spinæ	22 c.m.
Trochanters	31 c.m.
External conjugate	18 c.m.

The vaginal canal was unusually tight, and the introitus very small and rigid.

Labor pains were excellent, but progress was slow on account of the presentation and the rigidity of the parts. The breech descended into the cavity, there stuck and became impacted. Assistance was attempted, but the pelvic space was so absolutely filled it was only after repeated trials that a blunt hook could be carried over the thigh and the breech brought down. Both legs were extended over the abdomen, and in delivering the left femur was fractured in its upper third. The arms were liberated with great difficulty.

The prolonged labor and efforts at delivery had apparently caused death of the child: the cord tightly wrapped around the neck once was absolutely pulseless and flaccid, and the child's body was relaxed and of pale yellowish color.

Believing that the fetus was dead beyond recovery, and having been requested by the parents to baptise the child in the event of its not surviving, pause was made at this stage of delivery, the nurse sent for a tumbler of water and the rite performed. This procedure must have consumed at least five minutes.

Manual methods having failed the forceps were applied to the after-coming head and delivery effected.

The child's body was allowed to rest across my knees for a few minutes. The cord was then ligated, and extremely faint pulsations felt. These increased during the succeeding few minutes, but remained very feeble. Resuscitation was at once started, by Sylvester's and Laborde's methods, together with vigorous slapping and suspension of the child by the feet. After about twenty minutes the infant gasped, moaned and finally gave a feeble cry.

The following observations on the infant are taken from the very excellent notes made by the nurse, supplemented by my own and those of Dr. Rich.

A male child, weighing seven pounds, born at 6 A. M., March 29th. In the early part of the day the child remained motionless, but at intervals emitted a feeble moan or whimper. At 4 P. M., assisted by Dr. Rich, I put the fractured femur in splints. During the afternoon the child "had spasms of raising and shaking the arms," with frequent stiffening of the body lasting a few seconds. These convulsions occurred especially whenever the child was touched or moved. They were partially controlled by small doses of a sodium bromide solution by mouth.

March 30. The condition remains practically the same.

March 31. Took the breast nicely at 12 o'clock noon, but not as well at 4 and 8 P. M. Cried feebly a good deal during the evening and night.

April 1. Took a little water at 7 A. M. Was somnolent during day and could not be roused. Urinated three times; slight brickdust stain on napkin at 9 P. M. which increased during night. Small doses of Spirits Ether Nitrosi given. Two stools during day. Took about half an ounce of milk from bottle at 10 P. M. Did not rouse all night.

April 2. Still unable to rouse. Took a few drops of milk. Saline enema, one ounce, given at 11 A. M. Retained. Right eye swollen.

April 3. Chene Stokes' respiration. This improved during the day, but became more marked at night. Takes nourishment, one ounce, every two hours.

April 4. Seems weaker. Circulation poor at times. Moans.

April 5. Very little change. Stools still dark; urine almost normal. Chene Stokes' respiration greater part of the time.

April 6. Takes nourishment well, one ounce every two hours. Color clearing up.

April 7. No attempt as yet to open eyes. Circulation poor at times.

April 8. Same condition. Respirations faint and irregular. The fontanelles, especially the anterior, are increasing in size and the sutures are spreading a little. Dr. Rich, who has seen the child several times, suggested lumbar puncture, which he carried out in the afternoon. Respirations eight per minute. Six c.c. of bloody serum withdrawn. Immediate improvement in breathing followed, the respirations becoming more regular and deeper.

During the first few days following the lumbar puncture, the fontanelle several times became very tense, and there was a certain amount of rigidity in the child's limbs, the hands especially being clenched tight. This would disappear, however, in a few hours; the lumbar puncture was not repeated.

April 9. Circulation better, yawns and stretches some. No twitching except in eyelids. Splints removed from leg; moderate callous; leg same length as other, by measurement. The hydrocephalous is checked; no furthur increase in size of head.

April 10. Drew on breast a few times to-day. Takes nourishment better.

April 11. Yawns and stretches a great deal.

April 12-13. Slight general improvement.

April 14-15. More active. Nurses better. Opened eyes half way for about a second (15th). Weighs six and a half pounds.

April 16-21. Gradual improvement; better color; nurses better; stools slightly better color.

April 22. Opened eyes for a short time. Tremor in hands at times.

April 24. Gave one sharp cry this A. M.

It was early noticed that the child did not see, and Dr. Walter R. Parker was called in to examine the eyes, and kindly furnished the following findings:

O. D. External appearance of the eye is normal, muscular excursion good. Pupil partially dilated, direct reflex absent except for very strong light; consenual reflex present, but very nearly abolished. Unable to determine accommodation reflex. Media clear, head of the nerve white, slight amount of excessive connective tissue about the blood vessels about the head of the nerve, edges well defined, physiological cup nearly absent, slight contraction of the arteries, fundus otherwise normal. O. S. same as right. Diagnosis: Optic atrophy, possibly consecutive to neuritis.

About two months later, at the age of four months, the child began to have severe convulsions at intervals of a few weeks with many lesser ones, so that scarcely a day went by for two years without at least a slight convulsion. Opisthotonos was extreme at these times, and the child often lay for days with the head and heels not more than twelve inches apart. This condition existed with more or less exacerbation for three years. During the last year, convulsions were infrequent. The fists were always tightly clenched, the legs, arms and back muscles spastic. The child could hold up its head for a few seconds, but never sat up nor tried to do so, and it had no use whatever of arms or legs. Intelligence was very limited. There was no evidence of sight, and no attempt at speech, although the hearing was apparently good. Middle ear infection with perforation of drum and discharge of pus occurred on two occasions but properly healed. This had no evident connection with the paralysis.

The nutrition in general was good, and the child grew to normal body length. Neither X-ray or Wassermann were made.

Death occurred suddenly, and without warning, at the age of four years and eleven months. The child was not thought to be ill and was put to sleep as usual at night. Two hours later, when the nurse-maid went in, she found him dead. There was no evidence of convulsion or struggle; maids in the next room had heard no noise. No autopsy.

Case II.

(Record furnished by Dr. Herbert M. Rich.)

M. S., age 27 months old, was brought to the Pediatric Service, Out-Patient Department of Harper Hospital, for convulsions, helplessness and constipation. Parents living, well, and family history good. The patient is the seventh of eight children, all living and well except the first which was born at seven months and died soon after.

The mother states that during the labor she was seized with sudden pain while walking; she hurried to the bed, losing her balance, sat down on the child's head, which was pressed against the handwood sideboard. Later the baby's head appeared slightly flattened. The birth was otherwise normal. The child's eyes were swollen and closed, but there was no discharge, and the former disappeared within a few days. It was soon after noticed that the child's arms and legs were stiff, and at six weeks convulsions began. Opisthotonos was always present at these times. The convulsions have continued on an average of once a day until recently, when they have been reduced to one a week. The child eats and sleeps well, and there has been no intercurrent disease.

S. P. The child is somewhat undersize, with large head and white skin. Eyes do not react to light, and nystagmus is present. Anterior fontanelle still open and about the size of a silver half dollar; the posterior fontanelle is about the size of a dime. Rickety, rosary chest; otherwise normal. The fists are tightly clenched; knees reflexes increased. The child appears totally unintelligent, and lies stupidly unless hungry or in pain, when it cries like a small baby. There is no evidence of reaction to light or sound, and no effort is made to speak, the child evidently being deaf, dumb and blind. Laboratory examination showed a negative Wassermann for both mother and child. The X-ray did not show the characteristic changes found in hydrocephalous.

By lumbar puncture clear fluid under increased pressure was obtained. The characteristics of tubercular meningitis were not present in the fluid.

The child is still under observation.

Case III.

(Record furnished by Dr. Edwin B. Forbes.)

Mrs. W., confined May 5, 1905. During the early months of gestation slight nausea and vomiting; the ninth month was marked by severe pruritus vulvæ, which kept the patient in bed the greater part of the time. History of pregnancy and family history otherwise good. In the latter part of the second stage no progress was made on account of the large fetal head. Forceps were applied, and after an hour's excessive effort a male child weighing ten pounds was delivered. The child was deeply asphyxiated and was with difficulty resuscitated. There was marked overlapping of the parietal bones, but otherwise no external evidence of injury. For the first week of life the infant throve and exhibited no ill results from the severe labor, but during the second week the nurse noticed that the left arm was paralyzed, and convulsions of short duration developed. These increased in number so that in the course of a few weeks there were several spasms daily. At one month it was apparent that the infant could not see. The child took its food well and was fairly nourished. Idiocy was evident, the condition of spastic paralysis continued, and it remained helpless during the rest of life. The infant died during the fourth year.

STERILITY IN WOMEN.*

By WILLIS E. FORD, M.D.,
UTICA, N. Y.

THE problem of the sterility of women is one that has not yet been solved by science. It is one of the oldest questions of a medical nature that has invited serious thought. Statistics show that one marriage out of every eight, among people who are apparently in good condition, fails of offspring. Just why these failures take place is accounted for by men with varying theories, and statistics seem to be of little value. From the nature of the case, statistics collected by men dealing with hospital patients, or with people who are in a social position that makes child-bearing a burden, and of a moral status that makes it probable that immoral and illegitimate means are employed for the prevention of conception, differ very much from those of men who see another class of people from the better walks of life, who desire children more than anything else in life, and yet who are unable to realize this desire.

There are a few cases of young women, who are apparently healthy and never had any serious illness, excepting menstrual pain, and generally a troublesome leucorrhea, usually with an undeveloped neck of the uterus (what used to be called an infantile cervix with small canal) and these women are very liable to develop serious uterine disorders later in life. Sterility is one of these conditions, and I believe that many of the catarrhal disorders of the tubes, requiring serious pelvic operations later, are also developed without any other cause. It is of these few cases taken before any lesion of serious magnitude has been found, that I wish to speak.

The younger men in our profession may not be consulted very much by people who earnestly desire children, and who feel shame in speaking of it. The age and social standing of the physician very materially changes his views regarding this question, because of the greater number of people consulting him who are anxious to bear children; while with the younger men the case is quite different, in that he may see more persons who desire to prevent legitimate pregnancy. I think that the statistics on this subject, therefore, are practically worthless, but I am convinced that men who have a good social standing, and recognized professional ability, see more cases of those who desire pregnancy than are thought to exist in a respectable community. The natural desire for offspring remains, and there are the same number of decent people who want to live wholesome lives, and yet who do not like to talk about it. If we say

* Read at the Annual Meeting of the Medical Society of the State of New York, April 28, 1914.

that statistics show that one marriage out of every eight, in which both parties are supposed to be in normal condition, fails of offspring, we cannot draw a general conclusion from this fact that is at all trustworthy.

In the early stages of scientific gynecology the attention of the profession was largely towards conditions of the cervical canal, flexions, versions, and stenoses, that suggested operations upon the cervix and uterus, such as dilatations, divulsions, and the slitting of the lip of the uterus, in the attempt to straighten the cervical canal. It was found, however, that the scar tissue which was left after various surgical procedures about the cervix, often contracted, and was generally inelastic, and sometimes proved as much of an obstruction as the original deformity or disease, and the dysmenorrhea continued, or the sterility persisted. It was later the fashion to dilate and curette the uterus and pack it, on the theory of keeping open the neck long enough to allow the exudate into the muscle that was divulsed at the region of the internal os, to stiffen and become premanently fixed in a nearly straight line, by the exudate which occurs from slight inflammatory processes caused by operations. It is quite probable that curettage was often done with such vigor that the endometrium was injured, and sterility actually produced.

It is within the observation of most men that a small contracted uterus with an unhealthy endometrium, follows a severe curetting —even though there was no evidence of septic infection at the time. Stem pessaries of various sorts were used to keep the uterine canal open, under the belief that after they were removed the canal would be patulous enough to permit pregnancy. But I have often wondered whether continuous pressure in the cervical canal would not produce those pathologic changes in the glandular mechanism against which they rest, sufficient to prevent the physiologic function of the organ. The theory of the cervical plug, because of the diseased condition of the so-called membrane lining the cervical canal, has been urged as acting like a stopper of a bottle, to mechanically prevent conception. I have not been able by any treatment that I have tried to convince myself that the cervical canal, especially if it was somewhat stenosed and small, could be made sufficiently normal so that this so-called mucous plug would not recur.

Under proper antiseptic precautions almost any kind of a surgical procedure can be carried out upon the neck or body of the uterus, without material danger to the patient; so that the experiments that have been tried are very numerous. When pelvic surgery by the abdominal route became so safe that one may almost say it became the fashion, great hope was entertained that the treatment of the tubes and ovaries in a so-called conservative way, would relieve many of these cases of dysmenorrheal sterility, independent of slightly abnormal positions and conditions of the uterus. One thing at least has been proved, that pregnancy occurs sometimes after such radical procedures about the adnexa as would seem to render pregnancy impossible. While these cases are rare, the number of cases that afterwards were found to conceive, on account of the conservative treatment of the tubes and ovaries, and the removal of adhesions, etc., has been disappointingly small. Advocates, however, of these radical measures point out the fact, that very small cervices, almost infantile, with a very small canal, have been found to be capable of conception. May it not be said, however, that the natural physiologic changes that may occur in these organs—even when the organs themselves are practically normal—may cause such tumescence of tissue as to act at times as a bar to pregnancy, and yet escape the observation of the gynecologist. I have no new theory to present in this short clinical paper, but desire to relate my personal experience in this matter, and to state how my attitude toward this condition has changed within the past few years.

When I heard Pozzi* read his paper five years ago it struck me that he advocated correct surgical procedure, and the permanency of the results which he claimed, commended it strongly to my mind. Throwing out, therefore, all those cases of former infections, or the possibility of irregularities of living, or lesions about the uterus and adnexa, otherwise than what was found by vaginal examination as depending upon the lower segment of the uterine canal, I began the operation in a limited number of cases, and have now a small number of cases, thirty-five, to report, with conclusions that seem to me worth while to present. It probably is unfair to compare these statistics with all the other cases where procedures were necessary on account of distinct lesions, or even where gross displacements have existed, which were relieved by other means, and they are not counted in this list.

One of the first cases was that of a woman happily married seven years, and who, soon after operation became pregnant,. but has not conceived a second time.

The next case was that of a friend of mine, who also had been happily married some six years, for which she had been treated without any serious operative procedures beyond dilatation, douches, etc. It was two years after I operated her before she conceived. She had

* "Surgical Treatment of a Most Frequent Cause of Dysmenorrhea and Sterility in Women." Read before the Am. Gyn. Soc. by Prof. S. Pozzi, of Paris, France, in 1909.

a small conical shaped cervix. She miscarried at the seventh month, and the accident was said to be due to hanging pictures, etc., during house moving.

One of the early cases, with a child now four years old, has miscarried twice since, at early periods, from what causes I could not ascertain. She had been married seven years before operation.

Other reported cases of miscarriage called my attention to this danger, and I have not made the lateral incisions so deep as I did at first. Instead I have incised anteriorly any cicatricial ring found at the internal os, instead of cutting nearly to the internal os, and have packed the entire canal a little more firmly.

Three or four more pregnancies occured, and then about a dozen were operated that have not yet reported pregnancy. All these cases without exception reported such improvement in function and in general health, that since then I have operated unmarried women in the same way. In these cases dysmenorrhea had persisted with interference in general health from this cause, and especially marked neurasthenic conditions were present.

At first I had no theory as to the reason why the general improvement in health, the loss of nervous symptoms, and the disappearance of local pain and leucorrhea, brought about such uniform results. I have come to think, however, that free drainage and the lessened tendency to permanent congestion is due to the fact, that after this the cervical canal is at all times open enough so that temporary swelling of the glandular structures, due either to the influences accompanying menstruation, or to the influence accompanying certain sexual impulses, which may or not be appreciated as such by the patient, is the reason for this improvement.

There is no question about the functional tumescence of glandular tissue, nor of the fact that it at times persists where the influences, either sexual or menstrual are irregular; and that with the subsidence of this tumescence there is glandular secretion, and that this secretion may be perverted by long continued tumescence, or by irregular and abnormally frequent impulses of this sort.

My examination of the cases months, and even a year after the operation, has shown that this procedure does permanently keep patulous the cervical canal; and that in most cases there is a normal secretion, and a normal appearance of the lips. There must have been some reason why a normally constructed uterus should have a fair sized cervix, and a quarter-inch canal, and a virginal cleft, making two lips to the vaginal portion. These cases of dysmenorrhea with perverted secretions, and sometimes with sterility, due to a small conical neck, with a round pin-hole opening, can be converted into a normal looking vaginal cervix by Pozzi's operation, and I believe that the true function of the uterus is in these cases restored in many instances.

As to the operation, it must be confessed that it is sometimes difficult to do, and requires more time than the average cervical operation requires. In my opinion the entire point of procedure is to cover any raw surfaces with mucous membrane, so that no scar tissue will follow. In making the slit on either side of the canal the important thing is to have it so that the anterior lip is as nearly as possible the same size as the posterior lip. The removal of a bit of muscle, or even of exudate tissue of each raw surface, so as to give room to bring the membrane over and cover in the spaces, is sometimes difficult to do. Pozzi uses a knife. I have found that very sharp pointed scissors are better. The catgut used is chromicised and very small. If much tension is put upon the stitches they tear out too soon, and it is usually necessary that a small sharply curved needle be used, to catch up a bit of muscle at the edge of the open cervical canal, in order to make the stitches hold.

To begin with the dilatation which precedes, need not be very extensive, because this operation is not of much use in septic cases; and it is presupposed that no sharp curette need be used; and if there is a cicatrical band at the internal os, it is incised forward to the anterior lip, and a very little iodoform tape is necessary to hold it open, while the two newly formed lips of the cervix are held apart, and surrounded by small straps of iodoform gauze. It is better to have the patient remain in bed three or four days after the operation, before leaving the hospital. Douches of boric acid used in the vagina daily for a weak or ten days is necessary.

Formerly I was accustomed to use galvanism for a considerable period in these cases, to develop the uterus, after slitting the posterior neck and divulsion; and I have the history of many cases in which pregnancy followed, even after the lapse of a number of years of sterility. This treatment had to be carried on, however, for several months, and the results were good for a time; but I do not think they compared with the shorter and more simple procedure avocated by Pozzi, especially with respect to the permanency of results.

I have been at work long enough to follow the history of many young girls for ten years or more, and up to the time of their marriage, and even afterwards; and I am convinced that if early and complete drainage was secured through the uterus by this simple procedure in these few cases of cervical deformity, many of the serious conditions met with later in life could have been prevented and sterility may have been avoided in many instances.

OBSTETRICAL TECHNIQUE.*

By R. L. ELLITHORP, M.D.,
GLOVERSVILLE, N. Y.

I fully understand that the above caption opens a field deep enough and broad enough to fill a volume, and as I also understand our time is limited, I shall only endeavor to pick up a few threads of thought pertaining to this most interesting and important theme, especially as it relates to our work in the home of our lying-in patients. We are all more or less familiar with the technical management of a case of labor in a well-appointed delivery-room with which every modern hospital is equipped, to-day, with the assistance of several specially trained nurses at hand, but how about our management of these cases in the natural habitation where, perhaps, eighty to ninety per cent of this work has to be carried out. Any text-book will advise what to do and how to do it under ideal surroundings; but where can you find any special advice pertaining to what should be done in the sleeping quarters of the woman in labor, with the grandmother assisting.

To me, there seems to be, here, a wonderful field for contemplation, investigation, and scientific effort. Here, we meet life at its very fountain-head, on the one hand, and in the very thickest of the fight, with the enemy (bacterial conditions), on the other. Again, in no branch of medicine is the moral sense and responsibility of the physician appealed to more, than in the directing and care of the pregnant woman, and her subsequent delivery. Our medical schools are turning out hundreds of graduates yearly, few of whom have had any practical training in the obstetrical art. They may have witnessed a few deliveries in the modern delivery-room, already referred to, but few, if any, have had the actual management and care of a case through the pregnancy and the puerperal state. We are all familiar with the physician, with his few months of practice, who has graduated from some lying-in hospital, and is now ready to meet any and all contingencies. We fully recognize the value of hospital training and its relations to future success, yet, from its very nature, it can only train in hospital methods, and these are so widely separated from those of the physician in actual practice that there can be little, if any, comparison between them. He may be theoretically perfect; but he must have the actual experience in practice before he can be qualified to handle these cases properly. It is to be regretted that our institutions of medical training have so long overlooked this matter or been so negligent in the obstetrical training as it pertains particularly to private practice. It is true that every college teaches the theory of how to perform podalic or cephalic version, the theory and treatment of post-partum hemorrhage, and how to apply forceps before the head has entered the pelvic brim, but he gets no training of a nature which will enable him to meet adverse and discouraging conditions and to build up under such conditions a technique which will enable him to proceed intelligently and scientifically. I have always maintained that the obstetrician should have fully as careful and special training as the abdominal surgoen or the physician in any other branch of medicine.

Cooke says, "Familiarity breeds contempt, and normal deliveries are so common that many make more elaborate preparations for the removal of a sebacious cyst than for the management of an ordinary obstetrical case. Better let the cyst break down and slough away than subject one woman to even a mild puerperal infection that will transform her from a strong, healthy being to a confirmed invalid, a burden to herself, her husband and her family." Asepsis and antisepsis, as in other fields of surgical procedure, is the watch-word. Success, we have observed, holds no relation to the paraphernalia. The most elaborately equipped obstetrical bag and profusely gowned and rubber-gloved obstetrician will suffice little unless provision is also made for keeping the parturant canal and its adjacent parts surgically clean from beginning to end. The time will not permit me to go into detail upon the particular management of each of the three stages of labor. I will only refer to a few essential points.

Upon arriving at the home, the physician may quiet the patient with a few words of cheerful encouragement after which he shall retire to an adjoining room to prepare for the initial vaginal examination. The nurse, or attendant, should at once prepare the patient and the lying-in bed, if she has not already done so. Now, here often comes the first hitch in many cases? You have practically nothing at hand, but every home has, at least laundry soap, a means of rendering water sterile by heat and you have your bichloride, lysol and boric acid as anti-septics. I always carry a bottle of liquid anti-septic soap. The vagina, vulva, and adjacent parts should be thoroughly lathered and scrubbed, followed by bicloride solution. If two or three laundried sheets are at hand this will help materially, if not, a towel wrung out of bichloride solution, one to one thousand, and placed under the patient and another falling over the vulva will place her in a fairly decent position for the initial examination. I have been carrying in my obstetrical outfit, for some time, a fiber sheet which is absolutely sterile and which I have found a great source of comfort many times. Catheter, and scissors for cutting the cord should be put to boil. The physician then rolls up his sleeves as highly as possible, puts on rubber apron, then muslin gown, and proceeds to disinfect his hands. As much care must be given to the sides of the fingers as to the palmar and dorsal surfaces. Having completed the disinfection of his hands (preferably covered by sterile rubber gloves) he must not, of course, allow them to come into contact with any unsterile object, such as a chair, the bedclothing, etc.

* Read at the Annual Meeting of the Fourth District Branch of the Medical Society of the State of New York, at Fort Edward, October 14, 1913.

I do not believe in the use of vaseline or other lubricants. I have always found the wet hand sufficient. The vulva should be separated with the fingers of the left hand, and the sterile right fore-finger, by the sense of sight, is passed as nearly as possible through the center of the opening of the hymen. In this way only can the transference of septic material into the vagina be avoided. Never examine under the bed-clothing or the patient's garments. Great care should be exercised to avoid the accidental rupture of the amniotic sac. The obstetrician should learn the condition of the vagina, pelvis, and cervix, and make out the position and presentation of the fœtus. The nurse should be directed to make three or four quarts of bichloride solution, should also have handy, two dozen pledgets of absorbent cotton and plenty of sterile water. The Kelly-pad, I am frank to say, I do not favor. It cannot be properly sterilized, and my experience has been, in nine cases out of ten, it is practically useless as a means of catching the discharges. It almost invariably overflows, hence is useless for this purpose, and altogether a nuisance if you endeavor to use it in an ordinary bed. I greatly prefer a sheet folded or pinned lightly about the waist. I almost invariably have the sheet and vulva saturated with bichloride, or lysol solution, before the end of labor, and I am particularly cautious about keeping, especially my right hand, sterile. The physician should never think of assisting the lying-in patient by pulling with his hands on hers. Some other person may do this if it seems necessary for the physic effect, but much better a sheet or a specially made pulling-apparatus fastened to the foot of the bed. When the pains come frequently, and you have a neurotic temperament to deal with, fifteen or twenty grains of bromide of soda may help you out some. The tact of the physician, and occasionally an assurance that things are progressing nicely helps more. When labor is progressing vigorously the physician should keep himself well-informed as to the descent of the presenting parts, by means of repeated, careful abdominal palpation, supplemented with one or more vaginal examinations according to the requirements of the case. These vaginal examinations should not be made oftener than is necessary and it is needless to say that they must be performed with all the aseptic precautions that were observed in the first instance. It has been, and is yet, thought that vaginal examinations and manual manipulations are to be almost wholly avoided. It is the dictum of some that it is better to guess at conditions, for that is what merely external examination usually amounts to, than run the risk of infection from without, even after the same elaborate precautions that are presumed to justify the surgeon to enter with his hand the abdominal or pelvic cavity. In rigid os, we resort to digital dilatation, in many cases. It will speed up most cases of labor. I have yet to regret such manipulation in any case.

The oxytocic value of pituitary extract it seems is well established, if used intelligently in secondary inertia. It should not be given during the first stage.

Fischer, of the University of Wurtzberg, says, "I have never noticed any unfavorable after-effects upon mother or child." Bondy, of the University of Breslau, arrives at the same conclusion.

Before the presenting part has descended far enough in the pelvis to render catheterization difficult, the bladder must be emptied. Neglect of this will result invariably in prolonging the second stage. Too much care cannot be shown in the management of the perineum and often a slight change in posture will be the means of saving it from rupture.

At the perineal stage, cleanse the vulva and adjacent parts often with bichloride sponge, wiping away blood and mucus. If, during pains, small masses of fecal matter are expelled from the rectum they should be carefully removed with bichloride pledgets. Great pains must be taken to prevent any fecal matter coming in contact with the fingers. It is always safer to have the cleansing done by the nurse. If you have none, you must do it, yourself, rather than assume the attitude that you would not lower yourself to the duties of a nurse at the expense of your patient. If the bichloride towel referred to previously becomes soiled it must be covered at once with a fresh one out of bichloride. As soon as the child is delivered the nurse assumes charge of the fundus, but when the cord is cut the physician relieves the nurse by taking charge of it. Ergot may be given or not according to the custom of the physician, and the indication, but never before delivery.

With the left hand upon, and about the fundus, the placenta is expressed, which is carefully inspected to see that it is intact, that none may be left behind. When an hour (the so-called physician's hour) has elapsed since the delivery of the placenta the physician may leave the home. Temperature and pulse are noted, the room is darkened and the infant removed to another part of the house so that, if possible, the patient may fall asleep. I leave ergot and heroin or codine with instructions for use in the event of hemorrhage or severe pains. As regards anesthesia during labor I can only say that I use as little as is reasonably possible. Obstetrical anesthesia differs from surgical anesthesia in that it is intended to diminish and not to abolish pain. I believe, except in moderate doses, and during the most active period, it should not be used. The American text-book says, "the careless and long continued use of these agents is frought with serious danger to patient and child." Donhoff administered chloroform in various degrees to five parturiants studying the effect with the aid of an instrument especially adapted for this purpose, and even under small doses labor was retarded. Lusk arrives at the same conclusion.

The foregoing facts do not forbid the employment of obstetrical anesthesia but calls for the exercise of caution in its use. The selection

of the lying-in room as to light and ventilation should also be carefully looked after. I have not touched upon many vitally essential points, but with the help of several authors, and with a small amount of personal experience, I have given you a random sort of paper of fifteen or twenty minutes duration.

Gentlemen, I thank you. I know that this is a dry subject, but, nevertheless, requiring as careful consideration as any other branch of the medical art. If I have called your attention to one thought which may be of benefit to you or the prospective mother I feel that my time has been well spent.

THE DETERMINATION OF SURGICAL CONDITIONS OF THE STOMACH IN CHRONIC CASES.*

By WALTER A. BASTEDO, M.D.,
and
LEON THEODORE LeWALD, M.D.,
NEW YORK CITY.

THE chronic cases which suggest a possible need of stomach surgery may be conveniently divided into those with signs of obstruction at cardia, pylorus, or in the body of the stomach, and those without signs of obstruction.

In their estimation it is not our intention to enter into a critical review of all the possible methods in diagnosis or to make a report of unusual cases, but rather to bring forward and place a value upon certain easily made clinical tests which will help the general practitioner to decide when there is or is not a need for surgical intervention:

1. If there is a dysphagia, and the obstruction is at or near the cardia, as shown by the stomach tube or esophageal bougie, there is a condition of cardiospasm with esophageal dilatation, of diverticulum, of connective tissue stricture, or of cancer either of the esophagus or of the lesser curvature of the stomach involving the cardia. As such cases, however, are in most instances not surgical, and as they are rare in the practice of anyone but the specialist, we would merely call attention to the great value of a Roentgen-ray examination in their differential diagnosis.

2. In stomach cases a very common history is that of attacks of indigestion, recurring at intervals for years, each attack lasting from one week to three months. The attacks manifest themselves by a peculiar gnawing or empty or gone sensation in the stomach, with a general feeling of lassitude and sometimes nausea, occurring some three or four hours after meals, night or day, and relieved by sodium bicarbonate or a glass of milk, or even a glass of soda water, and usually made worse by buttermilk. As a rule these patients have been extensive users of sodium bicarbonate, rhubarb and soda, soda mints, etc.

FIG. 21.—Photograph of the *Hair-ball* after removal from the stomach. Note how a perfect cast of the stomach has been produced. The hairs are long ones and have been molded in conformity with the shape of the stomach as we have learned to know it from Roentgen exam. in contrast with the older anatomical diagrams. Note the prolongation of the hair mold as it passed through the pylorus and down as far as the second portion of the duodenum.

These cases are frequently treated for nervous dyspepsia, and their history may date back a great many years. But such a history points to an ulcer, the site of which is generally the first portion of the duodenum, though it may be prepyloric. If there is no obstruction to the emptying of the stomach, such an ulcer does not ordinarily call for surgical treatment.

But if, with the above history of recurrences, and the so-called "empty pain" and its relief by alkalies or food, there is in addition a story of much flatulence, if there has been repeated vomiting of sour food, if there is an obvious state of poor nutrition, and especially if there has been frequent resort to lavage for relief from stomach distress, the history points to obstruction in the neighborhood of the pylorus. This is a surgical condition and must be tested for.

With the symptoms of stagnation outlined above, the tests of most value are the test dinner and artificial dilatation. A simple test dinner that we frequently employ consists of one lamb chop, one baked potato, one helping of corn or peas, one slice of bread and butter, and a dish of stewed prunes. For the dilatation of the stomach we regularly employ half a teaspoonful of tartaric acid and a teaspoonful of sodium bicarbonate, each dissolved in half a glass of water. The tartaric is given first and is followed by half the bicarbonate solution. If there is not a good distention of the stomach the rest of the bicarbonate is given. The stomach tube and an air bulb may be employed, but for reasons which Dr. Bastedo has stated before *(New York State Journal of Medicine,* Nov. 1909, "Artificial Dilatation of Stomach and Colon as Aids in Ab-

* Read at the Annual Meeting of the Medical Society of the State of New York, April 30, 1914.

dominal Diagnosis, with a helpful sign in Chronic Appendicitis") we do not find this so good a method for the dilatation.

If on dilatation a good pyloric gurgle recurs at more or less regular intervals, as heard with the stethoscope, and if at the end of six hours the test dinner shows no residue, the case is positively not one of surgical obstruction.

If on dilatation there are good peristaltic waves, but absence of pyloric gurgle or only a slight irregular gas sound in the pyloric region, the pylorus is either obstructed or spasmodically closed. If peristalsis is not evident, the absence of pyloric gurgle has little or no value as a diagnostic sign.

If, eight hours after such a simple test dinner as that spoken of, the stomach contains a considerable quantity of the dinner in a fermenting condition, and the same result is obtained after the treatment for one to three weeks with bland, well disintegrated food, correction of hyperacidity and rest, the pyloric region is obstructed, and the case is positively surgical. It is not always necessary to put the patient under treatment and to wait so long before making the diagnosis.

A test often employed for obstruction is a rice and raisin meal at 10 P. M., the finding of remnants of this meal at 8 A. M., indicating obstruction. For this over-night test we prefer stewed prunes, for in several cases of obstruction, proven by operation, we have had negative findings after the rice and raisins, and positive after the prunes. This is apparently due to the less thorough mastication of prunes.

A good breakfast test is stewed prunes, oatmeal and cream, and a hard-boiled egg with toast. Their presence ten hours later makes a positive test. These tests should be repeated one and two weeks later for corroboration, the patient in the meantime being kept on thoroughly disintegrated food.

The diagnosis may be corroborated by Roentgen-ray findings, the pyloric region or first portion of the duodenum showing distortion, or the first portion of the duodenum failing to fill out properly and the stomach retaining a portion of the bismuth meal at the end of six hours. As a rule the Roentgen rays are not necessary for this diagnosis, but before any operation for obstruction it is wise to use the Roentgen ray as a check, as in some cases it not merely corroborates but actually supplements the clinical diagnosis. In other words the Roentgen-ray examination may show something unsuspected from the clinical tests. (Figs. 1-2).

3. The next question to decide is the nature of the lesion. Is it ulcer, cancer, adhesions, etc.? So far as its surgical status is concerned, that is the same no matter what the lesion, for "food retention calls for surgery." Between early cancer, ulcer and adhesions it may be impossible to make a clinical diagnosis, and then the Roentgen ray may be determinative. (Figs. 9-15).

If the stools of an obstruction case do not persistently show occult blood, and if repeated test breakfasts given after thorough lavage show a high hydrochloric acidity one is justified in the diagnosis of ulcer, though one cannot as a rule say absolutely that the ulcer is not beginning to undergo cancerous change. If a tender mass is felt in the pyloric region, if the stools persistently show occult blood, if after lavage the test breakfast gives absence of free hydrochloric acid, one is justified in the tentative diagnosis of cancer, whether there is cachexia or not.

The reason for lavage as a preliminary to the test breakfasts in these cases is that when there are fermenting retained contents in a cancer case there is not infrequently free hydrochloric acid, Boas' "hydrochloric acid of retention," while after lavage the test breakfast shows the diagnostic absence of free hydrochloric acid. Also in the stagnation contents of an ulcer case there may be milk sourness from milk taken the day before, and the consequent presence of lactic acid.

We could cite a number of cases from our experience, where, in the belief that he was dealing with a cancer, the surgeon removed a portion of the stomach, but in which the most careful search of the removed mass failed to show any cancerous tissue. Also we have had cases give manifest signs of cancer within two or three months of an operation at which the surgeon was convinced that he was dealing with a simple indurated ulcer and therefore did not remove it.

We might say that these cases were correctly diagnosed clinically before operation, and they have led us to believe in the possibility in most instances of making a correct clinical diagnosis at as early a time as a surgeon could be induced to operate.

In cases of pure pylorospasm without organic lesion at the pylorus, there may be some uncertainty in the diagnosis; but in these cases we note the absence of relief on taking food or alkalies, the non-relation of the pain to the period of digestion (2 to 4 hours after eating), and the lack of marked tenderness to finger-point pressure in the duodenal or pyloric region. Moreover, we are prone to have a history of equal distress from small meals or large, and at times no distress at all when a particularly large and varied meal is eaten in pleasant company. (Figs. 13-14).

In some cases of persistent pylorospasm in which the cause of the spasm cannot be removed, gastro-enterostomy may be indicated. This was the case, for example, in one of our patients with hour-glass stomach. At operation there was a large ulcer of the lesser curvature, and the pylorus, under the ether relaxation, admitted two fingers. But after the operation the spasm was as troublesome as before.

4. *Hour-Glass Stomach.*—In a case seen recently, with a history of obstruction and vomiting of retained contents, it was noted that the stomach was continuously in a condition of very great peristaltic activity. That seemed to sug-

gest pyloric stenosis, but on listening with the stethoscope there was regular and frequent loud pyloric gurgle, so that the pylorus was evidently opening and closing in a normal manner. On dilating with gas there was a rounded prominence projecting one and one-half inches beyond the left ribs, and reaching just to the point where the peristaltic waves began. It was obviously a two-pouch or hour-glass stomach. A small test dinner showed a fair residue at the end of six hours, and the Roentgen rays showed the double pouch.

The classical sign of hour-glass stomach is the sudden appearance of food residue after the stomach has apparently been washed clean. But we would caution against attributing much weight to this sign, for we have had it happen in cases which have been proven by operation to be free from hour-glass. In some of these cases it might be due to pseudo hour-glass constriction, *i. e.,* spasmodic constriction in the body of the stomach without organic lesion, for this would not show in a patient under an anesthetic. But it has occurred in cases with atonic dilated stomach, and therefore is a misleading rather than a useful diagnostic sign. An hour-glass stomach is a surgical stomach, and there is no clinical method to be compared with the Roentgen rays in its diagnosis. (Fig. 4).

5. Of non-obstructing lesions, we are of the opinion that a non-obstructing ulcer of either duodenum or stomach is not ordinarily a surgical condition. But if the Roentgen ray shows it to be a perforating ulcer, or if, in spite of proper ulcer treatment, it is the site of repeated severe hemorrhage or of persistent hemorrhage, is a constant source of pain or nausea, or interferes persistently with nutrition, it is surgical. Indeed if for any reason whatever it persistently keeps a man from proper attention to his business it requires surgery. (Figs. 5-7).

Cancer is always surgical, whether obstructive or non-obstructive, unless it has reached the stage of being inoperable. On the one hand we have the cases with palpable tumor, with absence of free hydrochloric acid and the presence of lactic acid in the test-breakfast findings, with constant blood in the stool, and with or without coffee ground material in the stomach. These signs point to cancer, but not to cancer in the early stage. It should be considered, however, as in the operable stage. On the other hand, if the tumor is large and immovable, or is accompanied by metastases or very marked cachexia with enfeeblement, it is in the class of the inoperable.

We have no satisfactory method of making a diagnosis of cancer, if it is non-obstructing, non-palpable, non-ulcerating and non-hemorrhagic. The laboratory men are developing tests that may help us; but in these early cases we have no reason for suspecting cancer, and so will be unlikely to have recourse to laboratory tests unless they are so developed as to be easily made in the physician's office. (Fig. 9).

6. *Gastroptoses.*—The question as to whether an operation should be done on the stomach, in cases of pronounced gastroptosis, and especially in those cases of simple water-trap stomach, described by Satterlee and LeWald, is an open one.

We might quote Satterlee and LeWald in this matter:

Water-trap Stomach.—"We believe the water-trap stomach to be a morphologic entity, a deformed organ which gives rise to a certain definite train of symptoms.

"The chief characteristic of this stomach is the relatively high, but normally placed, pyloric outlet, which is well held up by the gastrohepatic ligament and the retroperitoneal tissue to the spine. The water-trap stomach might almost be considered as a ptosed organ, with the first portion of the duodenum and pylorus fixed in proper position, giving the characteristic long pyloric arm and resemblance to a water-trap. Vomiting is infrequent, and is rarely a marked symptom. Residue in the stomach is much more frequent, and part of the symptoms can often be traced to this condition Figs. 12-18).

"The indications for and against operation may be summarized as follows:

"*a.* Care should be taken not to operate on a simple, ptosed stomach, with or without dilatation. This rule is subject to occasional modifications.

"*b.* The typical water-trap stomach of mild degree which does not yield to medical treatment should be operated on. (Figs. 17-18).

"*c.* The typical water-trap stomach of marked degree, which shows a large residue in the stomach after six hours, should be operated on when diagnosed." (Figs. 19-20).

7. *Pyloric Obstruction in Infants*—That liquid foods normally begin to be expelled in a very short time after they are taken into the stomach is a fact that is very helpful in our diagnosis of conditions dealing with some form of pyloric obstruction. For, if we can demonstrate with a degree of exactness, by a series of radiographs, that the milk is retained for a greater length of time than in a normal stomach, as shown by the bismuth shadow, we can determine with a fair degree of certainty with what type of obstruction we are dealing. If such striking results can be obtained by this means, it would seem to us manifestly unfair not to obtain an early series of radiograms in every suspected case, so that the infant, suffering from a true tumor with a lumen so small as practically to occlude the passage of the food into the duodenum may be transferred to the surgeon while its physical condition is still good. On the other hand, cases of pyloric spasm, even of marked degree, but without tumor formation, can be differentiated, since the time and the amount of the food passing through the pylorus can be seen, and thus the diagnosis, and even the prognosis, can be fairly well fixed.

8. *Foreign Bodies in the Stomach.*—When such conditions are suspected careful Roentgen-ray examinations should be made. The accompanying illustration of a hair-ball in the stomach well illustrates this point. (Fig. 21).

FIG. 1.—*Trifid Stomach.* Extreme deformity of the stomach due to ulcer. Clinical diagnosis of ulcer was made, but only the Roentgen ray exam. could give any conception of the serious nature of the case and the most unusual conditions to be overcome even by operation. Diag. confirmed at operation by Dr. Chas. L. Gibson, at St. Luke's Hosp.

FIG. 2.—*Pyloric Obstruction* due to a dense cicatrized ulcer at the pylorus. Note the very marked peristaltic waves. These could be observed on ordinary inspection, but on account of the very low position of the stomach were thought by one examiner to be in the colon and indicative of intestinal obstruction in view of the marked constipation present, until the Roentgen ray exam. showed the true condition. Diag. confirmed at operation by Dr. John M. Draper.

FIG. 3.—*Hair Ball in the Stomach.* Indefinite symptoms of nausea and indigestion for several years. Palpable tumor, with clinical diag. of probable tuberculous peritonitis with a rolling up of the omentum. On Roentgen exam. a positive diagnosis of hair-ball in the stomach was made. Diag. confirmed and hair-ball removed at St. Luke's Hosp. by Dr. Walton Martin.

FIG. 4.—*Hour-Glass Stomach.* Patient had been subjected to an exploratory laparotomy several years before for supposed biliary calculi. No calculi found. Present symptoms began a few years later, and led to a clin. diag. of supposed ulcer of the stomach or carcinoma. Roentgen ray exam. gave an immediate positive diag. of hour-glass stomach with no evidence of ulcer or carcinoma. (Note the very smooth outlines of the upper pouch and the neck between it and the lower pouch.) Diag. confirmed at operation by Dr. Walton Martin at St. Luke's Hosp. The constriction was due to a band of omentum adherent to the liver in the region of the former incision. Immediate restoration of the stomach to its normal shape followed the division of the band.

FIG. 5.—*Penetrating Ulcer Lesser Curvature of Stomach* with spasmodic contraction of the greater curvature, thus producing a pseudo-hour-glass deformity. Diag. confirmed by operation at St. Luke's Hospital by Dr. W. A. Downes. The spasm disappeared under the anesthetic.

FIG. 6.—Same case as Fig. 5.—*After Operation.* The ulcer was excised, and the stomach wound restored by plastic procedure. *Note that the spasm on the greater culvature persists* after the excision of the ulcer. The patient nevertheless made a perfect recovery and remained free from symptoms. Note the much larger opening between the two portions of the pouches of the stomach, compared to the condition before operation.

FIG. 7.—*Penetrating Ulcer of the Stomach* with spasmodic pseudo hour-glass contraction. Roentgen Diag. confirmed at operation by Dr. W. A. Downes at St. Luke's Hosp. The ulcer had penetrated into the pancreas. An ideal operation was performed; complete excision of the ulcer with complete division of the stomach and removal of that portion of the stomach included by the dotted lines. (See Fig. 8 for shape of stomach after operation.)

FIG. 8.—Case shown in Fig. 7.—*After Operation.* Note the complete restoration of the stomach contour, but with reduced capacity in accordance with part excised. The patient felt perfectly well and was entirely relieved of the marked boring pain which was no doubt due to the stomach wall having been penetrated. The stomach except for its limited capacity performed its functions in a proper manner.

FIG. 9.—*Early Carcinoma at Pyloric End of the Stomach.* Diag. confirmed at operation by Dr. Frank Mathews at St. Luke's Hosp. Two ulcerated areas were found at the pyloric end of the stomach. Wide excision and posterior gastro-jejunostomy performed. (See Fig. 10 for shape of stomach after operation.)

FIG. 10.—Case shown in Fig. 9.—*After Operation.* Recovery and no recurrence to date —one year. Micro exam. of section of tumor at first showed only ulcer, but exam. of glands showed carcinoma. Further sectioning of the ulcer areas finally revealed carcinoma.

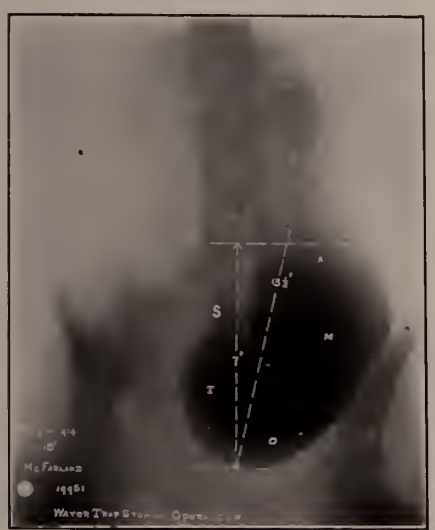


FIG. 11.—*Typical Water-trap Stomach.* Greater curvature well down in the pelvis. Distance vertically from duodenum to greater curvature 7 inches. Length of stomach 13½ inches. (For amount of residue in stomach see Fig. 12.) Operation by Dr. Ellsworth Eliot at Presbyterian Hosp.

FIG. 12.—Same case as Fig. 11.—*Residue in a Water-trap Stomach 7½ hours* after the ingestion of an opaque meal. The inability of a ptosed stomach of this type to empty itself within six hours on repeated examination usually requires operative relief by some carefully performed suspension operation, or the more radical procedure of gastro-enterostomy, with or without closure of the pylorus.

FIG. 13.—*Pylorospasm.* Patient seized with attack of uncontrollable vomiting. Condition almost continuous for weeks. Roentgen exam. made with difficulty (vomited the first opaque meal). The second meal was retained. Most remarkable findings. Only enough food left the stomach in three hours and forty-five minutes to outline the duodenal "cap". Roentgen diag. of pylorospasm confirmed at operation by Dr. W. A. Downes at St. Luke's Hosp. (See Fig. 14.)

FIG. 14.—Same as Fig. 13.—*After Operation.* The stomach is now emptying in a normal time. Vomiting ceased, and patient was restored to health and regained her lost weight. The operation consisted of opening the pylorus and adjacent portion of stomach and duodenum and performing a pyloroplasty. (There was no ulcer or other condition discoverable to account for the pylorospasm.)

FIG. 15.—*Syphilis of the Stomach.* Congenital origin. Female aged 16 years. Chief symptoms of vomiting and extreme emaciation. Positive Wassermann reaction, obtained after the Roentgen exam. revealed the peculiar stenosed stomach and its syphilitic nature suggested. Roentgen diag. confirmed at operation by Dr. W. A. Downes at St. Luke's Hosp. Marked fibrous connective tissue changes involving a large portion of the body of the stomach. Gastro-jejunostomy (posterior) was performed with great difficulty high up near the cardiac pouch where the wall was the least involved. (See Fig. 16 for condition after operation.)

FIG. 16.—Same as Fig. 15.—*After Operation.* Immediate recovery from operation excellent. A few weeks later as the patient began to increase the amount of food taken vomiting recurred. Patient was referred for Roentgen exam. to determine what was wrong with the gastro-enterostomy functioning. Report was at once returned that there was nothing wrong with the gastro-enterostomy. It was working perfectly. A most interesting condition was observed; *the esophagus had taken on a compensatory dilatation* to make up for the very much reduced size of the stomach, and the vomiting was merely due to an overflowing. The patient was placed on smaller feedings at frequent intervals. Vomiting ceased and weight gained.

FIG. 17.—*Water-trap Stomach.* Pyloric arm (distance from highest point of duodenum to the lowest point of the greatest curvature of the *full* stomach roentgenographed in the *vertical* position with the central ray on a level with the line joining the crests of the iliac bones) 7 inches.

Diagnosis confirmed at operation by Dr. W. A. Downes at St. Luke's Hosp. Posterior gastro-jejunostomy with closure of the pylorus by ligature. Complete recovery followed. (For amount of residue in this stomach before operation see Fig. 18.)

FIG. 18.—Same as Fig. 17.—*Residue in Stomach* near the end of six hours after an opaque meal. Note how the stomach has come to a resting stage with a large residue. The jejunum has emptied. Apparent delay in the ileum due to the slow emptying time of the stomach. The ileum emptied in a normal manner after operation on the stomach. Likewise the constipation was relieved. There was no ulcer or other lesion at the pylorus in this case.

FIG. 19.—*Water-trap Stomach.* This patient had suffered for years with stomach symptoms. The Roentgen exam. showed a large residue in the stomach after six hours. The pyloric arm (distance from highest point of duod. to greater curv. of stomach vertically) measured 7¾ inches (19 cm.).

Roentgen diag. confirmed at operation by Dr. John M. Draper. (See Fig. 20 for condition of stomach nearly a year after a carefully performed suspension operation.)

FIG. 20.—Same as Fig. 19.—*After Operation.* Water-trap stomach 9½ months after suspension operation. Greater curvature has remained elevated 4½ inches (11.5 cm.). Patient well. Gained weight. Constipation relieved.

THE IMPORTANCE OF UROLOGY IN WOMEN.*

By HENRY DAWSON FURNISS, M.D.,
NEW YORK CITY.

A VERY large percentage of our gynecological cases complain of urinary disturbances which are independent or dependent upon diseases of the genital organs. And yet it is surprising to see how very little these have interested the average gynecologist.

Many feel that gynecology is a very limited specialty, and it certainly is if we are to exclude from it the diseases of the urinary system. For the best interests of our patients I think it incumbent upon every gynecologist to acquire a good working knowledge of the methods of diagnosis and therapy of urinary diseases.

Of all diseases I know of none in which we are better able, with our present diagnostic methods, to make an accurate and comprehensive diagnosis, than in diseases of the uropoetic system, and without such methods and depending upon symptoms alone, none in which the chances of error are greater. In few are the classical symptoms present, and exactly the same symptoms are present in many conditions that are entirely different. For instance, I have seen renal calculi which have been present for months and years and have caused no symptoms; on the other hand, I have observed cases of renal tuberculosis, stricture of the ureter, and floating kidney, which have prevented text book symptoms of calculus colic.

Below I shall outline our usual procedure of examination.

First—A careful history from which we can infer the probable nature of the trouble and determine in what direction the examination had best be conducted.

Urinanalysis.—Examination of the specimen of urine which the patient has brought with her, or better still, examination of a catheterized specimen taken under aseptic precautions. Besides the usual microscopical and chemical examinations, a search should be made for tubercle bacilli in all cases.

I know of a pathologist in this city who has made several diagnoses of tuberculosis, where the physician sending the specimen had not suspected it and had not requested that tubercle bacilli be looked for.

In women the finding of tubercle bacilli in the urine is a practical certainty that at least one kidney is involved. A culture should always be taken, whether or no there is pus.

A careful pelvic and abdominal examination should now be made, to determine the mobility, the size, and the sensitiveness of the kidneys and any abnormalities of the genital organs. We should endeavor to palpate the ureters, for frequently low stones and thickened tuberculous ureters can be felt. In some cases of very severe tuberculous cystitis it is impossible to determine with the cystoscope the involved side, and in these the thickened ureter alone furnishes a clue to the situation.

Of the many valuable functional tests, for practical purposes I find two sufficient: phenolsulfonephthalein test either intravenously or intramuscularly, and indigo-carmine intravenously. By the first we determine the total functional activity of the two kidneys; if the elimination is normal we can infer that at least one kidney is doing its work, if it is low, that neither kidney is efficient. The indigo-carmine test will be referred to below.

With the phenolsulfonephthalein test I have detected kidney insufficiency in cases where the usual methods of examination showed practically normal conditions. This test is of value not only in surgical but in medical cases, and it is of much importance in determining the advisability of doing operations that are more or less elective. On several occasions the constant low output has made me abandon operative interference, and the wisdom of this decision has been borne out by seeing the patients die within a short time.

All patients should be radiographed, for the findings are always instructive whether positive or negative, and at times surprising. Recently I sent a case to a orthopedist for chronic backache and the X-ray showed shadows suspicious of stone; this same orthopedist referred to me a case for kidney conditions, and the radiograph showed involvement of the sacro-iliac joint.

Should suspicion of stone be found the patient should again be radiographed, after the introduction of an X-ray catheter or injection into the kidney pelvis or ureter of argyrol or collargol, for in most ureteric stone cases there is dilatation of the ureter above the stone. These radiographs had best be made stereoscopically to make sure of the relation of the shadow to the ureter.

With the cystoscope and endoscope the whole of the bladder can be seen, and in most cases diagnosis of vesical conditions made.

The greatest difficulty is in interpreting the changes seen in and round the ureteric orifices. In women about half of bladder disturbances are due to chronic urethritis, and unless the urethra is inspected through the Kelly endoscope, these are overlooked and the case treated in vain for other conditions.

At the time of the cystoscopy, if sufficient has not been found to account for the symptoms, 10 c.c. of a 3/10 1% solution of indigo-carmine is injected intravenously and the elimination from the two ureters observed through a simple examining cystoscope. This normally begins in from 2 to 6 minutes, the average being 3½ minutes. In this way the determination of the better kidney is made by the relative time of the beginning elimination, and I think it better than by the

* Read before the New York Medico Surgical Society, October 18, 1913.

phenolsulfonephthalein method which requires ureteral catheterization. Occasionally in difficult cases we use this method to locate a ureter o rthe presence of supernumerary ureters.

The ureteral catheter is a very valuable instrument, though one used often ill-advisedly. I think the best urologist is one who finds the least necessity for the ureteral catheter. For example, it is far better, if possible, to determine by simple cystoscopy and the observation of the ureteral orifices the presence of a tuberculous kidney, than to attempt to catheterize a diseased ureter. We gain no additional information by such a procedure and the traumatism is deleterious.

The wax tip catheter is valuable in detecting the presence of such stones as show no shadows in the radiographs, and we occasionally use it.

One of our most valuable diagnostic aids is pyelography. It consists in radiographing the kidney, pelvis and ureter after injection into them of substances resistant to the passage of X-rays. Collargol and argyrol are the substances most used.

Abnormalities of form, size, and position as are found in hydrophorosis, floating kidney, stricture of the ureter, tumors encroaching upon the renal pelvis are graphically pictured.

When all other methods of diagnosis have failed to reveal the condition pyelography has often been our salvation. It is highly useful in strictures that are passed with little resistance and no recognition and in the early stage of hydronephrosis.

A well known method of diagnosis and one used infrequently and usually as a last resort is tuberculin, but only in suspicious cases where there has been failure to discover the tubercle bacilli, either in smears or by guinea pig inoculations. A general reaction signifies only that tuberculosis is present and it is necessary to obtain a distinct focal reaction to localize the seat of the disease. There are more chances of discovering tubercle bacilli during and after such a reaction.

For lack of time I shall speak of only two therapeutic uses of the cystoscope: one is fulguration treatment of papillomata of the bladder, which has given excellent results with very little disturbance and hardly any damage to the bladder or urethra. The other is the ease of removal of foreign bodies through the endoscope. In this way I have taken out three hairpins and one gauze sponge, with no damage to any of the patients, though one of the hairpin cases was a five year old girl.

In cases of uretero vaginal fistula the opening is so small and so hidden away as to be detected with great difficulty. In such cases I have found the most satisfactory method is to inject indigo-carmine intravenously and tampon the vagina with moist cotton. The patient is then cystoscoped and the elimination noted. If the severance of the ureter is complete, that ureter will fail to eliminate the dye. If the severance is only incomplete the dye is eliminated in decreased amount. In this way we determine the side on which the ureter is injured. After ten minutes the cotton is removed from vagina and the blue stained portion will show us the location of the fistulous opening.

A point to be remembered is that in cases of long standing the renal function is impaired by infection and back pressure due to the contracted opening, and consequently the indigo-carmine will not be eliminated so strongly as by the normal kidney. I have not attempted to give a comprehensive and detailed account of the methods of examination, but only to outline our methods of procedure and to demonstrate the importance of urology in women.

SHOULD THE GENERAL PRACTITIONER TAKE PART IN THE TREATMENT OF GONOCOCCUS INFECTION?

By J. BAYARD CLARK, M.D.,
NEW YORK CITY.

THIS short paper is based upon 100 letters of inquiry sent to leading genito-urinary surgeons in Europe and America. The main object of this quest was to get an opinion based upon the broadest experience, as to the relative value of a short period of rest at the beginning of a gonococcus infection.

Before going further, the all-importance of bringing the infection to a cure before it gets away from the anterior urethra into the by-ways of the prostate, vesicles, vas, epididymis, etc., must be thoroughly appreciated, else the point of this paper will be lost. To-day, when posterior invasion is mentioned, involvement to a greater or lesser degree of these by-ways of the genital glands is understood.

These letters contained the following questions:

"Taking the cases as they come with the first attack of gonorrhœa, which has not existed longer than a week, what percentage of cures was obtained without the posterior urethra being invaded, giving also the approximate duration of disease."

"First. In patients treated with balsams or injections, or both, but allowed to attend to their regular occupations?

"Second. In patients treated with balsams or injections or both, but also put to bed or at complete rest for two or three weeks?

"Third. In patients who are simply put to bed or at complete rest, without medicinal or local treatment?

There were sixty-five who responded and of

"Footnote: It is assumed that all cases under treatment were on a restricted diet, free from alcohol or condiments and advised as to cleanliness and the avoidance of sexual excitement."

these forty-seven had given answers upon which some definite conclusion could be based. The value of these opinions must be estimated in accordance with their source, as coming from those whose experience and judgment have placed them at the head of this department of medical knowledge. From these then the following averages were drawn: Those who were in favor of a complete rest at the commencement of the disease, 84 per cent; those who took a neutral stand, 14 per cent; those who thought it better for their patients to continue with their acivity, 2 per cent.

The three questions were answered as follows:

"No. 1. Cures obtained without posterior invasion, by employment of treatment, but patients attending to their daily occupation, 49 per cent; average duration of disease, six weeks. This high percentage of cures deserves here some attempt to explain the extraordinary lack of harmony between these figures and the universally accepted record, which gives only a little upwards of 10 per cent of cures, without an extension of the infection beyond the anterior urethra. The only possible explanation would seem to be that this practically 50 per cent of cures was drawn from the records of those especially skilled, as against the little over 10 per cent of cures based upon all sorts of treatment or no treatment at all.

"No. 2.—Cures affected without posterior invasion by employment of treatment, patients being put to bed or at complete rest, 62 per cent, average duration of disease, four weeks.

"No. 3.—Patients who were put to bed are at complete rest, without medicinal or local treatment. To this question there were not enough answers made from which to draw any useful conclusion."

The percentage of freshly infected patients applying to the specialist is, according to a considerable number questioned on that subject about three to five per cent. What the special worker in the genito-urinary field gets is the chronic cases, the stricture cases, the complicated cases, the cases in short which should never or rarely have occurred.

From the practical standpoint at the present time, the specialist plays a minor rôle in the care or control of early gonorrhœa. To him the vast army of uncured cases may apply, but the damage is done and in all too many cases the chance for a certain cure has slipped away. Though the organisms may finally become extinct, the conflict between them and nature all too often leaves the genital or urinary functions impaired for life.

There is little use to summarize the foregoing figures, they are a summary themselves which speaks the importance of intelligent care versus the customary neglect meted out to this infection.

If the general practitioner is going to stand on honest ground in the dealings with his patients so infected, whether male or female, he will either send these patients to those whose experience and interest have fitted them for this field, or he will expend the time and trouble himself to meet the requirement of giving full measure to them.

I wish to express my thanks and appreciation to those who have made this paper possible through their courtesy and consideration in drawing from their records the figures which are herein summarized.

LANDRY'S PARALYSIS AND ITS RELATION TO ACUTE EPIDEMIC POLIOMYELITIS.*

By EDWARD AFFLECK SHARP, M.D.,
BUFFALO, N. Y.

A TYPE of acute ascending paralysis was described by Landry,[1] in 1859, who reported one case in detail and commented on four others of similar nature which he had observed. He was also able to gather from the literature five cases which apparently belonged to this group, making a total of ten known up to that time.

The term "Landry's Paralysis" came into use to designate this type of paralysis, and numerous cases of acute ascending paralysis have been reported under that title.

Landry's paralysis has been variously held to be a clinical entity, a form of polyneuritis, of poliomyelitis and of myelitis.

Buzzard[2] considers the term the best abused name in medical literature, as "every form of paralysis which has been rapid and which has happened to begin in the lower extremities and extend upward has been called Landry's paralysis whether the morbid changes in the cord have been gross or insignificant." He believes it is a definite clinical entity and shows how it can be differentiated from polyneuritis and from poliomyelitis. A similar view is taken in a recent article by Bolten.[3]

These authors refer to the original case of Landry in which no changes were found in the nervous system.

Wickman[4] called attention to the similarity between the rapidly progressive cases of epidemic poliomyelitis and Landry's paralysis, which he describes as the Landry paralysis type of poliomyelitis.

In the Rockefeller Institute monograph on poliomyelitis[5] the statement is made that "many, if not all, cases showing the symptom-complex known as Landry's paralysis belong to the rapidly progressive type of poliomyelitis."

Other writers claim it is usually a form of acute toxic polyneuritis.

These conflicting statements, and the report of numerous cases of acute ascending paralysis

* Read at the Joint Meeting of the Seventh and Eighth District Branches of the Medical Society of the State of New York, at Sonyea, September 25, 1913.

of widely differing etiology and pathology, as cases of Landry's paralysis because they conformed to the classical description, prompted me to secure the original article for comparison with the cases which I had observed during the recent epidemic of acute poliomyelitis.

Through the courtesy of the Grosvenor Library, of Buffalo, I was able to obtain from the Surgeon-General's Library a copy of the *Gazette Hebdomadaire de Medecine,* Vol. VI, Paris, 1859, in which the original article was published under the title "Note sur la paralysie ascendante aiguë." A translation of the resumé is given for comparison with the cases which will be reported later.

"A man forty-three years old, of poor constitution, debilitated by a series of acute affections in rapid succession, by hemoptysis and a prolonged low diet, developed, during a slow and incomplete convalescence, a sensation of general feebleness which gradually increased, but without any appreciable symptoms of paralysis. This was soon followed by tingling sensations in the toes and fingers, at first limited to these parts, without any changes in the motility. After a prodromal period of about six weeks, characterized by these phenomena, the tingling sensations gradually extended up the extremities, changing to numbness and accompanied by paralysis in the parts involved. The paralysis, which involved mostly the motility, extended rapidly from the feet to the remainder of the lower extremities, then to the upper extremities, the trunk, muscles of respiration, the tongue, etc. The loss of movement was more complete in the distal portion of the extremities. Micturition and defecation remained normal up to the end. The muscular irritability and nutrition, and the electrical excitability of the nerve trunks were not in the least altered. There were no contractures, no fibrillary tremors, no local or general convulsions and no reflex movements. At no time did the patient experience any pain in the extremities, in the back or head, and there was no tenderness on pressure at any point. There was no febrile reaction and the intelligence was normal. Finally, the respiration became more and more incomplete, the symptoms of asphyxia became manifest, and the patient died suddenly, eight days after the appearance of the first paralytic symptoms.

"At the autopsy no discernible lesions of the nervous system could be found. The only lesions found were the remains of a pleurisy and a recent pneumonia."

Whatever may have been the etiology and pathology of this case a similar type of acute ascending paralysis was found to occur during the course of, or following, various acute infectious diseases, suppurative processes and conditions of auto-intoxication. The theory was advanced that the paralysis, in such cases, is due to toxic substances of bacterial origin which interfere with the functional activity of the nerve centers without producing structural changes.

Cases of this character constitute the typical Landry's paralysis, in which the pathological-anatomical changes are absent or only demonstrable by those staining methods which bring out the finer changes in the nerve cells or fibres.

Other cases have been reported as Landry's paralysis in which gross pathological changes were found in the central nervous system, and the limits of the symptom-complex have been extended by some writers to include many cases of multiple neuritis and poliomyelitis; the one distinguishing feature being the rapid advance of the paralysis.

In the type of acute ascending paralysis occurring in epidemic poliomyelitis the clinical picture presents many important differences from the original Landry type, although the contrary statement is frequently made. Frost[6] states that "The clinical course of a case of ascending or descending acute poliomyelitis is identical with that of a Landry's paralysis." This can only be so under the more extended conception of the symptom-complex as mentioned above.

In Landry's original case the long prodromal period and preceding ill health; the numbness and flaccid paralysis commencing in the distal portion of the extremities and extending upward; the absence of pain and tenderness in the back and along the nerve trunks; and the lack of febrile reaction would appear sufficient to separate it from the type of ascending paralysis which occurs in epidemic poliomyelitis.

The failure to find any lesions in the spinal cord by the staining methods then known, indicates that the changes were not those of poliomyelitis, as such lesions could have been easily detected even in the absence of the Nissl staining method. Unfortunately the peripheral nerves were not examined, but it is doubtful if some of the minute changes could have been detected without the Marchi stain, which was not known at that time.

During the recent epidemic of acute poliomyelitis a number of cases of rapidly progressive paralysis occurred, and they constituted most of the fatal cases.

The following report is based on the observation of twenty-six of these cases examined in Buffalo and surrounding towns. Of this number seventeen were males and nine females. The average age was about seven years; the youngest being eight months and the oldest twenty-four years. As had been observed by others the gradual extension of the paralysis was more easily demonstrated in the older children.

The usual clinical history was that a child, previously in good health, became suddenly ill with fever, vomiting, restlessness or drowsiness, twitchings in the extremities, pains in the head and tenderness of the neck and back with rigid-

ity and pain on movements. After a day or two of these acute febrile or prodromal symptoms the paralysis appeared in one extremity and extended more or less rapidly to the others, involving the trunk, intercostals, neck and diaphragm; death resulting from respiratory failure.

The prodromal stage was similar to those cases which developed a more localized paralysis or which ran their course without paralysis, and there was nothing at the onset to indicate which cases would stop short of paralysis or go on to complete loss of function of all the muscles and terminate fatally.

In the accompanying table it is seen that in fourteen of the cases the paralysis began on the third day of the illness; in two cases on the second day and in five instances on the fourth day of the illness. One child was ill for three weeks before the first signs of weakness appeared in the extremities.

TABLE SHOWING DAILY ADVANCE IN THE PARALYSIS.

No.	Sex.	Age.	Day of onset Paralysis.	First day of Paralysis.	Second day of Paralysis.	Third day of Paralysis.	Result.
1	M	9/12	3d	Left arm; left face.	Right intercostals; right arm; left intercostals.	Diaphragm.	Died, 5th day.
2	F	6 1/2	3d	Right leg; right arm; right intercostals.	Left intercostals; left leg; back.	Neck; left arm, weak.	Paralyzed diaphragm; died, 6th day.
3	M	1 1/2	3d	Left arm.	Right leg; neck; left intercostals; left shoulder.	Right intercostals; back; diaphragm.	Died, 5th day.
4	F	5 5/12	7th remission.	Right leg; right arm.	Left leg, weak; left arm, weak.	Back; intercostals; Neck.	Died, 14th day.
5	M	4 1/4	4th	Left leg; left arm.	Neck; larynx; left face; intercost; right leg and arm weak.		Died, 6th day.
6	M	4	3d	Right leg; right arm, weak.	Left leg, weak; left arm; neck.	Back; intercostals; diaphragm.	Died, 6th day.
7	M	10/12	4th	Weakness for three days before paralysis.	Right leg; right arm; left leg; neck.	Left arm, weak.	Paralysis, with deformity.
8	M	5	2d	Both lower extremities.	Back; neck; upper extremities, weak; diaphragm.		Died, 3d day.
9	M	6	3d	Right leg; left leg, weak; abdominals.	Right face; intercost; upper extremities, weak; diaphragm.		Died, end of 4th day of illness.
10	M	13 1/2	3d	Right arm.	Left intercostals; left arm, weak; lower extremities, weak.	All four extremities very weak and functionless.	Paralysis with deformity.
11	M	24	5th	Weakness, both legs.	Paralyzed, both legs; right shoulder and arm; left shoulder and arm.		Paralysis with deformity.
12	M	3/4	3d	All four extremities; neck and back suddenly paralyzed.			Paralysis of legs; recovery of arms and neck.
13	M	10	7th	Left leg.	Right leg; left arm; right arm, weak.		Paralysis of right leg; left leg, weak; arms recovered.
14	F	2 7/12	3d	Right leg; left leg.	Back; right arm; left arm; neck.		Paralysis of right leg remaining.
15	M	2 1/2	3d	Left leg.	Left arm; back; neck; right leg.	Right arm, weak.	Paralysis of both lower extremities and left arm.
16	F	7	3d	Left lower extremities, weak; right lower extremities weak.	Paralyzed, both lower extremities; back; neck.	Intercostals; upper extremities.	Died, 2 months later from pneumonia.

No.	Sex.	Age.	Day of onset Paralysis.	First day of Paralysis.	Second day of Paralysis.	Third day of Paralysis.	Result.
17	M	16	2d	Both lower extremities; left arm.	Right arm; neck; deglutition; diaphragm.		Died, 4th day.
18	M	3	3d	Face; intercostals; upper extremities; lower extremities.	Completely paralyzed.		Died, 4th day.
19	M	15	4th	Both lower extremities; back.	Upper extremities; intercostals; diaphragm.		Died, 5th day.
20	F	18	3d	Numbness in legs; paralyzed, both lower extremities.	Back; intercostals; upper extremities.	Completely paralyzed.	Died, 5th day.
21	M	5 1/2	4th	Both lower extremities; back.	Upper extremities; neck; intercostals.		Died, 8th day; respiratory paralysis.
22	M	3	Ill for 3 weeks.	Weakness of legs.	Both lower extremities; weakness of arms.	Upper extremities; right face.	Weakness of legs and right face.
23	F	8	4th	Weakness in legs; back weak; weakness in arms.	Paralysis, lower and upper extremities; back; intercostals.		Paralysis of lower extremities; weak upper extremities.
24	F	6 1/2	9th	Both lower extremities; back.	Both upper extremities; left face; both external rectus of eyes.		Left leg paralyzed; right leg and arm weak; right VI. nerve weak.
25	F	1 1/2	3d	Weakness, both legs; increasing to paralysis.	Right arm; intercostals; left arm, slightly weak.		Weakness of lower extremities one month later.
26	F	8 1/2	3d	Right leg, weak; right arm.	Left leg and arm; anterior neck muscles; complete extremity paralysis.		Died, 6th day.

In all the cases the progress of the paralysis was rapid and had usually reached its height on the second day after the first appearance of weakness.

The paralysis appeared first in the lower extremities in twenty-one cases; in the upper extremities in three; in the face in one; and appeared to be generalized at the outset in one case.

There was no constancy in the order of invasion of the parts paralyzed as is seen by reference to the table showing the daily advance of the symptoms.

In some of the cases the paralysis began in the lower extremities and advanced in regular order up to the bulbar centers,—a true ascending type. In one case (No. 18) the reverse order occurred producing a descending type. In other instances one lateral half of the body would be involved before the paralysis spread to the other side, producing for a short time a hemiplegic distribution of the paralysis. In case No. 12 all four extremities, the neck and back appeared to be suddenly paralyzed.

The intercostal muscles were found involved in sixteen cases. Sometimes the paralysis would stop short after involving one side of the chest.

The diaphragm was affected in ten cases, in two of which it occurred without intercostal involvement.

Fifteen of the twenty-six cases died from paralysis of the respiratory muscles. In twelve instances death occurred on the third to the sixth day of the illness; on the eighth day in one, and on the fourteenth day in one case. One child died, two months after the intercostal paralysis, from pneumonia.

In eleven cases a fatal termination did not occur. The paralysis after reaching its height remained stationary for a while and then a gradual return of function occurred in certain muscle groups. The intercostal paralysis was usually early recovered from.

None of the cases have shown complete recovery. Some muscle groups have remained weakened or paralyzed and show atrophy and electrical reaction of degeneration.

The tendon reflexes were absent in the parts paralyzed.

The diagnosis of acute poliomyelitis, as the cause of these twenty-six cases of rapidly progressive paralysis, seems hardly to be questioned. Twenty-four of them were observed during the 1912 epidemic and two during the past summer.

The clinical history in all was so similar that a detailed report of each case is unnecessary.

The following case illustrates the typical course, and will also serve to show the difference from the Landry case cited above:

R. G. (case No. 2 in table) female, 6½ years old, became suddenly ill August 20, 1912, with headache, fever (temp. 103.5) and drowsiness. The next day the neck was stiff and painful on anterior flexion. At times jerking or twitching movements occurred in the extremities when the child was asleep.

August 22. Examination of the spinal fluid made by Dr. Russell during this pre-paralytic stage showed a cell count of sixty-five, with ten per cent polynuclears, and a strong globulin reaction. Weakness commenced in the right leg, increasing in severity and extending to the right arm and right intercostals.

August 23. Paralysis of the right side had become complete and the extension of the paralysis to the left intercostals and left lower extremity was observed. The muscles of the back and abdomen were functionless. There was marked hyperæsthesia over the entire body and all passive movements were painful. The sphincters were not involved. All the tendon reflexes, except those of the left arm, were abolished.

The extent of muscular involvement at this time is shown in Chart No. 1.

August 24. Paralysis of the neck muscles and weakness of the left arm occurred. The breathing was entirely diaphragmatic. The next day the diaphragm became involved and the child died from respiratory failure.

Autopsy was not permitted, nor were we able to secure autopsies on any of the other cases of this series.

Comparing this clinical history with that of the original Landry case it is seen that they are altogether different, and about the only common feature being the rapid progressive paralysis

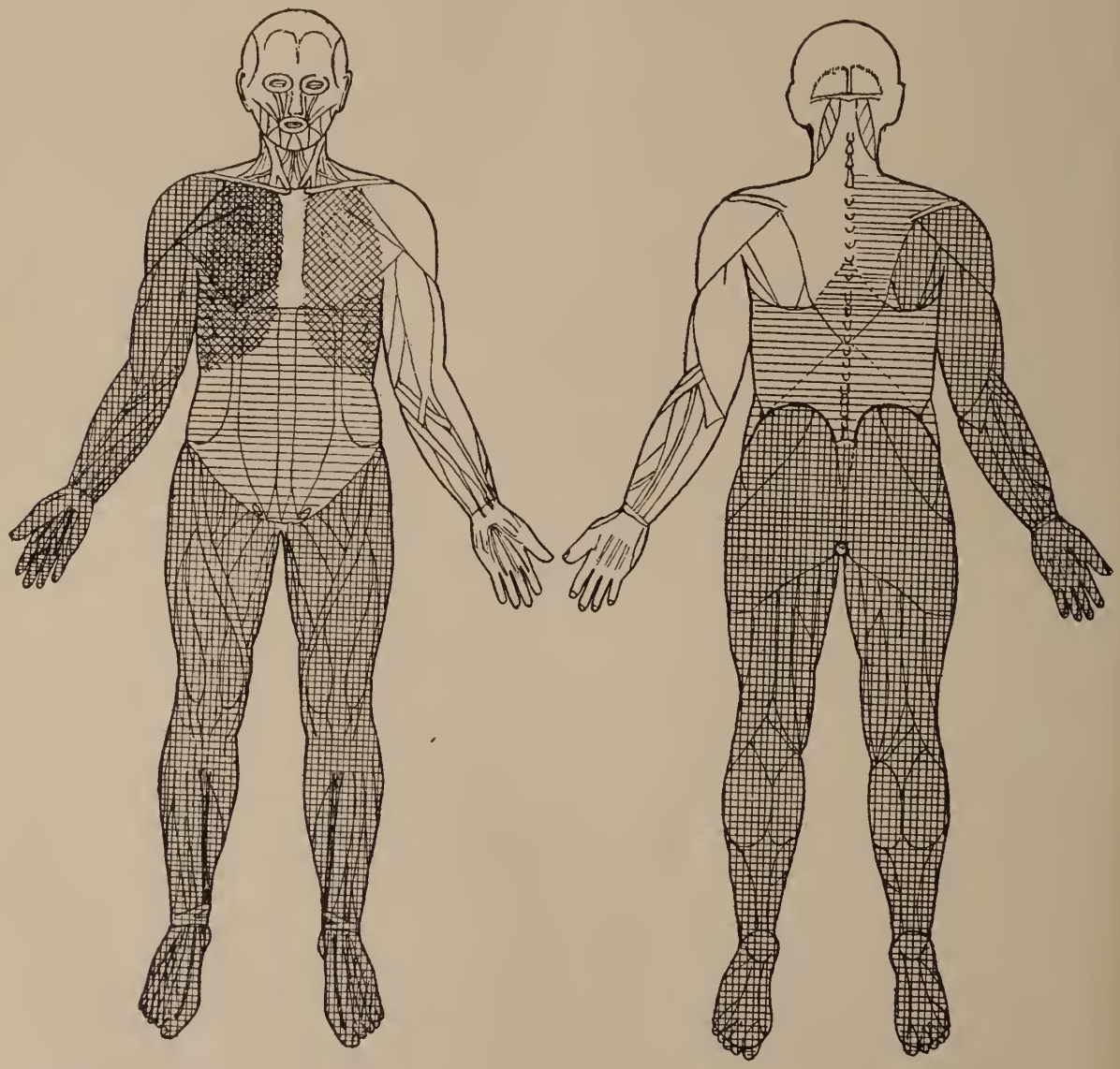


CHART No. 1.—Extent of paralysis in Case No. 2 on the second day after the onset of weakness.

with involvement of the respiratory muscles and death from asphyxia.

A point in diagnosis has been made regarding the electrical reactions, which in the typical Landry cases show normal response to the faradic and galvanic currents, while in poliomyelitis there is atrophy of the muscles with R. D.

In only one of the cases of this series was it possible to test out the electrical reactions during the early stages, and they were found normal on the fourth day after the onset of the paralysis, but showed reaction of degeneration ten days later.

In the fatal cases the course was so rapid that one would hardly expect to find electrical changes in the paralyzed muscles. In all the cases where electrical examinations were made several months after the paralysis, changes were found in the muscles remaining paralyzed, whether the cases were of the rapidly progressive or more limited bulbo-spinal type.

Treatment.—The only method of treatment adopted in these cases different from that employed in the ordinary type of poliomyelitis was the introduction into the spinal canal of adrenalin solution in doses of one to two c.c. of the 1 :1000 solution. In two cases this procedure was apparently effective in stopping the advance of the paralysis. Dr. Russell[7] has reported these, and also the failure to influence the advance of the paralysis in three other cases in which it was tried.

Conclusions.—Landry's paralysis is a symptom-complex characterized, clinically, by an acute ascending flaccid paralysis, and not accompanied by atrophy nor electrical reactions of degeneration; and pathologically, by slight or no lesions in the central nervous system.

The rapidly progressive cases of acute epidemic poliomyelitis show a type of ascending paralysis similar in many ways to that observed in the so-called Landry's paralysis, and such cases are properly classified as the Landry paralysis type of poliomyelitis.

Both clinically and pathologically the poliomyelitis cases present many important differences from the original Landry case.

REFERENCES.

1. Landry, *Gazette hebdomadaire de Medecine et de Chirurgie,* Paris, VI, 1859.

2. Buzzard, *Goulstonian Lectures on Certain Acute, Infective or Toxic Conditions of the Nervous System,* Lancet, March 30, 1907.

3. Bolten, *Berliner klinische Wochenschrift,* 1911, p. 111.

4. Wickman, *Heine-Medinschen Krankheit,* Berlin, 1907.

5. Peabody, Draper & Dochez, *Monograph No.* 4, *Rockefeller Institute for Medical Research,* 1912.

6. Frost, Acute Anterior Poliomeylitis, *Public Health Bulletin No.* 44, February, 1911.

7. Russell, *Hospital Bulletin No.* 1, Department of Health, Buffalo, N. Y., 1913.

THE INFLUENCE OF DIET UPON THE GROWTH AND RECURRENCE OF ADENOIDS.*

By FRANK VAN DER BOGERT, M.D.,
SCHENECTADY, N. Y.

ABSOLUTE statistics as to the frequency of adenoid growths, and comparative statistics with previous years are practically impossible to obtain owing to the large number of cases operated outside of hospitals. Were we, however, to judge from personal experience, from hospital records and public opinion, the increase seems undeniable, even when we eliminate the unnecessary operations and allow for those adults whose chronic nasal catarrhs might be looked upon as originating in adenoids which should have been removed in early life. It hardly seems reasonable, moreover, to suppose that the great prevalence of adenoids to-day is but apparent, a mere result of greater vigilance on the part of the examining physician.

At any rate the incidence of this disease is much too great and recurrence after removal far too frequent to allow the seeming indifference as to etiology, since it is only through a thorough knowledge of causative factors that we can hope for prevention.

In no other diseased condition is the medical profession content to accept an apparent cure with so little effort in the direction of preventive medicine.

Our present knowledge as to causation is exceedingly meagre and theoretical. Practically all authorities attribute much to the so-called lymphatic diathesis, and without this constitutional predisposition it would be hard to account for the congenital cases and for the apparent hereditary influence.

The term, lymphatic diathesis, however, simply means a tendency to hyperplasia of lymphatic structures and must be in itself due to an underlying cause, either in the affected individual or his progenitors.

Rachitis seems to play an important part, and, as a more direct and exciting cause, catarrhal affections of the nose and naso-pharynx are accused, though it is impossible to say whether these catarrhal affections are a result or a cause. Bacterial infection of the nose, mouth and throat are considered, and the frequent association of tuberculosis has been noted, but should probably be considered secondary.

The so-called hereditary and distinctly congenital cases give to the lymphatic diathesis theory its greatest support. I say distinctly congenital because I think we must realize the danger of considering cases congenital which are seen during early months, in which the condition might not have been present at birth, but brought about by causes operating immediately after

* Read at the Annual Meeting of the Medical Society of the State of New York, April 28, 1914.

birth. Congenital cases can hardly be explained except by attributing them to a diathesis, and cases born with a distinct growth, whose parents are subjects of the disease, may possibly be considered hereditary. One is justified, however, in questioning the occurrence of congenital cases, in view of the fact that the development of the child may be so early influenced by its environment. My personal experience with cases developing in early months of infancy would lead me to believe that even at this period, dietetic errors and gastro-intestinal disorders have some bearing. So far I have been unable to find a record of a case in which digital examination has demonstrated the presence of adenoids at birth; without such demonstration their congenial occurrence is not proven and the finding of the growth at a later period, in children whose parents have shown this condition, might as justly be considered due to environment as to heredity, since the parents were in all probability reared under the same conditions of diet and hygiene.

The frequency with which adenoids are found associated with rickets has been freely noted. Rickets is a distinctly nutritional disorder with marked catarrh of the mucous membranes generally, the whole of the gastro-intestinal and respiratory tracts being involved in the catarrhal process, as evidenced by the digestive disturbances, laryngysmus and bronchitis. If a nutritional disease, such as rickets, can bring about disturbances of the mucous membranes sufficient to produce a marked bronchitis or a diarrhea, it seems not unreasonable to suppose it capable of causing sufficient irritation of the nasal pharynx to bring about an increased susceptibility to growth of adenoid tissue. If one nutritional disease can have this effect, others may have it as well.

As to the importance of coryza, post-nasal and pharyngeal conditions, if they are to be considered as causes and not as effect, we have only to argue that these conditions do not develop in normal individuals, but that there must be, to allow for their development, a lack of vitality or a lack of resistance in the parts involved. This lack of resistance to the common cold and to pharyngeal conditions, including tonsils, is preeminently found in the gastro-enteric, and I have been recently impressed with the severity of the throat and nasal symptoms in patients suffering from scarlet fever and measles whose previous histories show them to have been subjects of marked digestive disorders.

The almost universal association with adenoid growths of marked evidences of digestive disturbances and the persistance of the digestive symptoms and evidence of intestinal toxæmia after removal of the growths, has led me to study carefully the dietetic histories of these cases and to treat a series of cases dietetically. My observations have convinced me that much can be done by this method of treatment in the way of inhibiting excessive growth and preventing recurrence. Naturally when a growth has reached proportions sufficient to cause obstructive symptoms, operation is required.

It was with the hope of establishing a causal relationship between the digestive disorders and the tendency to growth and recurrence of adenoids that this study was undertaken.

The great difficulty, naturally, in establishing such relation, lies in the fact that the great majority of children are badly fed and that for this reason one seems hardly justified in drawing marked conclusions. In my experience, however, the severe cases of adenoid growths have been found in children suffering from more marked types of chronic gastro-intestinal disturbances, and the tendency to recurrence certainly seems more common in this type of case. Although it may probably be justly said that practically all children are badly fed, certainly all badly fed children are not chronic gastro-enterics, and it is practically only, I think, in those whose dietetic errors have led to a distinct catarrhal condition of the alimentary tract that the large adenoid growths are found.

It may be argued that as digestive disturbances render the skin more vulnerable to lesions caused by irritation and infection, these same digestive disorders may, and undoubtedly do, render the mucous membrances (a simple continuation of the skin surface and practically of the same structure histologically) more susceptible to irritation. It seems, therefore, reasonable to believe that a nasal catarrh, or any infection of the naso-pharynx, in themselves made possible by lowered resistance, may, through long continuance or frequent repetition, cause, in individuals whose tissues are rendered vulnerable by products of faulty metabolism, sufficient irritation to stimulate the growth of adenoid tissue.

Adenoids may be compared to nasal polyps, or to the ordinary skin wart. The polyp is probably due to the irritation of a chronic rhinitis, and the wart to an infection, but were there no underlying cause, polyps would be expected to develop in every case of chronic rhinitis, and infection would occur with sufficient frequency to preclude any doubt as to the infectious origin of warts, and this doubt apparently still exists in the minds of some.

Recently a case has come under my observation showing very marked nervous and digestive symptoms, which were not relieved by a previous removal of adenoids, and exhibiting a wart upon the hand. And another, upon which I myself operated with no apparent improvement, where the history showed a between-meals eater with continuance of bad dietetic habits after operation. This child also gave a history of geographical tongue, foul breath and warts.

A third case showing the occurrence of warts in conjunction with adenoids was seen by my

associate Dr. Clowe, in which there was an exceedingly bad dietetic history from early infancy, marked digestive disorder and, as he expressed it, the child was covered with warts. Other cases examined showed various skin lesions.

Judging from carefully taken histories, the determining dietetic factors seem, in many cases, to originate in earliest infancy. Irregular nursing and early weaning as well as too prolonged nursing seem to exercise a marked influence. Troublesome and difficult artificial feeding with colic seemed to play a part.

In later childhood, irregular and between-meals eating were exceedingly commonly noted in the histories, and excesses in the direction of starches and sweets were most prevalent.

Between-meals eating practically always means starch and sugar excess, since invariably the articles taken at such times consist of sweets, preserves, bread and crackers or cake. These factors may be productive of rickets, a disease which is admitted to predispose to adenoids.

The cases studied, practically without exception, showed evidence of marked gastro-intestinal conditions, one or more of the following symptoms being noted in practically every case: loss or perversion of appetite, restless or disturbed sleep, sweats, nervous manifestations, including picking of the nose, which in justice we must admit to be possibly due to local conditions, such as accumulation of discharge brought about directly by the adenoids. This latter symptom has been noted as pathognomonic of adenoids, but when we consider its frequency in digestive disturbances, so frequent, in fact, that the laity have come to depend upon it as a certain indication of worms, it possibly becomes an argument in favor of the digestive tract as a causative factor.

Upon examination these children show emaciation, distended abdomen, with bloating and stomach aches, anemia, coated and geographical tongue, constipation or a record of having taken much physic, asthma, not relieved by operation, bed wetting, indicanuria, carious teeth. Yearsley, in an investigation into the occurrence of adenoids in three of the London County Council Elementary Schools, found a distinctly higher percentage of diseased teeth in children suffering from the growths. He attributes the occurrence to the increased tendency to sepsis; the effect of dietetic errors upon the teeth is, however, undisputed.

All these symptoms must be admitted to possibly depend upon the presence of the growth, either through local irritation or through the production of obstructive symptoms or a general toxemia. The frequent failure, however, to obtain permanent relief, by operation, of these constitutional symptoms and the frequency of recurrence of the adenoids after operation must leave room for doubt. Temporary relief usually follows, but without appropriate after treatment the general ill health often recurs, and it is to the intestinal tract that I hope to direct at least a part of this after treatment.

Recurrences have been noted as frequent among subjects of gastro-intestinal catarrh. Recurrences are known to be more frequent when operation is performed in early life, and the reason for these recurrences after early operation, I believe, in many instances, lies in the fact that the operations are performed at a time when dietetic errors are most frequent; when, on the other hand, the operation is performed late the tendency to indulge is not so great.

The increased incidence of the disease, if we admit it, has occurred along with the increased dietetic temptations to which children are subject. The growth of the soda water and candy industry to its present proportions has covered a period of but a few years and children have been necessarily forced into the rapid pace set by their parents. High living means over-indulgence. It is no more unjust to attribute the increase in the frequency of adenoid growths to the high living, or possibly we might say, the bad living, of to-day, because we find the increase contemporary with the increased temptations, than to attribute the increase in infantile scurvy, for example, to the advent of proprietary foods because they occurred in the same decade.

In conclusion I wish to cite a few cases which may be considered rather typical of the point suggested.

A child of five with a cough persisting four months after operation, in whom examination of sputum at time of operation was negative for tuberculosis and the lungs negative showed irregularities of the bowels and nervous symptoms.

Another child of five in which digital examination confirmed the diagnosis, at the end of three months of dietetic treatment showed a very small growth with no symptoms. He had been a great between-meals eater and had been given much castoria. A report from the mother received seven months after the first visit gave his general condition as improved. This case was not operated, but treated dietetically.

Another, age five, with obstructive breathing, a candy and between-meals eater, whose urine showed a large quantity of indican, was put on May 19th upon a diet and treatment for the digestive condition. On August 19th, three months later, the mouth-breathing had apparently ceased. She was operated, however, in October, and her report in March 9th gave her condition as improved, no mouth-breathing.

Another case showed recurrence of general symptoms after operation with a continuance of bad feeding.

A fifth patient gave a recurrence after removal of a very large growth. This child was still harboring a tape-worm which was present prior to operation.

A sixth showed recurrence with constipation and a history of much physic.

Another was treated by me for hemorrhage from the bowel about two years previously.

A child operated twice in hope of relieving chronic bronchitis and asthma with no immediate result was markedly improved by dietetic and general treatment. This patient had been fed practically alone on cow's milk until two years old.

A case of chorea which persisted after two operations upon tonsils and adenoids had persisted in bad dietetic habits and showed fissured tongue.

A child very nervous and irritable four months after operation reported improved nine months later upon regulation of diet.

A patient with a history of tonsil and adenoid removal some months before I saw her, showed a marked growth upon digital examination, chorea and very marked indicanuria; she was cranky and irritable. This case showed a very marked improvement under the diet and arsenic.

A child of five with much nasal obstruction gave history of having been nursed fifteen months and when she wanted it, said to eat nothing but candy and to vomit when she did eat. She was a restless sleeper and subject to night terrors, irritable and cranky; this case was much improved upon the diet, though a nasal discharge continued.

These few examples illustrate, I hope, three points to which I hope to draw attention. Bad dietetic histories, failure to obtain, by operation, relief of general symptoms, and improvement under proper dietetic régime in cases in which symptoms have existed or growths have recurred.

CORRESPONDENCE.

Editor, New York State Journal of Medicine.

Dear Doctor: It is a great satisfaction to be able to report that the two most objectionable legislative bills, viz.: the Naturopaths' Bill and the Chiropractic Act, were killed in the Legislature at the eleventh hour.

This end was accomplished largely by the active efforts of the Medical Society of the State, to which your County Society contributed its quota, and the result demonstrates that it pays to fight these issues to the full limit of time, as at the last moment there was strong pressure brought to bear in favor of these bills. Furthermore, such a contest suggests the advisability of every member of the Society becoming acquainted, at least, with the names of their Senators and Assemblymen, and when occasion offers, to meet them personally. For the fight will certainly be renewed next year, and the effort should be made to prove to these representatives of the people that opposition to such legislation is not that of selfish interest on the part of the medical profession, but for the benefit of the public at large.

Respectfully submitted,
Charles H. Chetwood, *Chairman.*

New York, N. Y., May 23, 1914.

Editor New York State Journal of Medicine.

Dear Doctor:

The present situation in New York City, regarding the advertising venereal quack is as follows:

The "Corosh Ordinance" has been passed by the New York Board of Aldermen. No prosecutions have as yet been undertaken under this ordinance. Such prosecutions, as they concern the matter of fraud (deceptive or misleading advertising, etc.), and not primarily public health, cannot be undertaken, I am informed, by the Department of Health; so I have tried to interest the New York County Medical Society in this matter. I have yet to hear what they decide to do. Before we attempt to get any further legislation, at least in New York City, I think we will have to try out what we have at present. If the County Medical Associates cannot undertake this, we will, of course, have to look elsewhere. You heard of the "Squire Bill" which was introduced in the Assembly at Albany, and which prohibited any advertisement concerning venereal diseases. This bill was referred to the Committee on Codes, and very promptly and swiftly died. I understand that newspaper pressure was largely responsible for its untimely demise. Notwithstanding the fact that legislation is slow and the prosecutions are few and far between, the Department of Health is continuing on its course. We still have our advertisement in the *Telegram* which diverts a considerable number of patients from the venereal quack. We are having 5,000 tin signs printed which read as follows:

> VENEREAL DISEASES.—Confidential advice regarding Gonorrhœa, Syphilis and Sex Diseases, can be obtained free at Room 207, The Department of Health, 149 Centre Street, Monday, Wednesday, Friday at 2 to 4 P. M., Tuesday, Thursday and Saturday at 9 to 11 A. M. Avoid advertising specialists and patent medicine.

Mr. Whitin, of the Committee of Fourteen, has put us in touch with Messrs. Quinn, Farley and Coyle, of the Retail Liquor Dealers' Central Association, who are co-operating with the Department of Health in placing these signs in the toilets of saloons. We also hope to place these signs in subway, elevated and other toilets. A very few foreign newspapers are publishing bulletins of the Department of Health, and from these, a certain number of patients come to us. *Unser Gesund* and the *Volks Zeitung* are especially to be commended in the work they are doing The English newspapers, alas, always evade the subject. Sooner or later, I believe, one of the newspapers will see light and will start a crusade similar to that of the *Chicago Tribune.* One crusade like that does more good than all the laws together.

Very truly yours,
B. S. Barringer,
Medical Advisor,
Division of Venereal Diseases, Bureau of Infectious Diseases, Department of Health.

Syracuse, N. Y., January 20, 1914.

Editor New York State Journal of Medicine.

My Dear Doctor:

Enclosed you will find a paper of unusual interest. It was to have been read by invitation by my father-in-law, the late Dr. Nathan Jacobson, before the Onondaga Medical Society. He started work upon it a few days before his sudden death. Among his papers I found this first rough draft which, of course, is not complete. I revised the paper where I felt that changes were needed, but made as few alterations as possible. Although the paper is unfinished I felt that what has been written is of sufficient importance to justify publication.

Yours very sincerely,
J. R. Wiseman.

Editor NEW YORK STATE JOURNAL OF MEDICINE.

DEAR DOCTOR:

Will you please publish in the next issue of your journal the following announcement?

Most cordially yours,
AMERICAN MEDICAL ED. ASSOC.,
J. MACDONALD, JR.,
Secretary and Treasurer.

MEETING OF THE AMERICAN MEDICAL EDITORS' ASSOCIATION

On June 22d, 9 A. M., the above mentioned association will meet at the Marlborough-Blenheim Hotel, Atlantic City, N. J., under the presidency of Dr. E. A. Vander Veer of Albany, N. Y. An unusually attractive programme is being prepared. Among the papers are the following:

President's Address: E. A. Vander Veer, M.D., Albany, N. Y.

"Relation of the Medical Press to the Cancer Problem," by Mr. Fred'k L. Hoffman, Statistician of the Prudential Ins. Co., Newark, N. J. (by invitation).

"The Things that Count in Medical Practice," by H. Edwin Lewis, M.D., New York.

"Ideal National Medical Journal: What It Should Be and What It Should Not Be," by W. J. Robinson, M.D., New York.

"Two Problems of the Organization Journal: The Mediocre Paper and the Editorial Department," by Sarah M. Hobson, M.D., Chicago, Ill.

"Medical Journalism as a Local and as a National Proposition," by Thomas S. Blair, M.D., Harrisburg, Pa.

"Medical Books and Journals," by T. D. Crothers, M.D., Hartford, Conn.

"The Medical Periodical and the Scientific Society," by F. H. Garrison, M.D., Washington, D. C.

"Editorial Experiences," by A. L. Benedict, M.D., Buffalo, N. Y.

"The Special Medical Journal," by A. Bassler, M.D., New York.

"The Medical Profession and Its Influence from a Buying Standpoint," by Joseph MacDonald, Jr., M.D., New York.

"The Preparation of the Original Article and the Editors' Latitude," by E. Franklin Smith, M.D., New York.

"He Among You Who Is Without Sin Shall Cast the First Stone," by Erwin Reissmann, M.D., Newark.

Bowling Green, Ky., May 23, 1914.

Editor NEW YORK STATE JOURNAL OF MEDICINE.

MY DEAR DOCTOR:

The ninth annual meeting of the Association of State Secretaries and Editors will be held at the Marlborough-Blenheim, Monday, June 22d, at 7 P. M. A very interesting program has been arranged which will include the subjects of medical defense, uniform regulation of membership, medical advertisements and a general discussion of the various journals.

I trust you will be able to be present and take part in the discussions.

Very truly yours,
L. H. SOUTH.

AMERICAN MEDICAL ASSOCIATION.

Council on Pharmacy and Chemistry.

NEW AND NON-OFFICIAL REMEDIES.

Since publication of *New and Non-official Remedies*, 1914, and in addition to those previously reported, the following articles have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion with *New and Non-official Remedies*.

Trypsin, Fairchild.—A powder consisting of the proteolytic enzyme of the pancreas, separated to a considerable extent from the other enzymes and constituents of the glands, and of a definite strength. Trypsin digests proteins and neucleoproteins in slightly alkaline media. Fairchild Bros. and Foster, New York (*Jour. A. M. A.*, March 7, 1914, p. 776).

Cerolin.—Cerolin consists of the fats, cholesterins, lecithin and ethereal oil extracted from yeast by alcohol. Experiments have indicated that the laxative action of yeast depends on the fats and lipoid constituents, and that in skin affections these substances have the action of yeast itself. Hence cerolin, marketed in the form of cerolin pills 1½ grains, is said to be useful in furunculosis, acne and in other skin affections. It is also said to be useful in habitual constipation, leucorrhea, erosions of the vagina and cervix and in similar diseases. Merck and Co., New York City (*Jour. A. M. A.*, March 21, 1914, p. 931).

Refined and Concentrated Tetanus Antitoxin, Squibb. —For description see *New and Non-official Remedies*, 1914. Marketed in the form of syringes containing, respectively, an immunizing dose and a curative dose. E. R. Squibb and Sons, New York (*Jour. A. M. A.*, March 21, 1914, p. 931).

Typhoid Vaccine (Immunizing).—For description of typhoid vaccine see *N. N. R.*, 1914, p. 259. It is prepared according to the method of the U. S. Army Laboratory. Marketed in ampule and syringe packages each containing 500 million, and 1,000 million killed typhoid bacilli. H. M. Alexander and Co., Marietta, Pa. (*Jour. A. M. A.*, March 28, 1914, p. 1014).

B. B. Culture.—A pure culture of *Bacillus Bulgaricus* marketed in bottles containing 90 c.c. Intended for use in intestinal indigestion and for the enterocolitis of infants. B. B. Culture Laboratories, Yonkers, N. Y. (*Jour. A. M. A.*, March 28, 1914, p. 1014).

PROPAGANDA FOR REFORM.

Amorphous Phosphorus.—Amorphous or red phosphorus is chemically most inactive and pharmacologically is generally considered without action. Now Dr. I. L. Nascher proposes amorphous phosphorus as a remedy of remarkable value for arteriosclerosis of old age—but produces no reliable evidence for his claim. Based on Nascher's assertion Sharp and Dohme advertise Pill Phosphorus Amorphous S. and D. as a successful method of treatment for senile arteriosclerosis. The asserted actions of amorphous phosphorus are such as may be calculated to appeal to the sexual neurasthenic and the advertisements are likely to bring about an extensive use of the drug by the uncritical. The psychic element which plays so large a part with the sexual neurasthenic will bring favorable reports on the drug—at least for a while—just as at one time ordinary phorphorus had a vogue (*Jour. A. M. A.*, March 7, 1914, p. 793).

Red Phosphorus.—I. L. Nascher, in a letter to the *Journal*, states that he has had nothing to do with the exploitation of Pill Phosphorus Amorphous S. and D. He admits that he has no experimental basis for the use of this remedy and that his theory is simply a theory without facts to prove it (*Jour. A. M. A.*, March 28, 1914, p. 1033).

Town's Epilepsy Treatment.—This nostrum, formerly sold as Towns' Epilepsy Cure, is a bromid mixture that is taken indiscriminately by the public in doses that no physician would dare prescribe. The nostrum is given an editorial commendation in *The Western Christian Union* (*Jour. A. M. A.*, March 7, 1914, p. 794).

The Absorption of Iron from Mineral Waters.—It is now generally admitted that both forms, organic and inorganic, of iron compounds can be absorbed and satisfactorily carry out the purposes for which they are ordinarily administered. Recent investigation has shown that iron salts are absorbed from natural waters (chalybeate waters) in which they occur, and there is no reason for supposing that these cannot facilitate hemopoiesis and hemoglobin formation, if there is a deficiency in the iron-containing component of the blood, precisely as medicinally administered iron may.

They seem to possess no advantage, however, over the latter (*Jour. A. M. A.*, March 14, 1914, p. 856).

The Danger of Crotalin.—A death from infection from the use of crotalin is reported by J. F. Anderson of the U. S. Public Health Service. Out of 95 ampules of crotalin solution, from four different mnaufacturers, thirty-five were found to be contaminated; further, twelve tablets were examined and all found to be contaminated. It was demonstrated that there was a variation in the activity of different lots of crude venom and also in the solutions prepared by the same or different manufacturers. The report emphasizes the dangers of the use of rattlesnake venom or crotalin for the treatment of epilepsy (*Jour. A. M. A.*, March 21, 1914, p. 934).

Radium Therapy.—The value of radium in the treatment of constitutional diseases has not been demonstrated. While some clinical evidence has been introduced to show a favorable effect from radium preparations, the interpretation of such evidence is always beset with difficulties; it is hard to separate the improvement which arises from psychic influence from that which rests on an objective basis (*Jour. A. M. A.*, March 21, 1914, p. 952).

Citrolax.—Advertisements suggest that Citrolax is magnesium citrate in tablet form and superior to the regular magnesium citrate solution. Examination of Citrolax in the A. M. A. Chemical Laboratory showed that the tablets when treated with water did not give a clear solution. The watery solution was found to contain magnesium, sodium, and citrate, while the insoluble portion was found to be phenolphthalein equivalent to 3½ grains of phenolphthalein per tablet (*Jour. A. M. A.*, March 21, 1914, p. 949).

Thoxos.—Thoxos is offered to physicians by John Wyeth and Brother, for the treatment of rheumatism, rheumatic arthritis, gout, etc., with the following incomplete statement of composition: "It is a palatable solution of Strontium and Lithium soluble salts, thirty-two grains, combined with twenty-four minims Wine of Colchicum Seed and a vegetable alterative, in each fluid ounce, flavored with aromatics." From examination in the A. M. A. Chemical Laboratory it was concluded that Thoxos contains strontium salicylate, lithium salicylate, small quantities of sodium salicylate, free salicylic acid, and potassium iodid, and probably also colchicum and sarsaparilla. As strontium and lithium salicylate are generally considered to have about the same action as sodium salicylate, Thoxos may be considered as equivalent to a preparation containing in each dose of one teaspoonful 3 grains of sodium salicylate with a fractional dose of colchicum and potassium iodid (*Jour. A. M. A.*, March 21, 1914, p. 949).

Mercuric Chlorid and the Public.—In commenting on the use of mercuric chlorid tablets by the public, and on the attempts to check this by special legislation, M. I. Wilbert points out that the exploitation of this drug under non-descriptive titles such as "antiseptic tablets" is partially responsible for their indiscriminate use. The fact that they are given a distinctive shape or color does not serve to protect the purchaser if he is uninstructed as to their contents, instead it tends to elaborate on the misuse of the tablets. Physicians are to some extent responsible for the public use of tablets of corrosive mercuric chlorid, for in the past these tablets have been prescribed or given to patients for antiseptic purposes without sufficient precaution as to their poisonous character (*Jour. A. M. A.*, March 28, 1914, p. 1042).

Radium and Ethics.—Referring to enthusiastic statements by physicians relative to the curative value of radium emanations, the *Edinburgh Medical Journal* asks if there is much difference between the advertisements of any catch-penny patent cure-all and such announcements. It is pointed out that the public is only too ready to believe any tale as to the value of radium as a cure for gout, rheumatism and cancer and hence the medical profession should absolutely refrain from publicly encouraging such notions (*Jour. A. M. A.*, March 28, 1914, p. 1044).

Medical Society of the State of New York

MEDICAL SOCIETY OF THE COUNTY OF ERIE.

REGULAR MEETING, BUFFALO, APRIL 20, 1914.

The meeting was preceded by a subscription dinner given to meet Dr. William Francis Campbell, President, Medical Society of the State of New York, to which 125 members sat down, and after the dinner enjoyed the splendid and complimentary address of President Campbell.

President Woodruff acted as toastmaster.

Dr. Campbell, in the course of his remarks, expressed the hope that the western end of the State would be honored as is now the eastern end. This caused a spontaneous outburst for Dr. Grover W. Wende, the Society's candidate for President of the State Society.

Dr. Campbell was accompanied by Dr. James W. Fleming of Brooklyn, who encouraged his audience by saying that Brooklyn was with Buffalo.

Dr. W. T. Shanahan of Sonyea, President of the Seventh District Branch, brought greetings and encouragement from his district. The President then called upon Secretary Gram to give a condensed account of the activities of the Medical Society of the County of Erie during the past century.

Other speakers were: Drs. Edith R. Hatch, N. Victoria Chappell, Arthur G. Bennett, Thomas H. McKee, of Buffalo, and S. E. Page of East Bethany, Secretary of the Genesee County Medical Society.

At 8.30 o'clock the regular meeting was called to order by President Woodruff.

The minutes of the previous meeting, held February 16th, were adopted without reading, they having been published.

The Secretary then read the minutes of the Council Meetings of March 2, and April 6, 1914, both of which were adopted as read.

The following amendments to the By-Laws, which had been offered at the previous meeting and published with the notice of the meeting of April 20, 1914, as required, were then read and adopted:

To amend Chapter 2 of the By-Laws by introducing a Section 13, which should read:

SECTION 13, RETIRED MEMBERS.—Members in good standing who are seventy years of age or over, may, by a majority vote of the Society present and voting at any annual meeting, become retired members subject to the approval of the State Society as defined in its By-Laws, Chapter 1, Section 2. Applicants for retired membership must be approved and endorsed by the Council and the application must be sent to the Secretary of the State Society in time for presentation at the first meeting of the House of Delegates. Retired members shall be entitled to the privilege of attending and addressing the meetings of the Society, but shall not be accorded other rights or privileges of membership, nor be subject to assessments.

Amend Chapter 7, Section 1, by introducing a new line to read: "4. Economics," after the line "3. Membership."

Amend Chapter 7 by the introduction of a new section to be known as Section 6, which shall read: Committee on Economics.—The Committee on Economics shall consist of three members, including the Chairman. It shall be the duty of this Committee to investigate and report to the Council with recommendations all questions of an economic nature not properly the duty of other committees, or those referred to it by the Society, such as political, financial and educational relations with the government, with other professions, with the laity and with members of the medical profession and of the Society. It shall have power to appoint temporary sub-committees approved by the Council. It shall co-operate with like committees of the State and National Societies. Two members shall constitute a quorum.

Dr. Albert T. Lytle presented a comprehensive paper on "Contract Practice, an Economic Study."

The President then introduced Dr. William Francis Campbell, who entertained the Society with a scholarly address embodying his observations made in his official capacity during the past year in his visits to the various county and district societies.

Dr. Campbell outlined the activities of the State Society and all its component parts, and gave his views as to how these could be still further improved.

His remarks brought forth frequent and hearty applause.

Dr. Lytle's paper was then thoroughly discussed and various views were presented.

A reception and buffet lunch following the meeting.

MEDICAL SOCIETY OF THE COUNTY OF LIVINGSTON.

Regular Meeting at Sonyea, May 5, 1914.

A luncheon was given at the Craig Colony for Epileptics, after which Dr. F. M. Meader, Chief of the Bureau of Communicable Diseases of the State Department of Health, read a paper on "Typhoid Fever and Diphtheria Carriers and their Treatment," which was discussed by Drs. Bowen, Shanahan, Paine, Shaw and Fischbein.

A Committee on Red Cross Work was appointed by the President, to consist of Drs. Lauderdale, Bowen, Driesbach, with the President and the Secretary of the Society.

The matter of fees allowed by the Court in proceedings of lunacy was discussed, and upon motion of Dr. Bowen the following resolution was passed:

Whereas, The examination in lunacy requires personal qualifications and involves certain amount of legal and personal risk, and

Whereas, A fee of $5.00 for examination in lunacy is a relic of days when all prices and fees were cheaper than at present, and a fee of 10 cents a mile covers neither livery nor automobile and

Whereas, The Board of Supervisors have arbitrarily fixed the fee of $5.00 and a mileage of 10 cents for examination in lunacy, therefore be it

Resolved, That this Society respectfully requests the Board of Supervisors to rescind this action and allow a fee of $10.00 for each examination, with additional mileage of 25 cents per mile each way, for distance traveled to make such examination, where the physician making such examination travels outside the corporation in which he lives, and be it further

Resolved, That this resolution be presented to the Board of Supervisors at their next regular session by a committee of this Society.

The Secretary was instructed to confer with the Medical Society of the County of Monroe with a view of holding a joint meeting of the two societies some time during July or August.

MEDICAL SOCIETY OF THE COUNTY OF ST. LAWRENCE.

Semi-annual meeting at Gouverneur, Tuesday, April 7, 1914.

SCIENTIFIC SESSION.

Vice-President's Address, "Recent Progress in Psychiatry," R. H. Hutchings, M.D., Ogdensburg.

"The Anæmias, with Special Reference to the Pernicious Type," Clayton G. Andrews, M.D., Canton.

"Nasal Obstructions and Their Effects," Melvin J. Stearns, M.D., Ogdensburg.

"Treatment of Gonorrhœa in the Male," Charles E. Elkins, M.D., Massena.

"Hypertension and its Treatment," Charles T. Henderson, M.D., Gouverneur.

"Report of a Case of Hodgins' Disease," R. H. Thompson, M.D., Rensslaer Falls.

MEDICAL SOCIETY OF THE COUNTY OF MONROE.

Annual All-Day Meeting at Rochester, Tuesday, May 19, 1914.

The program was carried out with marked success, particularly in view of the fact that the clinics in the forenoon were an entirely new departure. It is noteworthy, that those in Medicine and Obstetrics had the best attendance. In some of the other clinics, the emphasis was largely on diagnosis or on general methods.

About one-third of the members sat down to luncheon at 1 o'clock and two-thirds attended the afternoon session. In the business meeting the following reports were received: First, relating to the adoption by representatives of medical and other organizations of a code of Principles and Prohibitions governing advertising, by means of which it is hoped to free the newspapers, etc., of much objectionable matter, and second, relating to an extensive and painstaking investigation into the prevalence of fee-splitting in this and seven adjoining counties. The investigation was by means of circular letters sent to all physicians of this vicinity and the report gave the results in great detail. It is to be hoped that good results will follow from this investigation.

SCIENTIFIC PROGRAM

"Practical Orthopedic Points for the Guidance of the General Practitioner," James Warren Sever, Instructor in Orthopedic Surgery, Harvard Medical School.

"Disturbances of the Internal Secretions," Thomas McCrae, Professor of Medicine, Jefferson Medical College.

"Discussion of Medical Economics and Ethics," Dr. James G. Mumford, of Clifton Springs.

CLINICS

General Hospital—Medicine: Dr. Roby. Diagnostic and therapeutic procedures, including Tuberculin Reactions, Schlick Diphtheria Reaction, Intravenous and Intraspinous Injections, Artificial Pneumo-thorax. Surgery: Dr. E. W. Mulligan in the operating rooms, Dr. C. N. Jameson to demonstrate NO-O Anæsthesia. Obstetrics: Dr. Brown, Obstetrical Diagnosis, Abdominal Palpation and Pelvimetry. Orthopedics: Drs. Fitch and Prince. Diagnosis of various Orthopedic Conditions. Also application of Abbott Jacket for correction of Lateral Curvature of Spine. Roentgenology: Dr. Palmer in the X-ray room, Gastro-Intestinal Tract. Pathology: By the staff in the Laboratory, including especially Drs. Boswell and Costello on Wassermann Reactions and Dr. Sutter on the Colloidal Gold Reaction of Spinal Fluid. Dermatology: Dr. Roseboom in the Out-Patient Department. Eye, Ear Nose and Throat: Drs. L. W. Jones, A. G. Morris, Ingersoll and McDowell in Out-Patient Department.

St. Mary's Hospital—Surgery: Dr. O. E. Jones in the operating room. Orthopedics and Roentgenology: Drs. L. A. Whitney and Cornman.

Park Avenue Hospital.—Surgical Clinic: Dr. C. R. Barber.

Municipal Hospital.—Infectious Diseases: Dr. Goler.

State Hospital.—Psychiatry: By the Staff.

County Hospital.—Chronic Diseases: Dr. Somers.

Iola Sanitarium.—Tuberculosis: Drs. Leary and Brayton.

Rochester Public Health Association.—Diagnosis of Tuberculosis: Dr. Whipple. Dermatology: Dr. Landauer. Neurology: Dr. VanderBeek.

Open-Air School.—Inspection of the New Buildings on Culver Road near the Widewaters, The Medical Phases of the Work: Dr. Aikman.

On the Electro-Cardiograph.—A practical demonstration of the Electro-Cardiographic Method in Heart Diagnosis at the Taylor Brothers Co., on Ames Street near West Avenue: Dr. Jackson.

MEDICAL SOCIETY OF THE COUNTY OF SARATOGA.

Regular meeting at Mechanicville, March 31, 1914.

SCIENTIFIC SESSION.

"Abdominal Symptoms," D. C. Moriarta, M.D., Saratoga Springs.

"A Case of Multiple Fracture," F. A. Palmer, M.D., Mechanicville.

"Treatment of the Pneumonias," T. E. Bullard, M.D., Schuylerville.

"A brief Outline of the CO^2 Bath and Its Uses," A. W. Ferris, M.D., Saratoga Springs.

MEDICAL SOCIETY OF THE COUNTY OF DUTCHESS.

Regular meeting at Poughkeepsie, April 8, 1914.

SCIENTIFIC SESSION.

"Physical Symptoms of Syphilis of the Nervous System," F. W. Parsons, M.D., Poughkeepsie.

"Use of Neosalvarsan in Above," M. W. Raynor, M.D., Poughkeepsie.

"Laboratory Points in Diagnosis of Above," H. P. Carpenter, M.D., Poughkeepsie.

"Acute Pancreatitis," J. W. Poucher, M.D., Poughkeepsie.

"Diagnosis of Early Tuberculosis: Dr. Cromwell.

"Presentation of Specimen of Rupture of Liver," L. H. Marks, M.D., Poughkeepsie.

THE MEDICAL SOCIETY OF THE COUNTY OF WYOMING.

Regular quarterly meeting at Attica, April 14, 1914.

The meeting was called to order at 2 P.M. by the president, Dr. W. J. French.

At the business session one new member was elected. A Committee was appointed to investigate and if possible prosecute certain illegal practitioners in the county. Another Committee was appointed to revise the fee bill.

The following papers were read:

"Ulcers of the Cornea," Raymond C. Conklin, M.D., Batavia.

"How Can the Clinical Laboratory be Made of More Practical Value to the General Practitioner?" Frederick D. Carr, M.D., Batavia.

SUFFOLK COUNTY MEDICAL SOCIETY.

Semi-Annual Meeting at New York City, April 27, 1914.

SCIENTIFIC PROGRAM.

"The Needs for Sewage Disposal in Long Island Villages," Linsly R. Williams, M.D., Deputy Commissioner of Health, New York State.

"The Bacteriology of Sewage Disposal," Herbert D. Pease, M.D., New York City.

"Sewage Disposal Plants for Long Island Villages," Andrew J. Prevost, Jr., C.E., New York City.

ONEIDA COUNTY MEDICAL SOCIETY.

Quarterly Meeting at Utica, Tuesday, April 14th.

SCIENTIFIC PROGRAM.

"Eye Strain," William H. Beattie, M.D., Utica.

"Eye Strain from the Standpoint of a General Practitioner," Charles B. Tefft, M.D., Utica.

"Some Observations in Bronchial Pneumonia," Edwin M. Griffith, M.D., Chadwicks.

"What do Doctors Amount To?" G. Masillon Lewis, M.D., Vernon.

MEDICAL SOCIETY OF THE COUNTY OF CLINTON.

SEMI-ANNUAL MEETING, PLATTSBURGH, MAY 19, 1914.

The members and visiting physicians were invited to the Arcade at 12.30 where a social hour was spent during luncheon. Fifteen members were present.

The Vice-President presided in the absence of the President.

SCIENTIFIC PROGRAM

"Radical Treatment of Empyema," Capt. S. M. DeLoffre, Medical Corps, U. S. A.

The relation of the physician to public affairs was discussed at length.

MEDICAL SOCIETY OF THE COUNTY OF WASHINGTON.

SEMI-ANNUAL MEETING AT GREENWICH, MAY 12, 1914.

For the lack of a quorum there was no meeting of the Comitia Minora, and the meeting was not called until 2 P. M. Vice-President Millington in the Chair. Members present: Drs. Millington, Banker, McKenzie Munson, Gray and Fryer. Visitors: Drs. Rogers, Orton and Washburn.

The minutes of the last meeting were read and approved. The President appointed Dr. Orton to act with Dr. Tenney to prepare congratulatory resolutions for Dr. A. M. Young as being a member of this Society for fifty years.

Dr. Meader, from the State Laboratory, read Dr. Wadsworth's paper on: "The State Laboratory as an Aid to Physicians," and was tendered a vote of thanks.

Dr. Millington gave his address: "Opium Poisoning with some very Interesting Cases."

Dr. Z. V. D. Orton read a paper on "The Treatment of Tuberculosis, with Tuberculine-R," and reported some interesting cases and was tendered a vote of thanks.

MEDICAL SOCIETY OF THE COUNTY OF STEUBEN.

NINETY-SEVENTH ANNUAL MEETING AT BATH, MAY 12, 1914.

The following officers were elected for 1915: President, W. E. Barron, Addison; Vice-President, L. M. Kysor, Hornell; Secretary-Treasurer, B. R. Wakeman, Hornell; Delegate to State Society, D. P. Mathewson, Bath; Alternate to State Society, W. W. Smith, Avoca; Delegate to Sixth District Branch, B. A. Barney, Hornell; Alternate to Sixth District Branch, W. W. Smith, Avoca.

SCIENTIFIC PROGRAM

Report of House of Delegates, Medical Society, State of New York, John A. Conway, M.D., Hornell, N. Y.

"Proprietory Evil, or Where are we at?" Leon M. Kysor, M.D., Hornell, N. Y.

Discussion by Morey Collier, M.D., Painted Post, N. Y.

"Management of Hypertension," D. P. Mathewson, M.D., Bath, N. Y.

Discussion by R. G. Lawrence, M.D., Hammondsport, N. Y.

"Systematic Diagnosis," W. Ross Thompson, M.D., Warsaw, N. Y.

Discussion by O. K. Stewart, M.D., Canisteo, N. Y.

"Angina Pectoris," De Lancey Rochester, M.D., Buffalo, N. Y.

Discussion by J. G. Kelley, M.D., Hornell, N. Y.

MEDICAL SOCIETY OF THE COUNTY OF ORANGE.

Regular Meeting at Middletown, April 7, 1914.

SCIENTIFIC PROGRAM.

"Sanitary Problems of Interest to Medical and Veterinary Professions, with Particular Reference to Antitoxins and Vaccines," Dr. J. F. Devine, Goshen, State Veterinarian. Discussion by Ralph E. Walker, M.D., Middletown.

"Early Surgical Treatment of Cervical Adenitis, Charles Townsend, M.D., Newburgh. Discussion by Joseph B. Hulett, M.D., and Theodore D. Mills, M.D., Middletown.

"Medical Economics," W. Stanton Gleason, M.D., Newburgh.

BOOKS RECEIVED.

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

A HISTORY OF LARYNGOLOGY AND RHINOLOGY. By JONATHAN WRIGHT, M.D., Director Department of Laboratories, Post-Graduate Hospital. Second edition, revised and enlarged. Lea & Febiger, Philadelphia and New York, 1914.

ARTERIOSCLEROSIS. A Consideration of the Prolongation of Life and Efficiency after Forty. By LOUIS FAUGERES BISHOP, A.M., M.D., Clinical Professor Heart and Circulatory Diseases, Fordham University; Physician, Lincoln Hospital; Consultant, Cardiovascular Diseases, Mercy Hospital, Hempstead; Member American Medical Association, New York Pathological Society, Alumni Association, St. Luke's Hospital, etc. Henry Frowde, Hodder & Stoughton, Warwick Sq., E. C., London. Oxford University Press, 35 W. 32d St., New York. Price $3.50.

SURGERY; ITS PRINCIPLES AND PRACTICE. For Students and Practitioners. By ASTLEY PASTON COOPER ASHHURST, A.B., M.D., F.A.C.S., Instructor in Surgery University of Pennsylvania; Associate Surgeon, Episcopal Hospital; Assistant Surgeon, Philadelphia Orthopedic Hospital and Infirmary for Nervous Diseases. Handsome large octavo, 1141 pages, with 7 colored plates and 1032 illustrations, mostly original, in the text. Cloth, $6.00 net. Lea & Febiger, Publishers, Philadelphia and New York, 1914.

HEALTH THROUGH DIET. A Practical Guide to the Uric-Acid-Free Diet. Founded on eighteen years' personal experience. By KENNETH G. HAIG, L.R.C.P., Lond., M.R.C.S., Eng., with the advice and assistance of ALEXANDER HAIG, M.A., M.D., Oxon. Author of "Uric Acid as a Factor in the Causation of Disease," "Diet and Food," "Uric Acid Epitome," "Uric Acid in the Clinic," etc. Philadelphia, J. B. Lippincott Company, London, Metheun & Co., Ltd., 1914.

A HANDBOOK FOR THE POST-MORTEM ROOM. By ALEXANDER G. GIBSON, D.M., (Oxon) F.R.C.P., (Lond.) University Demonstrator in Pathology, Oxford, and Honorary Assistant Pathologist to the Radcliffe Infirmary, Oxford, London, Henry Frowde, Hodder & Stoughton, Warwick Sq., E. C. Oxford University Press, 35 W. 32d St., New York, 1914.

TREATMENT OF NEURASTHENIA. By PAUL HARTENBERG, M.D., translated by ERNEST PLAYFAIR, M.B., M.R.C.P. Edinburg, Glasgow and London. Henry Frowde and Hodder & Stoughton. Oxford University Press, 35 W. 32d St., New York, 1914.

MODERN SURGERY, GENERAL AND OPERATIVE. By J. CHALMERS DACOSTA, M.D., SAMUEL D. GROSS, Professor of Surgery, Jefferson Medical College, Philadelphia, Pa. Seventh edition. Revised, enlarged, and reset. Octavo of 1515 pages, with 1085 illustrations, some of them in colors. Philadelphia and London. W. B. Saunders Company, 1914. Cloth, $6.00 net; Half Morocco, $7.50 net.

TREATMENT OF CHRONIC LEG ULCERS, A PRACTICAL GUIDE TO ITS SYMPTOMATOLOGY, DIAGNOSIS AND TREATMENT. By EDWARD ADAMS, M.D. 122 Pages. Cloth, $1.00. Published by The International Journal of Surgery Company, 100 William Street, New York City.

THE JUNIOR NURSE. By CHARLOTTE A. BROWN, R. N., Instructor in the Boston City Hospital; Graduate of the Boston City Hospital and Boston Lying-in Hospital Training Schools for Nurses; late Superintendent of the Hartford Hospital Training School, Hartford, Conn. 12mo, 208 pages. Illustrated. Cloth, $1.50 net. Lea & Febiger, Publishers, Philadelphia and New York. 1914.

A MANUAL OF INFANTILE PARALYSIS WITH MODERN METHODS OF TREATMENT. Including Report Based on the Treatment of Three Thousand Cases. By HENRY W. FRAUENTHAL, A.C., M.D., Surgeon and Physician-in-Chief New York Hospital for Deformities and Joint Diseases; and JACOLYN VAN VLIET MANNING, M.D., Epidemiologist, Wisconsin, 1908, Epidemic Acute Poliomyelitis. Copiously illustrated with more than one hundred engravings, nearly all original. F. A. Davis Company, Philadelphia, Pa. English Depot, Stanley Phillips, London. 1914.

TEN SEX TALKS TO GIRLS (14 years and older). By IRVING DAVID STEINHARDT, M.D., Author of "Ten Sex Talks to Boys (14 years and older)." Instructor in Clinical Surgery and Assistant Surgeon, Cornell Medical School, Assistant Pediatrist, Mount Sinai Hospital, O.P.D. Orthopedic Surgeon, New York Hospital, O.P.D., Member American Medical Association, Society of Moral and Sanitary Prophylaxis. With six illustrations. J. B. Lippincott Company, Philadelphia and London. Price $1.00.

SEXUAL ETHICS. A Study of Borderland Questions. By ROBERT MICHELS, Professor of Political Economy and Statistics, University of Basle, Honorary Professor Faculty of Law, University of Turin. The Walter Scott Publishing Co., Ltd., Paternoster Sq., London, E. C. Charles Scribner's Sons, 597 Fifth Ave., New York, 1914.

THE HYPODERMIC SYRINGE. By GEO. L. SERVOSS, M.D., Editor of *Nevada Medicine*. Member of the Nevada State Medical Association. Fellow of the American Medical Association. 317 pages. Cloth, price $2.00. Physicians' Drug News Co., publishers., Newark, N. J.

BOOK REVIEWS.

PROSTITUTION IN EUROPE. By ABRAHAM FLEXNER. Introduction by JOHN D. ROCKEFELLER, JR., Chairman Bureau of Social Hygiene. New York: Century Co., 1914.

Flexner's book represents the results of two years' labor for the Bureau of Social Hygiene, which grew out of the work of the Special Grand Jury which investigated the white slave traffic in New York City in 1910. The work of this Bureau is intended to be permanent. For the present, it is engaged in a compilation of the facts of the situation. Flexner's contribution is the second of the Bureau's publications, the first having been Kneeland's "Commercialized Prostitution in New York City." A volume dealing with prostitution in the United States will appear later. Flexner presents all the essential facts, so far as Europe is concerned, giving credit where due. His own observations were extensive. The book is without bias and corrects some unsound beliefs. White slavery, for example, the author declares to be practically non-existent in Europe, medical examination is worse than a farce, and police regulation is dying out. He gives his conclusions at the end with respect to the outcome of European

experience, particularly as regards repression. Despite the author's commendable freedom from bias throughout the book he gives us a glimpse of his personal attitude on the last page, when he says that "sooner or later, it [civilization] must fling down the gauntlet to the whole horrible thing." But he is far from meaning by this that repression of crude manifestations of the vast system, or anything even remotely savoring of persecution in respect to its victims, is effective to any great extent; its roots go far too deep for such palliative management, and on page 401 Flexner traces these roots very clearly, for all their subtlety. His study is invested with the spirit of wisdom, and reveals a human understanding of a terrible problem that "imposes upon society an economic burden comparable with that due to standing armies, war, or pestilence." A. C. Jacobson.

The Operating Room and the Patient. By Russell S. Fowler, M.D., Chief Surgeon First Division, German Hospital, Brooklyn. Third edition, rewritten and enlarged. Octavo volume of 611 pages with 212 illustrations. Philadelphia and London: W. B. Saunders Company, 1913. Cloth, $3.50 net.

In this, the third edition of "The Operating Room and the Patient," the scope of the author's subject has been considerably enlarged and the greater part of the subject matter rewritten so as to bring it thoroughly up to date. There are in all over six hundred pages divided into twenty-three chapters, which comprise much more of general surgical interest than the title would indicate.

The author has aimed to simplify and standardize the technique and equipment of the operating room and has described the best and most generally accepted methods of pre- and post-operative care of patients.

After a general consideration of such subjects as the operating room and its accessories, anesthesia, bandaging, the care of the wound, after care, etc., operations on special tissues and the various regions of the body are then taken up in order and finally is appended a list of the instruments and dressings which are commonly employed in the various operations of surgery. This list is a complete one and should be in the possession of every operating room nurse or surgical assistant who is called upon to prepare for operations.

The chapters on vaccine therapy and anesthesia are noteworthy and thoroughly in accord with the best modern teaching.

The illustrations are numerous and excellent in character and serve well to emphasize the text. The book should find a place in the hands of all whose duties bring them in touch with the care of surgical patients. W. A. Sherwood, M.D.

A Treatise on the Diseases of Women. For Students and Practitioners. By Palmer Findley, B.S., M.D., Professor Gynecology, College of Medicine, University of Nebraska; Gynecologist, Clarkson Memorial and Douglas County Hospitals; Fellow American Gynecological Society; American Association of Obstetricians and Gynecologists; Chicago Gynecological Society. Octavo 945 pages, illustrated with 632 engravings in the text and 38 plates in colors and monochrome. Lea & Febiger, Philadelphia and New York, 1913, Cloth, $6.00, net.

This publication is a thorough revision and enlargement of Dr. Findley's earlier work: "Gynecological Diagnosis," which was received so kindly by the medical profession in 1903. It may now take its place, deservedly, as an excellent gynecological text-book, complete in all essentials, with new type and illustrations, and with careful reclassification of and additions to, all the former subject matter.

Modern gynecology is being brought up to date so quickly, by the appearance of so many new publications in the last two years, that with the appearance of still another one, it is difficult to find anything to criticize as to its scope, or because of any omissions. Findley's "Diseases of Women," is no exception to this statement. It is well and carefully prepared, profusely and accurately illustrated, and contains a well-balanced amount of scientific material devoted to the treatment of this special subject.

Of special interest are the chapters on "Dress," and "Malpositions of the Genital Organs." In the latter are described all the operative methods at present in vogue for the correction of backward displacements, with the steps of each operation illustrated in successive detail. Findley adds his approval to the use of anterior and posterior colpotomy as a diagnostic measure in obscure or undiagnosticated pelvic lesions. He also touches on the Hot Air Treatment of pelvic conditions, believing its use restricted to the relief of pain in chronic inflammatory processes of a non-suppurative nature. He does not think it effective in the correction of morbid anatomical conditions. The technique is well described, the author employing the electric heater of Gellhorn.

There seems to be no particular reason why the tupulo tent should receive any consideration in a modern gynecological work. Its use has been abandoned by all the best workers in this field. Why such an experienced and brilliant contributor as Dr. Findley should incorporate it into his book is a mystery. Clarence R. Hyde.

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

This sixth revised edition of this work shows many chapters rewritten and twenty-eight plates and illustrations added. One of the most radical innovations proposed by the author is the intra-uterine use of sterilized tupulo tents as a substitute for, or supplement to, forcible dilatation of the cervix for uterine hemorrhage, dysmenorrhœa and sterility. This procedure will, we opine, be tardily acknowledged, if at all, by those working in this special field.

The author introduces some new features in his treatment of the cervical stump, and in suture technique, in his methods of supra-vaginal hysterectomy and myomectomy. Considerable space is devoted to the broad ligament operation for complete uterine descensus. One can also see that Dr. Dudley is a pupil of Emmet in his treatment of operations on the bladder, especially the button-hole operation for cystitis, and that for incontinence. His own operation for anteflexion receives especial notice, to which is also appended Brickner's exhaustive report. The chapter on conservative ovarian operative procedures is too meagre for present day standards if measured by the brilliant work of Norris and Clark in this line.

The arrangement of the subject matter is good, especially the grouping of all forms of inflammation in sequence. With all the rearrangement and revision of previous chapters, and with all additions of new matter, the size of the book remains about the same as the former editions. Clarence R. Hyde.

Minor and Operative Surgery, Including Bandaging. By Henry R. Wharton, M.D., Professor Clinical Surgery, Woman's Medical College, Philadelphia. New (eighth) edition, enlarged and thoroughly revised. 12mo, 700 pages, with 570 illustrations. Lea & Febiger, Philadelphia and New York, 1913. Cloth, $3.00, net.

The eighth edition of this very excellent little manual, which has been the faithful companion of student and practitioner for many years and which has achieved an enviable reputation among medical publications, contains 697 pages and 570 illustrations. In the revision the criticism of surgical confrères has been borne in mind. The former general arrangement has been followed, new illustrations and material have been added, and the obsolete omitted. The work is divided into

eight parts: one, two, and three deal, respectively, with Bandaging, Minor Surgery, Asepsis and Antisepsis; four and five with Fractures and Dislocations; six, seven and eight, with Operations.

In the section on Bandaging the subject, as in earlier editions, is very well, accurately, and tersely described. The text is much enhanced and clarified by excellent illustrations. Three, from electrotypes, are marred by the appearance of the manufacturer's name.

Part Two is devoted to descriptions of dressing materials, minor surgical procedures, venesection, infusion, salvarsan administration, transfusion, etc. Crile's and Brewer's technic are described. Under Artificial Respiration a mention of the pulmotor is in order. From a glance at illustration No. 157, one would conclude that the syringe advocated for the injection of sera should be of the old-fashioned glass and metal type with leather washers (which is quite unsuitable for boiling), and should be purchased from H. K. Mulford Co. In this section the illustrations of instruments and apparatus are an eye-sore. Those showing the Howard and Sylvester methods of resuscitation are antiquated. The mechanical leech and scarifier are relics of the inquisition and should be replaced by other adequate and more modern substitutes. The remainder of the section includes: Skiagraphy, general, local, and regional anesthesia, trusses, etc., sutures, skiagraphy, general, local, and regional anesthesia, trusses, etc., sutures treatment of hemorrhage and shock, abscess, wounds, and removal of foreign bodies. These chapters, though elementary, are to the point and fulfill the requirements adequately.

Part Three, Asepsis and Antisepsis, includes the elementary considerations of surgical bacteriology, immunity, opsonic treatment, vaccines and serum therapy, the preparation of materials, instruments, patient and field of operation, the operator, and the treatment of post-operative wounds. The matter is well presented though in brief form.

In Part Four the author has confined his remarks to the more commonly observed fractures and a few of the frequently employed and generally accepted simple methods of treatment. The treatment of fractures by open operation is briefly touched upon.

Part Five is devoted to Dislocations. It cannot be too strongly urged to insist upon a radiograph being taken in two places in every traumatic lesion of bone and joint before and after treatment.

In Part Six the ligation of arteries is given an inclusive presentation..

In Part Seven the subject of Amputations is well presented. Illustrations are taken from Smith, Holmes, Esmarch, Bryant, Stimson, Druitt, and Skey.

Part Eight includes operations upon bones, joints, nerves, and tendons. Here again many old-time illustrations are to be seen. Other operations: Radical removal of the breast, and operations for appendicitis, and upon the kidney, ureter, colon and bladder, are briefly described, as well as minor operations as for varicocele, circumcision, hydrocele, intubation, and tracheotomy. The technique of operations upon the gall-bladder, stomach, and intestines, and for hernia are alluded to, and the generally accepted methods of procedure described in brief. ROYALE H. FOWLER.

A TEXT-BOOK OF THE PRACTICE OF MEDICINE. By JAMES M. ANDERS, M.D., Ph.D., LL.D., Professor of Medicine and Clinical Medicine, Medico-Chirurgical College, Philadelphia. Eleventh edition, thoroughly revised. Octavo of 1,335 pages, fully illustrated. Philadelphia and London: W. B. Saunders Company, 1913. Cloth, $5.50, net. Half-Morocco, $7.00 net.

This textbook, which the author states is intended for the use of students, has much to recommend it for this purpose. Chief among these desirable points is a great degree of brevity combined with clarity of presentation, and an excellent division of each subject into headings so that the desired facts may be found without difficulty.

Here and there new things have been added of more or less importance but in many ways the book follows closely on the plan of the original edition. Thus we find in the chapter dealing with ulcer of the stomach an elaborate distinction between gastric ulcer and gastralgia. A more fundamental criticism of the entire subject of the gastro-intestinal tract would be to say that it was not entirely modern. The discussion of the diseases of the heart is open to similar criticisms in that much is made of the individual valvular lesions and comparatively little of the modern views as to the minor importance of the valvular difficulty and the greater importance of the condition of the cardiac muscle.

THE HISTORY OF MEDICINE. With Medical Chronology, Bibliographic Data, and Test Questions. By FIELDING H. GARRISON, A.B., Principal Assistant, Librarian Surgeon-General's Office, Washington, D. C., Editor of the *Index Medicus*. Octavo of 677 pages, many portraits. Philadelphia and London: W. B. Saunders Company, 1913. Cloth, $6.00, net. Half-Morocco, $7.50 net.

The author modestly calls his book an introduction to the history of medicine, but it is really more than that. From the earliest time to the very latest, in fact down to the date of publication, he has given us a clear and concise outline of the important facts of medical history. He states in the introduction, his opinion, that it is hardly advantageous to burden the average medical American student with a special course of lectures on history. Does he not undertake the capabilities of the average American medical student? He has at least supplied the necessary text book for such a course, a book that might be made use of as collateral reading for every subject the medical student reaches in his curriculum. And is it not a fact that the average American medical student is more likely than the medical student of the older countries to come under the sway of the "Cult of the Passing Hour" and come to believe that the very latest and newest in medicine is all there is to it? The "Tyranny of Modernism" is as powerful in medicine as in any other field, and the latest advances and discoveries are so remarkable and so wonderful that it is no wonder that the average medical student should overlook the past and during his whole curriculum, never become acquainted with some of the earlier periods, when one may say truly, "There were giants in those days". Therefore the American medical student should be taught medical history, and one can only wish that Dr. Garrison's book be put on the list of books required. The interchapters on the cultural and social aspects of the various periods under consideration form a delightful and entertaining reading. As already stated he has brought his work up to, and including the latest advances in parasitology, chemotherapy, and protozoölogy. The Appendicies are very complete; they include, Medical Chronology, Histories, Biographies, Histories of special subjects, Test questions and Indices. PETER SCOTT.

PSYCHANALYSIS: ITS THEORIES AND PRACTICAL APPLICATION. By A. A. BRILL, Ph.B., M.D., Chief Neurological Department, Bronx Hospital and Dispensary; Clinical Assistant Psychiatry and Neurology, Columbia University. Octavo of 337 pages. Philadelphia and London. W. B. Saunders Company, 1912. Cloth, $3.00 *net*.

This work must be view from two different standpoints; for as it is claimed, it is a presentation of the theories of Freud and the results obtained by their application by the author.

As to the authors part, it is certainly a wonderfully clear presentation of a psychological subject; and is written in a style which not only reads easily but can be understood by anyone, a refreshing novelty compared with the usual work on psychology. As to the theories of Freud, his methods of analysis of mental processes has thrown light on some of the dark paths of the psychic world; and furnished us with new methods of discovering hidden cause of and dealing with abnormal mental states.

Like many others the structure of his theories is endangered by dogmatic claims which do not rest on one atom of evidence and it is the absurdity of some of these which may cast discredit upon an otherwise valuable advance in our knowledge of mental phenomanon. ARTHUR C. BRUSH, M.D.

SURGERY OF THE VASCULAR SYSTEM. By BERTRAM M. BERNHEIM, A.B., M.D., Instructor in Surgery, Johns Hopkins University, Baltimore. With 53 illustrations in text. Philadelphia and London: J. B. Lippincott Company.

B. M. Bernheim, M.D., in his recent book entitled "Surgery of the Vascular System" has set forth the fundamentals of vascular surgery in a masterful manner. The subject matter is brief, concise and together with the excellent illustrations it leaves no questions to ask in regard to the technique of the operations this surgery includes. H. T. LANGWORTHY, M.D.

SYPHILIS AND THE NERVOUS SYSTEM. For practitioners, neurologists and syphilologists. By Dr. MAX NONNE, Chief, Nervous Department, General Hospital, Hamburg, Eppendorf. Authorized translation from second revised and enlarged German edition. By CHARLES R. BALL, B.A., M.D., Chief, Nervous and Mental Department, St. Paul Free Dispensary; Neurologist, St. Joseph Hospital, Bethesda Hospital. Ninety-eight illustrations in text. Philadelphia and London. J. B. Lippincott Company. Price, $4.00.

This volume of 400 pages including a very extensive bibliography, largely of German writers, has embraced a vast amount of information for the general practitioner as well as the neurologist and has quite the stamp of the personnel of the clinician.

The introductory sets forth very conservatively the relationship of syphilis to organic nervous diseases generally, and points out as well the necessity of realizing that not all symptoms of organic nervous nature are necessarily specific, although specific infection may have been determined in the case.

The chapter on pathology contains nothing new. The cerebral type is shown to be more frequent than the spinal, and the meningeal forms are the ones most frequently met. In dealing with etiological factors it is pointed out that affections of the nervous system appear most frequently within the first year after infection, or at least within three years, and decrease from year to year thereafter. This statement apparently holds true in spite of serious nervous developments years afterwards, which so often prove to be recurrences of at least an anatomical, if not clinical nature.

The author then discusses the effect of other etiological factors in relation to nervous syphilis and points out how much value should be attached to them. It would appear, however, that the specific virus is the only etiological factor. Social factors do not seem to be of importance. Among the syphilitic, 2 per cent apparently show nervous lesions, and the question of why nervous tissue is affected remains as open as the question of why lead attacks the motor tract and ergot the posterior columns. Many pages are devoted to special conditions due to endarteritis, basilar manifestation and focal symptoms generally.

The chapter relating to the neuroses and psychoses contains nothing new, but rather confirms with respect to mental conditions, that upsets may be early as well as transient, and even very soon may show beginning deterioration.

The well-known relationship of paresis and syphilis is recorded, but the chapter was apparently written too early to include the findings of Moore and Noguchi as to the findings of the spirochæte in the brain and cord of paretics and which were so extensively published during the year 1913, although reference to the findings is made a footnote in the introductory chapter.

The question of the curability of paresis is raised, and one leaves the argument not convinced.

Attention is called to the fact that one should weigh the difference existing between an apparent recovery in a clinical sense as against the possibility of such in an anatomical sense. Specific tissue may be replaced by connected tissue, thus producing a scar not influenced by therapy.

Many pages are devoted to the subject of tabes, showing its more frequent appearance in members of the same family, its infrequency in prostitutes, and emphasizing the abortive types of tabes, so commonly seen in institutions for the insane.

The chapter on the four reactions in differential diagnosis is instructive in detail, and emphasis is laid upon the importance of thorough clinical examination since the four reactions may not solve all the questions of diagnosis.

The pages having to do with the treatment of nervous syphilis recommend no particular form of instructions beyond the giving of mercury in some form, either by inunction or by the mouth, depending upon circumstances, such as gastric irritability, etc.

The author believes, with many other well-known observers, that early and energetic treatment should be instituted "in primary and secondary syphilis, in the hope of warding off future nervous complications." This is practically the therapeutic as well as prognostic answer to the question whether such procedure can vanish the spectre of nervous syphilis. He is inclined to be recorded, with many German observers, in the negative.

In discussing the question of prophylaxis, the author refers to printed instructions which are given to every syphilitic patient at the time of his discharge from the St. George General Hospital in Hamburg. It would be well if such printed instructions were given more universally to syphilitics attending dispensaries in all countries, since the instructions are clear, and exceedingly valuable to the patient, as well as to the public.

The attention of general syphilographers is specially called to these detailed instructions found on page 357.

The closing chapter is in the form of a brief special article upon salvarsan therapy, which the author has inserted by request. He summarizes the efficacy of this treatment by saying that salvarsan acts more quickly in some cases than mercury and iodide; that in some instance it has been more effective after mercury and iodide have failed; that in gummatous diseases of the nervous system it is specially indicated, but contraindicated where vital centres are involved. "In by far the greater number of cases, the superiority of salvarsan over mercury and iodide is not apparent."

One's impression is reading Nonne's book regarding "Syphilis and the Nervous System" is embodied in the well-known saying, "syphilis does not die, it only sleeps." He is doubtless watching the results of the newer method of treatment of organic cases by the intraspinous method, and when sufficient time elapses, it will be interesting to see whether his conservatism will be re-written. ELBERT M. SOMERS, M.D.

DEATHS.

EDWARD MINTURN ASSENHEIMER, M.D., New York City, died April 30, 1914.

O. H. BABBITT, M.D., Auburn, died 1914.

HARRY W. BLODGETT, M.D., Oswego, died March 11, 1914.

THOMAS MACKANESS LUDLOW CHRYSTIE, M.D., New York City, died May 19, 1914.

PAUL EHRHART, M.D., New York City, died April 30, 1914.

GEORGE W. HOSMER, M.D., Summit, N. J., died June 2, 1914.

HARRIE B. HOWELL, M.D., Rochester, died February 6, 1914.

JAMES G. HUNT, M.D., Utica, died May 17, 1914.

EMIL GRUENING, M.D., New York City, died May 30, 1914.

JOHN MCCROSKERY, M.D., New York City, died May 9, 1914.

EUGENE F. PEARCE, M.D., Brooklyn, died April 29, 1914.

FRANK K. ROARKE, M.D., Troy, died April 19, 1914.

WILLIAM EDMUND WEBER, M.D., New York City, died May 7, 1914.

NEW YORK STATE JOURNAL OF MEDICINE

A Journal Devoted to the Interests of the Medical Society of the State of New York

JOHN COWELL MAC EVITT, M.D., Editor

Business and Editorial Offices: 17 West 43d Street, New York, U. S. A.
Address Journals sent in Exchange to 1313 Bedford Avenue, Brooklyn, N. Y., U. S. A.

Vol. XIV. JULY, 1914 No. 7

EDITORIAL DEPARTMENT

PECULIAR SYMPTOMS FOLLOWING THE INOCULATION OF TWO ADULTS AND THREE CHILDREN WITH TYPHOID VACCINE.—DEATH OF ONE OF THE ADULTS.

THE death of a mother and the alarming symptoms of her three children following an inoculation with antityphoid vaccine have aroused in the medical and the lay mind considerable apprehension regarding the harmlessness of the results of this procedure. If antityphoid vaccination is contraindicated in some cases these particular indications should become known and the sooner the better, in order to prevent the public mind from becoming influenced against its general use for the purpose of immunization, the incalculable value of which admits of no question.

But if in our optimism we should permit a reliance upon coincidental phenomena to account for injurious or fatal results following the use of the vaccine we would certainly be lacking in a just appreciation of their important significance.

It is well known that our faith in the power of typhoid immunization is not generally shared in by other countries. They attribute to sanitation and hygiene the lessened prevalence and mortality of typhoid, which undoubtedly have a great preventive influence, but no other nation has had the lesson of experience so thoroughly impressed upon it as we had in the Spanish-American War and the concentration afterwards of our soldiers on the Mexican border. Granting all the advantages of hygiene and sanitation in the latter instance, without immunization, it is not worth disputing, that notwithstanding these preventive measures, typhoid would have made its appearance in its former percentage in the camp.

Reports of alleged untoward symptoms following typhoid vaccination should in the future lead us to a more careful examination of the subject about to be vaccinated and to a more rigid investigation of all cases of contact. Our belief in its innocuousness is not a justification for a faith so blind as to lead to careless assurance. The matter is one of most momentous importance. Deaths from typhoid following the employment of vaccine used only to modify or shorten its duration, after the disease is manifestly established, are of frequent occurrence, but up to the present time we do not know of a single authentic case when the inoculation produced typhoid or caused death. Some months ago a member of the national guard who was inoculated with antityphoid vaccine shortly afterward developed symptoms which led the attending physician to make a diagnosis of typhoid and to imply that in the absence of any other cause of infection that it was due to the vaccination. This man died after a few weeks illness and upon a post mortem examination it was revealed that his death was not due to typhoid but to cardiac disease. In regard to the death of the woman referred to in the opening paragraph the health authorities after an official

investigation decided that she died of typhoid, that the three children had typhoid, and that the cause of the infection was transmitted from the father.

A most thorough and impartial investigation should be instituted by the health authorities, or better still, by a research laboratory which would have no other interest than the establishment of the truth.

This would be, of course, the aim of the health department, but when proven that the typhoid vaccine was not in fault the public—the ever incredulous public—would still continue to think that as the vaccine used was furnished by the department its report would be one of exculpation, as the department had in advance persistently maintained that the vaccine was in no wise the cause of the illness.

So far no reports of the histories of the cases have been given by the attending physician. The following statement, incomplete as it is, made by the attending physician over the telephone to the writer serves to shed some light on the clinical symptoms.

The husband and father, a traveling salesman, returned to his home in Brooklyn from a business trip to the South. The last place he visited before being taken ill was Norfolk, Va., the point of departure to his Brooklyn home.

Some few days after his arrival, feeling indisposed he sent for his physician who diagnosed his sickness as typhoid fever, which was confirmed by the department of health. Upon learning of the nature of his illness he requested that his wife and three children be inoculated with antityphoid vaccine, which was done. At this time the mother and children to all outward appearances exhibited every evidence of being in perfect health. The wife acted as nurse to her husband and performed her household duties as well, which necessarily brought her into intimate contact with the children, showing direct exposure by contact from the father, although the attending physician was most explicit in his directions to her to observe every precaution against infection of herself and children, three in number, aged respectively eleven, six and five years.

What is truly remarkable and inexplicable is that he further stated that within a *few hours after their inoculation* there developed in all the cases chills followed by fever, the temperature ranging from 102 to 104 degrees. Within twenty-four hours an erythematous rash covered their bodies followed as the illness progressed by muscular rigidity, mental hebetude and diarrhœa. Bullæ appeared over the bodies of two of the children, severely so over that of the younger, which breaking down left pustular, foul-smelling sores. One of the children developed a temperature of 106 degrees with marked meningeal symptoms.

An examination of the spinal fluid did not disclose the presence of meningococci nor any other infectious organisms. The meningeal symptoms have disappeared and the child is now convalescing.

The alarming symptoms, their similarity and rapid appearance, following the inoculation of the three children and to a modified degree in the case of the mother and aunt, would cause one to feel that the injecting of the vaccine was the direct cause, and by inference that the vaccine was not sterile or that its administration was in some way at fault. Both of these inferences are, in our opinion, possible but not probable. Against the probability, vaccine from the same stock was used by five Brooklyn physicians in fourteen cases, each case receiving three injections with the usual reactions.

Not one of the symptoms mentioned is inconsistent with typhoid of a variant form. The four cases were decided by the health authority to be uncontrovertibly typhoid. It is but reasonable then to conclude that the mother was the agent of transmission to the children and that some constitutional dyscrasia in the children was acted upon by the vaccine; that if such be true similar condition of the blood exists in others.

It has been stated that women and children are more susceptible to the influence of the vaccine than male adults, and by others that women and children bear particularly well antityphoid vaccination.

This difference of opinion serves to confirm the impression that our knowledge in this regard is by no means definite but imperatively demands that before vaccinating we make a most careful examination of the patient, giving due consideration to sex and age, state of health, exposure to typhoid infection, the possibility of existing infection, and care in

the dosage: observing in the case of children that the latter be in accordance with the child's weight.

Of the following with our present knowledge we can feel reasonably certain, that given a healthy subject, man, woman or child who has not been exposed to typhoid infection, antityphoid vaccination is unattended by serious results; that for two, three or more years it immunizes the one vaccinated against an attack of typhoid: that the effects produced by the use of the vaccine upon a subject already the victim of typhoid are not well established: that by many it is claimed that it mitigates the severity and shortens the duration of the attack; but these claims by reason of the nature of typhoid are obviously not based on exact clinical knowledge or upon sufficient data to be taken as truths for our guidance. We believe that in the cases of women, youths, and children suffering from an attack of typhoid pursuing a mild course non-intervention would be the better policy until our knowledge becomes more exact. We are free to confess that in this opinion we are influenced solely by the five cases the subject of this article which may not in your mind appear justifiable—but they offer sufficient evidence to show that there is a wide field for investigation of the use of antityphoid vaccine in a typhoid subject.

TYPHOID VACCINE HELD BLAMELESS BY THE DEPARTMENT OF HEALTH.

THE following excerpt taken from the weekly Bulletin of the health department is intended to refute the accusation made that typhoid vaccine was responsible for the character of the illness of the five members of the Mercer family.

"On May 18th, following a consultation with another physician, the illness of the immunized patients was tentatively diagnosed as 'anaphylaxis,' a phenomenon met with following injections of antitoxic sera. By May 20th the condition of the children was alarming and another consultation was decided on. This was held on May 22d, and was participated in by Dr. Krumwiede and Dr. Nicoll of the health department research laboratory, Dr. Blatteis, pathologist of the Jewish Hospital, Brooklyn, and Dr. Sidney E. Smith, the attending physician. The clinical examination made by these physicians, subsequently confirmed by the result of laboratory investigations, showed that the children had typhoid fever, the result of infection prior to the immunizing injections.

"Although the correctness of this diagnosis has been questioned, it may be stated that the Department of Health has abundant evidence to sustain its position. The blood examination made by Dr. Blatteis on May 21st, showed a marked diminution of the white corpuscles, with a relative increase in the proportion of lymphocytes. This is characteristic of typhoid fever. In so-called 'blood poisoning' due to contaminated vaccine or to infection introduced at the point where the injection was made, just the opposite condition is found in the blood, that is, there is an increase in the number of white blood corpuscles and a relative fall in the proportion of lymphocytes.

"Furthermore, in 'blood poisoning,' cultures made from the blood frequently show the presence of the contaminating germ. In this case such blood cultures, made May 20th, remained entirely sterile.

"Moreover, the Widal test was positive even in a dilution of blood 1 to 1,000; such positive reactions are almost unknown after a single immunizing injection.

"Finally, on May 21st, as conclusive evidence of the nature of the disease, the bacteriologists of the research laboratory of the Department of Health, found that the intestinal discharge contained typhoid bacilli.

"The clinical course of the illness in Mrs. Mercer, conformed to the classical type of typhoid fever familiar to all experienced physicians, and the termination was likewise the all too-familiar one of intestinal hemorrhage, with death from shock. The cause of death as here given is taken practically verbatim from the official death certificate signed by the attending physician.

"The entire history of this case bears out the contention of the department made three weeks ago that these were all typhoid infections, and that the immunizing injections were in no way responsible."

Original Articles

THE SURGICAL TREATMENT OF EMPYEMA.*

A Study Based on 285 Cases.

By CHARLES N. DOWD, M.D.

IT may be fairly said that surgery has emerged from its anatomical stage into its physiological stage. Anatomy must be the basis of surgery and it is assumed that each surgeon has acquired and is maintaining this basis in liberal degree: but in addition to this, modern surgery tends toward the pathology and the physiology of the affected parts. This tendency leads one to conserve the strength of the patient, to appreciate what manipulation or other trauma is necessary and what is harmful and to realize what physiological processes tend toward repair and hence toward the recovery of the patient. One is thus more careful about interfering with such processes than were those surgeons whose attention was more directed toward the anatomical arrangement of the parts. This physiological tendency of surgery was particularly shown in the meeting of the American Surgical Association, which was held in this hall early in the month. Paper after paper dealt with methods of conserving the strength of the patient and of preventing procedure which retarded physiological repair or which put undue strain on the patient's powers.

Unfortunately the surgical treatment of empyema has too often been directed toward the mere accumulation of pus. The difficulty of draining pus cavities has been magnified, and many methods of accomplishing this purpose have been devised. The frequency of hidden pockets of pus has been exaggerated, and harmful explorations have sometimes been made when pneumonia and not pus pockets were the cause of the symptoms. The importance of the pneumonia of which the empyema is simply a part, has not always been appreciated. The physiology of repair has not always been understood, and the pleural surface has often received attention which should have been given to the lung compression. The differences between empyema in children and empyema in adults has not at all received the attention which it should have had.

With these conditions in mind, the author asks you to consider the surgical treatment of empyema as based on the study of 238 cases occurring in children in St. Mary's Hospital for Children, and in personal practice, and of 47 adults who have been seen in the services of his colleagues and himself in Roosevelt Hospital, in the General Memorial Hospital and in private practice. The children have been mostly between the ages of 2 and 14. Nearly all of the patients have been under the personal observation of the writer, but the histories of a few have been taken in serial order from the records of the institution in which they were treated.

The subject which your chairman has assigned is: "The Surgical Treatment of Empyema." It may be divided according to the surgical procedures into the following groups:

1. Aspiration for diagnosis.
2. Methods of pus removal.
3. Treatment of chest after thoracotomy.
4. Methods of dealing with compressed lungs, bronchial fistulæ, and other complications.

Diagnostic Aspiration.

Aspiration for diagnosis although usually very simple, may present certain difficulties. The plugging of the needle is the most common difficulty; the lumen of the needle should admit a bougie No. 4, French scale. The coagulæ which are present in most pneumococcic exudates can easily plug a smaller needle. The presence of air or gas above the exudate may also lead to a failure in the use of the exploring needle. This is particularly troublesome if the patient is lying on the sound side and the explored part of the chest is uppermost. One would hardly think that mention need be made of errors which arise from air leaks about the joints or piston of the syringe, but it is not always easy to procure a perfect syringe, and such leaks are sometimes a bar to successful aspiration.

The writer has several times seen patients whose chests had been unsuccessfully aspirated although pus was present; and more than once has had the very embarrassing experience of temporarily failing to aspirate pus from a chest in which it existed.

Aspiration is not free from danger. Dr. Hughes Dayton* has reported or referred to 25 cases in whom death or disturbing condition has followed exploratory puncture of the pleura. When one lung is incapacitated and pneumothorax is produced by puncturing the other lung a fatal result is almost inevitable.

In most instances the point of election for aspiration is in the posterior axillary line between the eighth and ninth ribs. In the small proportion of cases who have sacculated pus collections the aspiration should, of course, be made where the sacculation exists.

Methods of Pus Removal.

In most instances the pus collection should be promptly withdrawn by some form of thoracotomy. The selection of a method of thoracotomy will depend on one's conception of pathology.

* Read at the Annual Meeting of the Medical Society of the State of New York, April 30, 1914.

* Dayton: Surgery, Gyn. and Obst., Vol. XIII (1911), p. 611. Am. Jour. Med. Sci., August, 1912, p. 241.

In the above-mentioned group of 285 patients, there have been seventy-six deaths —twenty-five and six-tenths per cent. This mortality rate is lower than we would expect if all the patients had been children, but is far higher than we would expect from uncomplicated pus collections.

The records of twenty-four autopsies are available, among them the following lesions are mentioned: Pneumonia, sixteen times; pneumococcic peritonitis, five times; pneumococcic meningitis, once; pericarditis, four times; compressed lung, seven times; tuberculosis, twice; œdema of lung, once; degeneration of internal organs, six times. The latter condition would doubtless have been mentioned more often if permission for complete autopsies had been obtained on all the cases. It is thus seen that pneumonia or some form of pneumococcic inflammation was the cause of death in most of the cases. The symptoms in the fatal cases on whom autopsies were not held, did not differ from the cases here recorded. X-ray pictures of some of them indicated pneumonia.

Therefore, when the question of thoracotomy arises, we must remember that we are dealing with patients who probably have pneumonia or some form of pneumococcic inflammation in which the empyema is only an incident, and we must not let the pus accumulation seem more important than it really is.

We may remember two things:

1. Ether inhalation is not good treatment for pneumonia.

2. The drainage of an ordinary pyothorax is not a complicated operation.

With these facts in mind, we can do most of our thoracotomies under local anæsthesia. A preliminary opiate should be given. One per cent watery solution of novacaine may then be injected, usually over the eighth rib in the posterior axillary line. In most of the cases a piece of rib, one and one-quarter inches long, can be resected without material difficulty under local anæsthesia. In others, rib resection is not practicable, and an opening may be made between the ribs with the expectation of rib resection at a later time if necessary.

In a few instances general anæsthesia is necessary.

Unless the patient is a very young child it is desirable to remove a piece of rib at the primary operation. The opening thus obtained permits the escape of the abundant coagulæ which are usually present, and also permits the introduction of the finger to determine the degree of lung compression.

It is important that the patient should cough at this stage of the procedure—coughing usually expands the lung. If it fails to do so, a slight separation of adhesions with the finger, as recommended by Dr. Samuel Lloyd is desirable. If the lung expands satisfactorily at this time we need not fear lung compression,—if it does not, various measures for securing expansion may be employed, and the results may be determined by inserting the finger in the thoracotomy wound from time to time, and thus determining the position of the lung.

It would hardly seem necessary to caution against cutting below the diaphragm instead of above it, but I have seen this done by three different surgeons,—one of them the acknowledged leader of his time. In no instance was the accident serious, since the abdominal wound was closed and the thoracotomy done on the following day. The pleura reaches as far downward as the ninth rib in the axillary line, and all incisions should be made above that level. It is better to make them as high as the eighth rib in the posterior axillary line, since the diaphragm may obstruct a lower wound as the chest contracts. To avoid accident, one may insert an aspirating needle and withdraw pus,—then, detaching the syringe, the needle is left as a guide until the chest is opened.

With infants the need of conserving strength is even greater than with older children and adults. With them, empyema is a more serious disease. In one of the institutions of the city where the proportion of puny, weak children is very large, it is stated that no child under six months of age has recovered from empyema. Reporting from the Babies' Hospital, Holt* gave a mortality rate of fifty-six per cent among 154 cases below three years of age.

73% for the first year
58% " " second "
16% " " third "

In treating these very small children, it is desirable to withdraw the pus in the simplest possible way and secure a method of after treatment which does not unduly frighten or disturb them and which diminishes the likelihood of secondary infection. After trying various methods, he believes that these indications are best met by inserting a tube the size of a twenty-seven French catheter through a puncture wound between the ribs. This is secured by a rubber collar and adhesive plaster, and is connected with a long tube which extends to a bottle of sterile salt solution. The mortality rate for forty-six cases treated in this way was fifty-two per cent, while that for eighty cases treated by simple incision, or rib resection was fifty-six per cent. This difference is not great when applied to the entire group of children under three years of age, but when applied to babies under nine months, the advantage of this syphon method was more marked.

The withdrawal of large quantities of pus

* Holt, American Medicine, New Series, Vol. VIII, No. 6, p. 381, June, 1913.

by aspiration may sometimes be justified as an emergency procedure, to be followed by thoracotomy when practicable. The results reported from aspiration as a routine procedure, however, are most discouraging.

Similar discouraging reports have come of the injection of various substances into the pleural cavity.

Treatment of Chest After Thoracotomy.

A flanged rubber spool (Wilson's) maintains a very satisfactory drainage opening after thoracotomy.

Tubes which project far into the chest cavity, are to be avoided,—they cause unnecessary irritation.

I have used many forms of suction apparatus, but have not received much help from them. If the lung expands at the time of operation, suction appliances are not needed. If the lung has not expanded, and is bound down by dense adhesions, I have never seen evidence that the suction materially aided the expansion. It must exert some influence, however, and should be used in such instances.

It has the advantage of carrying the pus out of the dressing into a receptacle. One must use care that the diaphragm does not press against and occlude the lumen of the tube.

Blowing exercises should be frequently and persistently used. By blowing through a tube, water may be forced from one large bottle into another, or, it may be forced into an upright tube, or, a spirometer may be continually tested, or, various forms of rubber toys may be inflated. Anyone who has felt a compressed lung expand with the effort of coughing will realize the great power of forced expiration. It is probably the greatest power which we have for promoting lung expansion.

The surgeon should, if possible, insert the finger into the chest from time to time, so as to know what the conditions are.

X-ray pictures should also be taken if possible; they may show the presence of pneumonia, or tuberculosis, or an empyema on the other side of the chest.

One may be cautioned against expecting undrained pockets in same side of chest as the empyema,—they seldom exist. Dr. William P. Northrup, who has done a great many autopsies at the New York Foundling Asylum, states that he never found pus in a drained empyema cavity even when the drainage opening was far above the diaphragm.

As previously stated, harm has often been done by too vigorous search for hidden pockets of pus in empyema when pneumonia is the real cause of the persistent symptoms.

In suitably selected cases, Beck's paste may surely be used with advantage, it hastens the healing of well drained sinuses. If, however, the lung is extremely compressed and the chest wall has not contracted to a corresponding degree, an irregular cavity exists. The writer has not seen such cavities do well under the use of the paste. It has collected in the dependent locations and acted as a foreign body.

Method of Dealing With Compressed Lung, Bronchial Fistulæ and Other Complications.

Next to pneumonia, compressed lung is the most serious accompaniment of empyema. The condition exists in all cases of severe empyema. On the withdrawal of pus forced coughing usually expands the lung, as explained above. In many of those patients in whom immediate expansion does not occur, a later and slower expansion comes with the aid of forcible expiration and the pull of the adhesions which progressively form between the pulmonary pleura and the adjoining costal pleura.

There will, however, remain a small proportion of cases in whom the lung remains compressed after months of treatment.

There were nineteen such patients in this series of 285 cases.

Thoracotomy conjoined with decortication of the lung gives the most successful method of dealing with these cases. The details of fifteen patients so treated have been given in a previous paper,* and the writer has operated upon four additional cases. One, an adult, failed to secure healing and died from exhaustion,—the other three are still under treatment, one having a bronchial fistula.

This procedure, which has hardly received the consideration which it deserves, has many advantages and many limitations.

Eleven of these patients have secured good healing and are enjoying good health. Two others have good health but have small thoracic sinuses. One, who is probably tubercular, has a bronchial fistula, and one is making an excellent recovery from a recent operation. Two are doing reasonably well. Two have died.

The use of the lung on the affected side is much limited, but this does not seem to be a matter of great importance, since the remaining lung capacity is sufficient for all ordinary needs,—the spine is regularly erect and the carriage is good.

When the lung has not been too much compressed its local decortication tends to increase its permanent expansion. When the compression is extreme and of long standing, permanent expansion cannot be expected. I have had the opportunity of operating on three of these patients at periods long after the primary decortication and have been disappointed to find that the primary expansion had not been maintained, although the sinus had been closed for a time by the sinking in of the chest wall and the thickening of the costal pleura.

* Persistent Thoracic Sinus following Empyema. Jour. A. M. A. October 16, 1909. Vol. LIII., p. 1281.

The procedure is important and I will repeat a description of its technique:

Under ether anæsthesia an incision is made about the sinus opening and three or four inches of the two adjacent ribs are resected. This gives access to the sinus so that its boundaries can be determined,—it usually extends to the apex of the pleural cavity. It is an advantage to carry the incision upward in the anterior axillary line since this gives only slight hemorrhage and disturbs important structures to a minimum degree. It is usually carried to the third rib and the ribs and attached pleura are divided by strong, bone-cutting forceps. One-half inch is removed from the second or third rib and four to six inches from the tenth rib and corresponding pieces from the intermediate ribs. Sometimes much less is taken away. With suitable retraction, an excellent view of the sinus is thus obtained,—a longitudinal incision is then made through the upper part of the sinus wall until the lung is reached.

At this stage of the procedure the patient is allowed so nearly to emerge from the anesthesia that he will cough, when the lung usually bulges into the incision. The membrane is then separated from its surface over as large an area as is practicable and removed. In most of these cases a strip two or three inches long and from one to two and one-half inches wide has been removed. This represents somewhat more than the pulmonary portion of the sinus lining. The chest wall was nearly brought together by strong sutures and a drain or suction tube inserted in the unclosed part.

A fistulous opening between a bronchus and a pleural sinus may be a very disturbing complication. These fistulæ sometimes close spontaneously. The thoracoplasty and lung decortication may permit the walls of the sinus to come together as the remainder of the lung expands. In the effort to promote this one may follow Lloyd's* suggestion and make an extensive separation of the adhesions which bind the lung to the chest wall. One may also follow Gerster's† suggestion and resect the ribs beneath the scapula and permit the subscapularis muscle supported by the scapula to lie against the compressed lung.

Discussion.

Robert M. Dawbarn, New York City: "I have no word of criticism of this most valuable paper. Instead I rise to call attention to an improvement in technique of handling those quite frequent cases, alike of children and adults, where a portion of one of the lower ribs has, months before, been excised, and the pus continues freely to escape thence. The thickened pleura binds down the lung beyond possibility of escape by lung gymnastics. Here we have a rigid-walled cavity, impossible of cure unless either (a) we collapse the outer wall, by a row of Estländer rib-excisions down the chest; or else (b) in addition we do a pulmonary decortication. Cases in this desperate condition are far from rare in the experience of every hospital surgeon. Either of the two operations just named would very probably kill an exhausted or badly weakened patient. But there is a third method, far too seldom used. This consists in making through the pleura binding down the lung, vertically, from top to bottom, from two to four or so very long cuts, which even while you look at them can be seen actually to widen from lung expansion, which expansion goes on rapidly thereafter to a cure; though occasionally, especially in adults, requiring one or more repetitions of this cutting before the lung once more entirely fills its chest cavity.

"It is to call your attention to a new implement which I have called a 'pleura knife,' and which I here hand you for inspection, that I chiefly rise today. Let me apologize, for, as a rule, I consider new instruments a nuisance and an infliction upon our patience! But just this once let me beg you for a trial, and you will feel, with me, that you have gained a friend where one was badly lacking. For, if we do not use this to make the long cuts down the collapsed lung as just mentioned, we must use (as I have just a few times), a long bladed amputating knife. When its entire blade has disappeared within the chest, and one is cutting, depending upon his lightness and evenness of touch to cut just deeply enough, and not too much so, with risk of fatal pulmonary hemorrhage—I tell you it brings the sweat! But since I have employed this tool shown you here I have had no such reason for anxiety.

"As you see, the depth to which one may cut is determined by the crossbar at the back of the blade; and there are three sizes. This size, the medium one of the three, has as you see a very narrow blade; by it you could cut to the depth of, say, an ordinary cardboard book-cover's thickness. By testing the pleural thickness upon the lung with an ordinary scalpel through the old opening where the rib was excised for drainage, one can quickly determine which of the three pleural knives fits any given case.

"The length of blade is only about one and one-half inches; then comes a long, slender shank, and the handle end is a foot away. This shank should be made untempered enough to permit bending to any angle the surgeon may wish. Ermold & Sons are the makers." The after care consists in lightly packing the pleural cavity with iodoform gauze.

* Samuel Lloyd. Contributions to Science of Medicine and Surgery. Rora Festschrift. Post Grad. Med. School, N. Y., 1908.

† Gerster. Annals of Surgery. October 13. Vol. LVIII, p. 568.

ANTITYPHOID VACCINATION IN CHILDHOOD.*

By MAJOR F. F. RUSSELL,

U. S. A. Medical Corps, Washington.

ANTITYPHOID vaccination was introduced into the army in 1909, and in that year we vaccinated a few children, and have been vaccinating more and more each year since. The results have been very satisfactory. Typhoid fever is a disease of young persons. Of one thousand deaths from typhoid fever, collected from the registration area of the United States, one-third occurred in persons under twenty years of age, and one-fifth in those under fifteen years. Another reason why the results of antityphoid vaccination were so satisfactory was that children stood vaccination well, and the reactions were few. We have collected statistics on the temperature reactions in children all over the United States, the children in army posts and in the families of officers, which included both the general and the local reaction. We have classified the reactions into two classes: Those that were troublesome and those that were not. The troublesome ones include the moderate and the severe reactions. Less than two per cent of the children showed a temperature reaction of 103° F. or more. As a rule the children did not have to remain home from school or indoors. Sometimes there was a slight fever in these children who were vaccinated, but they were unaware of it. For these reasons vaccination among young people is increasing rapidly.

We never take the risk of vaccinating a sick child, that is, one seriously ill; a trivial illness is not a contraindication. But here one must use his discretion and be governed by the degree of illness and by the immediate danger of typhoid.

Among the children vaccinated no harmful effects had been reported and there had been no case of typhoid fever that could be learned of. It was not possible to follow up the children as closely as the men in the army, but I think that if there had been a case of typhoid fever in a child who had been vaccinated we would have heard of it. Furthermore, it was true that many of them have been exposed to the disease.

Re-vaccination should be performed more frequently in children than in adults.

The dose is regulated according to the weight of the child, the rule being, for instance, that if the weight of the child was one-third that of an adult, the dose of vaccine should be one-third of that given to an adult. It is better to give a little more rather than a little less in proportion to the weight. If the child gains rapidly in weight it may be advisable to repeat the vaccination. The duration of immunity is thought to be about three years; as yet there has been no falling off in the immunity of the men in the army. In the antityphoid vaccination it is a good plan to follow the method used in smallpox, that is, vaccinate once in infancy, once in childhood, once in youth and once in adult life. This would probably give good protection. The results of antityphoid vaccination in the army are most convincing as to the value of this measure. In the year 1913, in the entire army of 90,000 men who had been vaccinated there were only three cases of typhoid fever and no fatalities. One of these occurred in China, and the man was not vaccinated, and the other two cases occurred in new recruits who came down with the disease before the vaccination was completed.

There is one other way of measuring the efficiency of any procedure, and that is by the "constantly non-effective rate." According to this, before the introduction of antityphoid vaccination one man out of every thousand was sick every day in the year; last year only one-three-thousandth of a man was sick every day in the year. This measure of efficiency showed that antityphoid vaccination saves the time of the soldier and keeps him out of the hospital and fit for duty. A sick man means not only that one man's time was lost, but that it takes the time of two others to care for him. The same is true of any school, or institution, and in the face of their present knowledge no schools or institutions should run the risk of an epidemic of typhoid fever when it can be prevented without risk.

The vaccination should be given subcutaneously, and never deep into the muscles. It is desirable to have a slow absorption, which one gets in the loose subcutaneous tissue. With a deep injection one is apt to have a severe reaction which will arouse an opposition to this measure, which is unnecessary. The second dose should not be given at the site of the first, but a new site should be chosen. The severe reaction following a deep injection shows that the absorption was too rapid. The second injection is given after an interval of ten days in the army; in civil life we use weekly intervals, choosing Saturday afternoon so that, should any reaction occur, the subject of the vaccination can lay off over Sunday.

A fear has been expressed that antityphoid vaccination may light up a latent tuberculosis. Our statistics show that not only has the steady decrease in the number of cases of tuberculosis in the army been maintained but that the decrease in the number of cases has been more rapid since the introduction of compulsory vaccination. This was no doubt due to the improved sanitary conditions and the greater care exercised in examining recruits. In the annals of medicine there is only one campaign that can be compared to this one and that is the practical extermination of smallpox by vaccination.

* Read at the Annual Meeting of the Medical Society of the State of New York, April 29, 1914.

Discussion.

Dr. Morris L. Ogan, New York: The Health Department has used the typhoid immunization culture since the beginning of 1913, and during that time has injected some 2,000 persons with complete immunity. It is well known that typhoid fever is a disease of youth and childhood. We have had some experience with children under twelve years of age. In a series of cases numbering 1,491, to which Osler refers, one-half occurred between the ages of twenty and thirty years. In our experience we have found typhoid fever occurring oftener between fifteen and twenty years and we also had a larger proportion of cases under fifteen years than did Osler. The statistics of the Health Department show that the disease is at least as liable to attack children as adults. In a series of 1,700 non-immunized children 2.8 per cent contracted the disease, while in a series of 5,000 adults 2.1 per cent contracted the disease, thus it would seem that it was easier for children to contract typhoid fever than for adults. One-quarter of the population of Greater New York is composed of children under twelve years of age and they furnish one-quarter of the cases of typhoid fever. Physicians have been advising against vaccination and giving as their reason that children are in a measure insusceptible to typhoid fever. This idea should be combatted. This impression has probably gained a foothold because typhoid fever in children has frequently not been diagnosed properly.

Of 318 exposed children who were immunized but four contracted typhoid fever and these were mild cases without any deaths. One case ran a course of seventeen days and another of eleven days after one injection. So it would seem that in the actual presence of the disease immunization was not only justifiable but advisable.

As to the severity of the reactions, we have not been able to follow them as closely as one could in private practice, often not seeing the case the day after vaccination, but only on the revisit for further immunization. About seventy-three per cent of all the reactions were very mild, only a slightly sore arm and a general malaise. We have found that the reactions are apt to be more severe during the first six years than during the last six years. We may have given an overdose. We have been giving the children more than the average dose in proportion to their weight. We have had really severe reactions in only five cases and one of these was actually coming down with the disease. Another severe reaction had occurred in a child one year old. In only one instance did the temperature reach 103° F.

In conclusion it may be said that our experience is extremely favorable and we find with others that children bear antityphoid immunization better than adults.

Dr. Lillian H. South, Bowling Green, Ky.: In my work as State Bacteriologist of Kentucky, I have distributed 15,000 doses of antityphoid vaccine. Owing to the flood we have had several severe epidemics. In one town of one thousand inhabitants we had five hundred cases of typhoid fever. Our inspectors are all immunized. We have built the Kentucky sanitary toilet and stamped out the disease. The prevalence of typhoid fever has been due to bad sanitary conditions in the rural districts and the great factor in eliminating the disease has been the sanitary toilet, which is a miniature septic tank. The only attention it needs is a bucket of water once a week.

In giving the immunizing dose of vaccine we inject it into the abdomen subcutaneously. If there is a reaction we postpone the administration of the second dose for fifteen days. Then again we give one-half the dose the first time and repeat at the end of five days. A small preliminary dose to see how the organism will react is recommended by some. The vaccine has been used in the treatment of fifteen cases and reported as very successful.

When the physicians know that the vaccine comes from the Government they are willing to tell the people about it and the people are willing and glad to have it used. In Kentucky we do not have to contend with antivaccinationists and antivivisectionists as you do. The people are willing to do anything to prevent or cure typhoid fever. We realize however, that vaccination must be accompanied by instruction in other sanitary precautions.

If any one would like to know about the sanitary toilet the State Board of Health of Kentucky will be glad to send a bulletin. We wish to distribute information about them as they are not only instrumental in conquering typhoid fever, but dysentery and hookworm as well.

Dr. Godfrey R. Pisek, of New York City: The interest of the laity has been aroused in the problem of typhoid prevention and we are frequently consulted as to the efficacy of the procedure and its applicability to the children of the family. Children, because of their dependence on milk as a good part of their food, and because of their imprudence in drinking water from whatever source while on their vacations in the country, are particularly susceptible.

My experience thus far has been confined to inoculations of children of the school age (all over seven years) and while I believe the dosage based on weight is an excellent one, I have advised a dosage of one-half the adult dose for the healthy, vigorous boy or girl.

The preventative inoculation should be made before sending the child to boarding school; before the children leave for their summer vacation in a rural district, for if a period of travel is planned, particularly on the continent of Europe.

The figures just given by Dr. Ogan, of the

New York City Health Board, have been of much interest to me, and I believe this is the first time they have been made public. The department worked under difficulties, and encountered opposition from physicians who were evidently not acquainted with the figures Major Russell gave us. That no untoward results appeared, in spite of tenement house conditions and limited facilities for the close observation of the cases, further strengthens the view as to the harmlessness of the procedure.

I am sure that if the lesson we have learned to-day were known by physicians in general, Major Russell would have no opposition in his efforts to stamp out typhoid, but on the contrary would have all the doctors holding up his hands in this beneficent work.

Dr. Walter Lester Carr, New York City, stated that in his experience in older children, boys at boarding school, etc., the dosage is relatively greater than mentioned, and to strong boys he often gives full dosage with very little reaction. He advised a general antityphoid vaccination for children at school, traveling or in any manner exposed to typhoid infection.

He stated that physicians are now more carefully diagnosing cases of typhoid fever in childhood, and this may account for the relatively greater proportion of cases reported by the Board of Health of New York.

Major Russell, in closing: I am glad that Dr. Ogan spoke of immunity in contacts. We vaccinate against all contact and have seen no bad effects. One occasionally has trouble with those having severe reactions and one way to get around this is to give small doses and give them more frequently. Instead of giving the full dose and repeating at the end of ten days, give one-half the dose and repeat in five or six days. This keeps the patient just under the clinical reaction.

THE SURGERY OF ACUTE SUPPURATIVE SPREADING INFECTIONS OF THE FINGERS AND HANDS.*

By WILLIAM B. BRINSMADE, M.D.,
BROOKLYN, N. Y.

BLOOD poisoning, as it is known to the laity, following injury to the fingers and hands, is one of the very common conditions brought to us for treatment. Very few men who lead an active life escape some sort of infection. We ought to realize that much can be done in the line of prevention, and that certain accepted definite methods of treatment give better results than any other method.

The gravity of an infection of the hand depends on five factors: 1st. The variety of the bacteria introduced into the tissues. 2d. The dose. 3d. The resistance of the individual. 4th. The particular tissue affected, and 5th, the method of treatment first instituted.

The infections due to streptococcic and staphylococcic origin are the forms which most concern us. The amount of the dose varies with the nature of the wound or trauma and the virulence of the strain. The resistance of the individual will often determine the gravity of the disease. The man worn out with hard labor or mental strain bears infection less well than the fresh and rugged individual. It has been our observation also, that the habitual hard drinker bears infection badly. The most serious cases we have seen have occurred in the tired surgeon, worn out by days and nights of hard work and responsibility, who receives perhaps, a penetrating wound from a needle or scalpel which has just been contaminated with bacteria. The needle may penetrate to the deep lymphatics and give no symptoms of immediate moment; after such an injury he finishes his day's work and retires unconscious that there is already in his circulation a deadly poison. Twelve or fourteen hours after the injury he wakes with a rigor, a throbbing finger and headache. On examination he finds the finger swollen and the first faint streaks of red lymphatics beginning to show, and realizes that there is discomfort and pain in every movement. This is the evidence of a severe toxemia. He sends for the nearest surgeon; a blood culture is taken which shows a pure culture of streptococcus, and the patient is facing a situation which may be the last which he will ever have to face. This, of course, is the most serious variety of the disease. We have had under our care at one time three physicians and three nurses all with spreading infections of the hands and fingers, which seems to show how hazardous a profession we follow. Spreading infections of the hands must be considered with the point of origin of the infection and the anatomy of the part always in mind. The time is long past when one can discuss by what routes the infection travels. We know that it manifests itself in three different forms: lymphangitis, tenosynovitis, and abscesses in the fascial spaces. We know also that any one of these forms may progress so as to involve the tissues and produce either one or both of the other forms. We know also that there is a deep set of lymphatics accompanying the arteries, and that a penetrating instrument may set up its train of symptoms primarily in these deep lymphatics. Such an infection must always be regarded as a serious affair and the keenest judgment used as to its treatment. There is perhaps no class of cases in which neglect does so much damage and in which meddlesome and misdirected surgery does so much harm.

The laboring man with a family dependent upon him for support, is often the victim of

* Read at the Annual Meeting of the Medical Society of the State of New York, April 30, 1914.

this affliction. The initial line of treatment undertaken in the graver cases will determine whether he is to be restored to the community and his family as an asset or liability; whether he is to be a producer, or whether he will degenerate into the class of men who sell lead pencils on the street corner and chop tickets in the subway. Who is there of us who cannot recall a valuable life destroyed, a limb lost, or a patient with a useless arm and hand due to this dread disease? And yet how little has been written on this subject and how seldom is it discussed. We spend hours discussing the proper size of a stoma for a gastro-enterostomy and days over the best method of repairing the perineum, but touch very lightly on this subject of daily importance.

Under what obligations are we then, to Kanavel of Chicago and Vosburgh of New York, for bringing this matter before us on a rational basis?

Is it not true that these cases are neglected in the hospitals and dispensaries? They are often left to the junior officer, who, inexperienced as he is apt to be, is left alone at the end of the hour to carry out an important procedure without an anæsthetic on a man suffering great pain. I know of nothing which takes the courage out of a man so completely as a few drops of pus buried in the tissues of the fingers or hands. The same condition exists, of course, in the case of the busy practitioner who is called upon to take these cases. Even after they have reached the hospital ward they are apt to be side-tracked in favor of more interesting and cleaner work. Nobody wants these cases in his ward, and yet, the judgment and skill of the greatest surgeon can probably accomplish more for the community in a grave case of this nature, than the same judgment and skill can accomplish in removing an advanced cancer of the breast, or the prostate gland in a man whose days are already numbered.

Can the nature of the infection and the location of the pus be determined early? It does not require great experience to make an accurate diagnosis in these cases, but it does require enough acumen to tell the difference between edema and induration, and the powers of observation that should belong to every physician. The importance of this determination is seen when we realize that each form of the disease calls for its own method of treatment, and each collection of pus for its own particular incision.

I desire to quote as follows from Kanavel's remarkable book: "There are certain facts which should be remembered. 1. The location of the greatest swelling does not indicate the position of the pus. The excessive swelling comes in those areas where there is the largest amount of loose cellular tissue, that is, upon the dorsum, while in nine cases out of ten the pus is on the flexor surface.

"2. The site of the greatest tenderness is of marked importance in the location of pus.

"3. The three types of infection, that is lymphangitis, tenosynovitis and fascial space infection, in the majority of cases are distinct processes, one type alone being present in a given case. At times the types may be combined.

"4. The treatment of the three types is essentially different and the gravest of errors will be made if they are not differentiated, since their treatment is diametrically opposed."

Our practice when we first see these cases, and an anatomical diagnosis cannot be made, is to cover the point of injury with a coat of tincture of iodine, put the patient to bed, give a saline cathartic, encase the limb on a splint in a generous, hot, moist, antiseptic dressing so arranged that the hot moisture can be reapplied frequently. We generally use boracic acid in saturated solution. The limb is again examined in six hours, with the possible involvement of a tendon sheath always in mind. Many of the cases thus treated are greatly improved in twelve hours and practically well in thirty-six hours. House officers are warned against squeezing and manipulation of the swollen tissues, and directed to fix their entire attention upon what they are doing while making an examination, so that no part will be palpated more than is necessary to make a diagnosis. While due regard is paid to the pulse and temperature, we are not able to determine the spread or subsidence of the disease by their changes.

The first sign of a tenosynovitis is the flexion of the finger and pain at its base on extension. This is followed by increasing exquisite tenderness over the course of the sheath. It may be several days after the injury before the tendon is involved, the pain and tenderness increasing until the sheath ruptures, when it subsides and the patient is relieved. As soon as one is able to make a satisfactory diagnosis of tenosynovitis, operation should be undertaken. Every hour is of importance. In our experience when suppuration of the tendon sheath is once started, the tendon goes unless the sheath is opened and drained promptly, and no amount of external treatment is of the slightest avail to stop it.

Our practice is to give the patient ether and make a deliberate operation, with all the assistance necessary. We use the Esmach bandage and make a large incision at the side of the finger so as not to involve the artery or nerve. Incision should never go through the pulp of the finger. The tendon sheath is isolated in as dry a field as we are able to procure; it is then opened by one or more incisions, and the pus evacuated. Sufficient

drainage is applied to keep the edges of the wound apart. * * * We use either rubber tissue or gauze saturated with vaseline. The hand is then put in a hot bath for several hours, and then put back on the splint with large, moist gauze dressing.

Abscesses in the fascial spaces are generally the result of the infectious process starting in the fingers and spreading upward. Kanavel has worked out, so that he who runs may read, the course which infection is most apt to follow. He has traced this out for each finger and the thumb, by injections and dissections. A sort of pathfinder guide-book to the cesspools where pus is most apt to collect. The pus accumulates in these spaces until they are over-full, and then begins to work its way along lines of least resistance; these spaces must be freely opened with the anatomy of the hand always in mind, as soon as the diagnosis of pus is made, otherwise damage to surrounding tissues is sure to follow. We have used Kanavel's guide for several years and have been greatly helped by it.

Bread and milk and flaxseed poultices and carbolic acid are mentioned but to be condemned. The profession seems to have wandered after strange gods for help in these infections. Bier's hyperemia, suction cups, polyvalent and autogenous vaccine are adjuvants of value but must not be substituted for the rational anatomical treatment. Above all I would condemn the osteopathic massage which has wrought such havoc in a few cases that have come under my care.

It is often difficult to determine what to do in a given case of lymphangitis. We have adopted the plan of using hot moist dressings and immobilizing the limb in an elevated position, after treating the original point of infection as indicated. In former times we did much damage by ill-advised and so-called prophylactic incisions. These should never be used. As soon as the presence of pus is diagnosed a deliberate operation is undertaken, under ether, making a liberal incision along anatomical lines to the place where we have learned pus is most apt to collect. In addition to the supportive treatment, we have come to place great reliance on seeping the patient with fluids both by rectum and by hypodermoclysis.

What can be done in the way of preventing infection at the operating table? By a proper system of handling instruments and the training of the assistants. I would suggest to my brothers in the profession and to nurses, that the instant they receive an injury which breaks the skin, whether it be from the stab of a needle or the prick of a safety pin, they should endeavor to cause it to bleed freely, and after the bleeding has ceased paint the injured point with tincture of iodine.

The foreman of every group of workmen should have some knowledge of first aid and insist that every injury, no matter how slight, be reported to him immediately.

No one who is working along these lines, or who is preparing to express his views on the subject of hand infections, should fail to acknowledge the very valuable work of Kanavel.

Discussion.

Robert M. Dawbarn, New York City: "This is a badly-needed, a most timely and welcome paper. I heartily wish that I could discuss sundry points admirably and forcibly stated; but in my few minutes will rather turn to that aspect of these infections wherein the patient is the operator himself who becomes a victim. Not a surgeon here present but has suffered more or less from this cause. We have lost dear friends thus, too. It is the reason why our occupation is almost at the foot of the list as to chance of longevity. Can we do nothing to better this condition of things? To be sure, a good rubber glove wipes off the poison as a rule; but not invariably so, as I have reason to know, having lost an assistant years ago from a needle-puncture through the glove—the patient, a young tough, wincing while having a torn lip sutured, the needle entering the surgeon's finger-tip. Syphilis resulted, the chancre appearing at that spot three weeks later on. And the patient died from gummata of the brain years later. He had supposed himself cured, and was lecturing on anatomy to a class, when, without warning, his memory left him and he did not even know his own name!

"It does seem to me that operators could prevent infection by (a) beginning a vigorous out-stripping of the puncture without loss even of a second, and (b) by asking an assistant to deepen the puncture by instant use of a scalpel-point, thus allowing a freer escape of poisoned blood.

"It is comparatively useless to suck the little wound. That means only a negative atmospheric pressure of fifteen pounds per inch. But even the most trifling needle-puncture can be made to exude blood for several minutes by stripping. I have at times been dismayed to watch the leisurely movements of friends or assistants when thus accidentally wounded. One might suppose they thought the poison would remain quite a while in the finger before beginning its journey back to the heart! Let us turn to the facts of psysiology. A blood disc requires, to pass from the heart to the finger-tips and back again, sixteen seconds. Assume that the outward journey, that in the arteries and arterioles, is far the faster—probably six seconds; and allow ten seconds for the return trip from the puncture back to the heart. This cannot be far wrong. Upon this basis it is certainly allowing a proportionately large amount of time to assume

that within *three seconds* after microbes have entered the blood current at the finger-end they will be already in the vessels of the hand, and beyond hope from help by any means of prevention except a very prompt cording of the upper arm followed by renewed stripping. Except, however, that when, as fortunately appears often to be the case, the poison from stickiness or other cause does not instantly find itself free to be thrust along in the victim's blood, we can by prompt stripping prevent its ever leaving that finger.

In two other ways the vigorous milking does good. Its irritant action upon the vasotonic nerves soon causes noticeable contraction—a visible pallor of that digit, not wholly to be accounted for by loss of blood, for we see it after a few minutes of stripping even when the puncture is but a trifling one. Since this contraction also includes the veins, there is necessarily less volume of blood to sweep along with it our entrant enemies. And again, as an obvious consequence of the traumatism inflicted, plus the prolonged centrifugal massage, phagocytic armies are inevitably hurried to the spot by that curiously friendly provision of nature, thus protecting or trying to protect our lives; and these little guerilla warriors in their millions attack any microbic enemies that may conceivably yet remain in the flesh.

"In conclusion, a dressing of absorbent cotton or gauze soaked in alcohol, held in place by a rubber finger-cot, is perhaps our best after-treatment for this special peril of our profession."

THE CAUSES AND TREATMENT OF ECZEMA IN INFANCY AND CHILDHOOD.*

By ROWLAND G. FREEMAN, M.D.,
NEW YORK CITY.

ECZEMA, being a disease of the skin, might seem to be a disease which in a city like this abounding in specialists, should always be treated by a dermatologist. This disease, however, occurring in infancy needs, I believe, a pediatrician more than a dermatologist, for while the applications to the skin are important, in most cases the regulation of the diet and the daily regime are far more important than the local applications.

It is not my intention in the following paper to attempt to cover the whole subject of eczema in infancy but to consider certain types which one frequently meets with in practice. We meet with acute eczema and chronic eczema; eczema of internal origin and eczema of external origin, but under good surroundings at least eczema of external origin without internal derangement is rare.

Eczema is one of the common diseases which the pediatrician is called upon to treat and is often considered one of the most resistant to treatment. There is also a popular idea, in which some members of the medical profession sympathize, that the cure of eczema may be followed by sudden death, and this may well be the case if an attempt is made to cure eczema of internal origin by external applications only. In a recent number of the *British Journal of Children's Diseases* a number of cases of eczema, the cure of which was followed by death, have been reported. This report, however, deals only with the local treatment of this condition, no mention being made of internal treatment.

The eczema of infancy follows many types and may be acute or chronic. Acute eczema not infrequently develops during the first weeks of life in children fed at breasts which produce much more milk than is required for the nourishment of the child. They give often a fairly typical history. These babies may be gaining from ten ounces to a pound a week and are having from five to six movements a day which while yellow contain mucus and curds. Suddenly the skin of the face and body becomes red and soon assumes the typical dry scaly appearance of eczema. On weighing the baby before and after nursing it is found that the child is getting much more food than it is entitled to, while an examination of the breast milk shows a normal or rich quality. These babies are readily cured by reducing the time of nursing so as to limit the baby to the proper number of ounces for its age.

Illustrative cases of this condition are as follows:

A baby four weeks old, weighing eight pounds at birth and at one week, now weighing eleven pounds or a gain of one pound a week for the three weeks, broke out in a general eczema involving the face, scalp and body, It was having about six movements a day which were yellow and curdy with mucus, and was getting from three to seven ounces of milk at a nursing. The milk on analysis contained about a normal amount of fat, sugar and proteid. The nursings were cut down to three ounces every three hours and Lassar's paste was applied to the skin. In six days the rash was a little better; in eleven days the movements were reduced to two a day and the baby was again practically well. The urine in this case showed no abnormality.

Another child fed by a wet nurse was two weeks old; it had gained one pound during the second week, at the end of which time it was found one morning to have an eczematous rash all over its body. It was having six

* Read at the Annual Meeting of the Medical Society of the State of New York, April 28, 1914.

movements a day, yellow with curds and mucus, and had gained nine ounces in two days. The feedings were cut down to three and a half ounces. The wet nurse was dismissed and the mother's breasts used with accessory feedings. Lassar's paste was used on the body and a rapid recovery ensued.

Most eczema in infancy and childhood, if actively treated when it first appears, can be controlled as readily as these two cases.

Many cases of eczema in older children, particularly those of long standing, are more difficult to treat, especially if on inquiry it is found that the child has been on a normal amount of a well-balanced ration. In such cases considerable information may be obtained by a careful analysis of the urine directed particularly to the detection of marked acidity, to the presence of acetone and diacetic acid or evidence of intestinal intoxication as shown by the presence in the urine of indican and phenol.

If the tongue is coated efforts to improve the digestion so as to give it a normal appearance should be undertaken, while if the movements show irregularities or any elements of the food are present in the stools in abnormally large amount an excellent clue is furnished for dietary modification.

Local sources of external irritation must of course be removed, especially pediculi capitus, plugs of wax or inflammation of the ears, adenoid obstruction, or the irritation from an adherent foreskin shutting in decomposing smegma.

While the removal of these external sources or irritation may hasten the cure, the internal derangement, usually of the gastro-intestinal canal, is of far more importance. Evidences of such disorders may be apparent in a heavily coated tongue, an offensive putrid, sour or acetone odor to the breath, or in a distended abdomen and a history of hiccough or belching of gas, or in the passing of considerable gas from the intestine. The stools also furnish frequently an important clue, an analysis showing some part of the food undigested while constipation or diarrhea should be corrected. The putrid stool indicating proteid decomposition, the sour stool indicating carbohydrate disorder or the ammoniacal urine indicating too much fat in the food, should be noted and efforts directed to their correction instituted. In addition the study of the urine, as indicated above, will aid in the determination of the character of the disorder, and its correction.

The types of eczema vary. Usually there is a seborrheic eczema of the scalp, often an eczema of the cheeks, or in the fold behind the ears. The neck may be involved or the parts under the diaper irritated by the acidity or alkalinity of the urine or stools. In other cases isolated areas persist for years—patches on the back of the hands or wrist or on the legs or buttocks.

The treatment of these cases must begin with the removal of the external sources of irritation and a complete study of the internal disorder to ascertain in what respect the diet is in error or in what way the overworked digestive organs may be relieved. The urine may furnish information by its concentration that too little water is taken. Its excessive acidity or an acidosis as shown by the presence of acetone or diacetic acid may call for the use of saline laxatives and alkalies, or an intestinal intoxication as shown by the presence of indican and phenol may indicate a putrefactive process in the intestine which may often be relieved by the administration of lactobacillary culture. Excess of fat or carbohydrate in the stools should direct attention to the reduction of these elements in the food.

In many cases the trouble is, as in the cases mentioned above, too much food. In others a badly balanced ration; in others some irritating food such as eggs, oatmeal or stewed fruit, or cake, candy or preserved fruits or jam or marmalade. In these cases we have one of the most important uses for caloric feeding. An estimate of the amount of food required to properly support life should be made and this should, if possible, be given in a well-balanced mixed, digestible diet. There are exceptional cases where a poorer but more easily digested food may be given, the calories being made up largely of sugars as in malt soup. If such foods are resorted to they should be used only temporarily until the condition is under control.

The external treatment we must learn from the dermatologist and most of my resources for external treatment I have gotten from Dr. George W. Crary. One fact I have learned from experience and that is that in order to get the most prompt result the application must be kept in constant contact with the diseased skin. For facial eczema a mask should be worn, while on the limbs the application should be covered by lint and bound in place. Lassar's paste made from one part zinc oxide, one part starch and two parts vaseline is altogether the most useful application for the skin, especially of the face. It may be rendered somewhat antiseptic by the addition of two per cent of resorcin or eurosal. For the dry, chronic eczematous patches on the body or limbs of babies I find one part tar ointment to seven parts Lassar paste most useful. For the scalp in some cases a diluted sulphur ointment is useful.

I will narrate a few cases in which these methods were used. A child seven months old, fed on normal milk modifications, at times on mixed milk dilutions, at other times top milk modifications, had suffered from eczema since it was one month old. It weighed four-

teen pounds, was well-developed and normal. Its face was red and oozing in places, it had thick dry patches on its knees and shins and involvement of the parts under the diaper. In order to nourish the child, at the same time relieving its digestive process, malt soup was ordered, rhubarb and soda given, and Lassar's paste applied, the parts being bathed with two per cent resorcin solution night and morning. In eight days the skin was much better and the child had gained a pound. In twelve days the skin was well. Although rough places occasionally appeared they readily disappeared on treatment and no tendency to eczema has recently shown itself.

A boy four years old had developed eczema during his first year and had been troubled with it ever since. He had a coated tongue, was nervous, constipated and had recently had a cold and bronchitis. For three weeks he had been on the following diet:

Breakfast: Apple sauce, egg, milk and malt soup.

Dinner: Soup, meat, vegetables, prunes.

Supper: Egg, apple sauce, milk and malt, soup and cereal.

He had patches of eczema on the hands and face. His diet was limited in amount, the apples and prunes and malt soup were eliminated as well as the egg at supper. Lassar paste and resorcin lotion were applied while rhubarb and soda was administered. In eight days he was much improved and within two months entirely well. There has been no return of the trouble.

Another child two years and four months old had had a bad attack of eczema at seven months and since that time had not been free from some patches. She was then nervous, a poor sleeper, had night terrors and was constipated. Her diet was modified by taking away raw peaches, cream and Nabisco biscuit, and local applications ordered. In one month the eczema was healed and there has been no return of it.

Another child nineteen months old had suffered from a severe general eczema, involving the whole body, face, scalp and limbs. She had been treated by specialists in Berlin and Paris and New York, and the mother was finally told by a New York dermatologist that she should consult a pediatrician. The child was fed five times between seven A.M. and five P.M., and her diet included milk, stewed prunes, bread, butter and cereal. She took a quart of milk a day beside other carbohydrates and fat. She would not take eggs. The urine was alkaline, specific gravity 1,010, otherwise negative. The feces showed excess of carbohydrates. She weighed twenty-eight pounds and was thirty-five and one-half inches long. Her diet was laid out on a basis of a required thirty calories to a pound. Four meals were given a day furnishing in all 865 calories.

	Calories.	Calories.
7.30 A.M.—		
Milk, 8 ounces	170	
Water, 2 ounces		
Cereal, tablespoonful	25	
Rusk, ½ ounce	65	
		250
10.30 A.M.—		
Milk, 8 ounces	170	
Water, 2 ounces		
		170
2.00 P.M.—		
Clear soup, 3 ounces		
Well-baked or boiled potatoes, tablespoonful	100	
Slice of bread, 4 inches square, ⅜ inch thick	75	
Tablespoonful of squash, or puree of lima beans, or boiled rice or well-cooked macaroni	35	
		210
5.30 P.M.—		
Milk, 8 ounces	170	
Water, 2 ounces		
Rusk, ½ ounce	65	
		235
Total calories		865

To this meat was added later. The bowels were kept open and ointment was applied continuously. In two months a marked improvement had taken place. The face was clear and most of the body and arms had healthy skin. Some patches, however, remained which were all healed in five months and there has been no recurrence.

In conclusion the eczema of infancy and early childhood which is occasionally due to external irritation is usually due to gastro-enteric derangement and must be attacked primarily by correcting that derangement. The food should be cut down to the caloric requirements, the ration should be balanced and digestion aided. Stewed fruits and cream should be prohibited. The parts affected should be kept well covered with non-irritating applications.

PUERPERAL THROMBOPHLEBITIS.*

By WILLIAM MORTIMER BROWN, M.D.,
ROCHESTER, N. Y.

IT is with some misgiving that I bring this subject before you to-day for I realize that my few words and two case records can be in no way conclusive, but my convictions are so strong on this subject that I feel that these cases should be placed on record and hope that the discussion may bring out some points that may help

* Read at the Annual Meeting of the Medical Society of the State of New York, April 30, 1914.

us a step further in the treatment of this desperate form of puerperal infection.

A disease that has carried with it a mortality of greater than fifty per cent is certainly desperate and must ever be the object of untiring study until better results are obtained, and as an aid in that study I want you to discuss the question of surgical treatment of puerperal thrombophlebitis or puerperal pyæmia, and I shall briefly report two cases.

During the past few years very valuable contributions to this subject have been written by Huggins, Williams, Miller, Jellett and others and I would urge you all to read them very carefully.

It has been shown that in a very substantial proportion of cases of puerperal infection the manifestation is in the form of a true pyelophlebitis in the pelvis and in this class of cases the death rate was enormous.

Does the early surgical interference in these cases hold out any hope as a favorable method of treatment? During the past ten years less than two hundred cases of operation on such cases have been reported and it would seem that the mortality was about the same as in "the watchful waiting" plan of treatment and last year Findley after reporting his cases, which by the way were reports on which it was unfair to base any conclusions as to value of treatment, said that "The Trendelenburg operation is surgically correct in theory but as a practical proposition it is a questionable procedure."

If it is correct theoretically why is it not possible for it to be a good proposition practically? I feel that it can be and will be when we have gotten further along in our differential diagnosis.

Until a greater refinement of diagnosis has been achieved I feel that there are many cases in which the evidence is so suggestive that we are justified in giving the patient the benefit of an early exploratory section with the probability that in a very large proportion of cases we will find a phlebitis that can be cured by ligation or excision, and I believe that an early operation properly done will in the large total be less harmful than the uncertainties of hesitation. In this matter we are now just where we were twenty years ago on the subject of the time to operate on appendicitis and I predict that within a reasonable time we shall be able to report almost as satisfactory results in this condition, of course, subject to the limitations imposed by the very nature of the trouble.

I feel about this as I felt twenty years ago about appendicitis, viz., that I would rather take my chance with an early operation though it might be unnecessary than to have a necessary operation done too late. By the very nature of this condition, if we expect to get the best results, these veins must be shut off from the circulation at the earliest moment possible.

The question of how much and what kind of surgery to do must be left to the exigencies of the individual case and the experience of the operator who is available. My own feeling is that in most cases if we get a good firm ligature above the thrombus and provide adequate drainage we will be giving our patients the best chance.

With these few remarks and the general proposition that there are many cases of puerperal infection that follow a definite course of phlebitic inflammation and thrombosis which can be cured if they are diagnosed and operated on early and before the clot has progressed too far or involved too many branches, I will present the histories of two cases that I have had within the past year. One case will be in full, but the other will be incomplete as at this time, April 26th, the result is very much in doubt.

Case I.—Mrs. J., aged thirty-four. Para three. She was confined on April 22, 1913. Her physician, Dr. George S. Burns, reports that her pregnancy was perfectly normal until April 15th, when he was called away from town, leaving her in the care of another physician.

Her labor began at midnight and the physician was called and reached the house but a few minutes before the child was born spontaneously at two o'clock in the morning. There was a moderate perineal tear which required two sutures. The placenta was delivered intact twenty minutes later.

Both the doctor and the nurse report that the lochia was small in amount or none at all from the first and that the patient complained bitterly of the "after pains." Thirty-six hours after delivery the temperature rose to 100.6 F. and the doctor attempted to dilate the cervix, but was unable to increase the amount of the lochia.

The perineal wound was found to be suppurating on the fourth day and the stitches being loose were removed and on the next day the vagina and laceration were washed with tr. iodine. From the time of delivery the patient was unable to void and was catheterized at suitable intervals. During this time the temperature was ranging from 99 F. to 103 F.

I was asked to see her on the evening of April 28th and found her with a temperature 102½ F. Her face was flushed and anxious; she was very thin and the abdomen was somewhat distended with gas although there was no tenderness or rigidity. The perineal wound was gaping and covered with a grayish exudate.

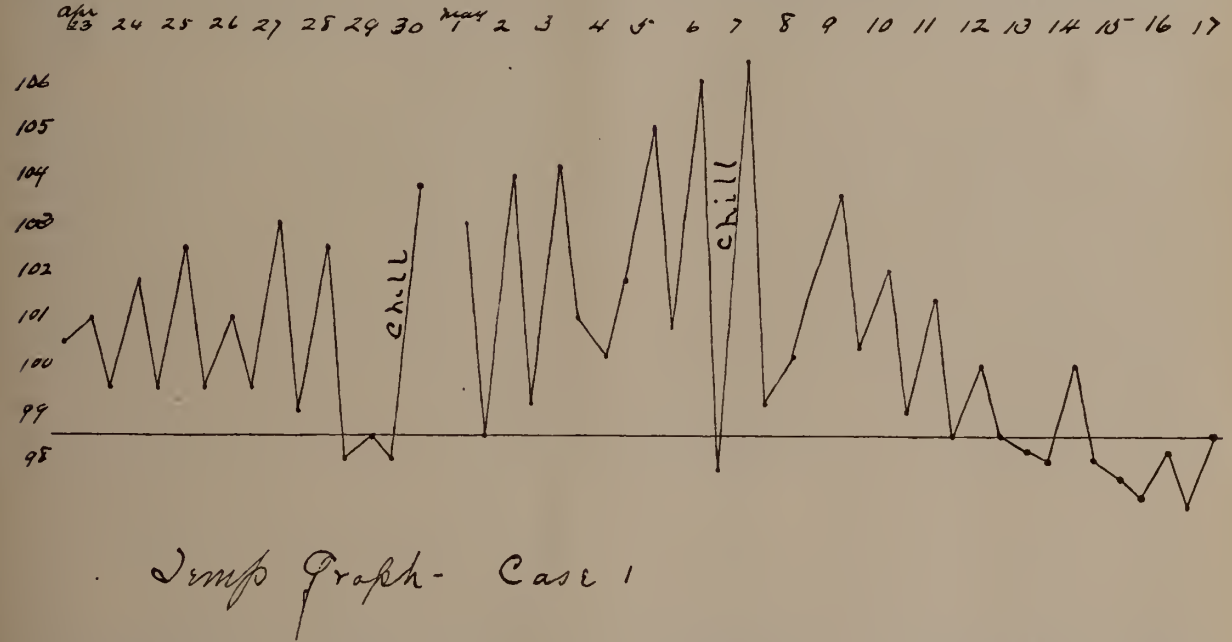
Pelvic examination showed the uterus to be freely movable and not tender. Involution was advanced until the fundus could hardly be felt above the symphasis and what lochia there was, was mucopurulent and without odor. On the left wall of the pelvis somewhat above the ischial spine there was an area of œdema. It was not large, but was a trifle tender to touch. A pyelophlebitis was suspected and conservative treatment of rest, food, fresh air, etc., was advised. For thirty-six hours her temperature was normal or below, after which she had a chill and the

temperature went to 103.8 F. She was removed to the hospital on May 1st.

On May 2nd a blood examination was: Hemoglobin, 100 per cent; white cells, 6,700; polys., 76 per cent; lymphocytes, 23 per cent; eosin, 1 per cent. Agglutination test was suggestive, but not positive.

On May 4th a vaginal smear showed the presence of a diplococcus.

On May 5th another blood examination showed: White cells, 8,600; polys., 69; 30 per cent lymphocytes, and 1 per cent eosinophiles. Agglutination was slight after one hour. Blood cultures were negative after forty and sixty hours.



Temp Graph - Case I

The temperature had a daily range of from five to six degrees, but there were no rigors until the sixth of May, when after a chill her temperature went from 98 to 106 in six hours and dropping to 97.6 F. the next morning and to 97.4 F. at noon when she had another chill and the temperature was 106.6 F. at three in the afternoon, and I saw her again shortly after.

There was no abdominal rigidity or tenderness except a slight soreness on deep palpation on the left side low down and on bimanual examination a small mass was felt to the left of the uterus and high up. It was firm, but not hard.

A diagnosis of left spermatic thrombophlebitis was made and an immediate operation was advised and accepted. After due preparation she was removed to the operating room and the abdomen was opened through the left rectus muscle. The general peritoneum was free from adhesions or other evidence of peritonitis, either past or present.

The appendix and the right side of the pelvis and its contents were normal. The left tube, ovary, broad ligament and even the peritoneum covering the left horn of the uterus were enormously œdematous. From the base of the broad ligament there extended up over the brim of the pelvis a densely thrombosed vein. This thrombus extended nearly to where the vein passed under the sigmoid.

A heavy chromic ligature was passed under the vein well above the end of the clot and tied. After some discussion it was deemed wise to remove the œdematous tube and ovary which was done. A large sized cigarette drain was put through a stab wound in the left flank and down to the infected vein and stump of the broad ligament.

The change for the better in the condition of this patient was prompt and remarkable and her greeting to me the next morning was "I feel like a new woman." The drainage was maintained long enough to ensure safety when it was allowed to close and her further convalescence was without special note and she left the hospital about three weeks after the operation.

In this case the absence of any evidence of a localized focus of suppuration anywhere makes the temperature graph peculiarly significant, it seems to me.

Case II.—Mrs. B., aged twenty-nine. Primipara was a patient of Dr. N. W. Soble, who had treated her for some time for gastric ulcer which had been cured and she had gone through her pregnancy without special discomfort, although there had been some vomiting during part of the time.

She was delivered without aid on the ninth of this month in one of our hospitals. There was a slight perineal laceration, which was repaired and which united perfectly.

The temperature graph shows the irregularity of the infection, which to me is suggestive of venous involvement. I was asked to see her in the afternoon of the 24th and found her with a temperature of 105.2 F. and a pulse of 130. The abdomen was relaxed and there was no tender-

ness, except in the region of the left ovary, where there was a mass about as large as a golf ball, which felt sore on firm pressure.

A vaginal examination showed an entire abscence of lochial discharge and the uterus was well involuted, freely movable and not tender. The same mass could be felt high up on the left side of the uterus. We were unable to get pathological examinations made readily and it was advised to operate at once to remove a pus tube, if such it was, or ligate the veins if it should prove to be a phlebitis.

The abdomen was opened that night and the same condition was found as in case one. The right side of the pelvis was perfectly normal, but the left ovary was large and œdematous, and passing up from the thickened base of the broad ligament was a thick hard mass of thrombosed veins. In this case there were two separate venous trunks running along together and the thrombosis extended much higher than in case one. With some difficulty these veins were followed up underneath the sigmoid and nearly to their juncture with the renal vein and even then I was not sure that I was entirely above the clot. After getting the ligature about the veins there had been so much dissection that it was thought better here to remove at least a part of the veins that were already loosened up and it was done. The ovary and tube was quickly tied off and removed and two large drainage tubes were inserted, one from the incision down into the cul de sac and the other through a stab wound in the flank down to the region of the excised vein.

She was placed in the semi-upright position and stimulated, and given saline by rectum and reacted well from the operation, but the following day the fever returned and since then she has been waging a strenuous battle with the result still very dubious.

THE USE OF THE MODIFIED CHAMPETIER DE RIBES BAG IN OBSTETRICS.*

By GEORGE L. BRODHEAD, M.D.,
NEW YORK CITY.

THE writer of the paper is fully aware of the fact that he is about to bring before you, for consideration and discussion, a subject with which many of those present are fully conversant.

We believe, however, we are in possession of such a valuable aid in our obstetric work, that we would do well to consider whether we cannot make more extensive use of the bag. Notwithstanding the fact that these bags have been in use for a number of years, it is surprising to us that greater advantage has not been taken by the profession at large of a method at once so simple and valuable. Therefore, we have thought it worth while to consider again the many conditions in which the bag is useful.

These bags, five in number, are conical in shape, made of canvas (hence inelastic) covered with rubber, and the stem, through which normal salt solution or sterile water is injected into the bag, is very strongly fastened to the apex of the bag, making it possible to make moderate traction if desired.

When not in use, the bags, thoroughly dried, are covered with talcum powder, and are prepared by boiling for five minutes.

The technique for their introduction is simple, and is as follows:

The usual preparations for labor having been made, a one per cent lysol vaginal douche is given and the cervix is dilated with the finger, or a steel dilator, preparatory to the introduction of one of the bags, the size depending upon the amount of dilation of the cervix. The bag is first tested, to make certain it is perfect, then the base of the bag is pulled out, and the bag is rolled up, after which it is seized with a Champetier de Ribes forceps (or with an ordinary uterine dressing forceps), and carefully passed into the cervix, either by inspection or vaginal touch. Then the bag is slowly filled with a sterile solution of lysol or normal salt solution. For this purpose the writer has devised a glass syringe, with a rubber plunger, but the ordinary Davidson syringe may be used. The glass syringes are of two sizes, two and one-half and four and one-half ounces, and, easily sterilized by boiling, have proven generally useful. When the bag has been completely filled, the stem is clamped and tied. As a rule no traction is made upon the bag, but if it is desired that the dilation be performed quickly, traction is made upon the bag, but if rapid dilation is desirable, traction is made at intervals of fifteen minutes.

The bag will soften and dilate the cervix, and if, when the first bag slips out of the cervix, labor has not yet begun, a larger bag is introduced. In some few instances the cervix can be dilated almost completely with the bags, without provoking hard, expulsive contractions, but in these patients the membranes may be ruptured, and, if necessary, the delivery completed by forceps or version.

The largest field of application of the bags is, naturally, for the induction of labor, and for many years we have placed our reliance almost exclusively upon them.

In addition to the well known indications for the interruption of pregnancy, we find the bag valuable in patients who have apparently gone beyond full term, where the child is large and the pelvis is normal, or slightly undersized. In primiparæ especially, we sometimes find that the

* Read before the Medical Association of the Greater City of New York, April 6, 1914.

child is too large, and too well developed, to pass safely through the pelvis, and in our opinion many children could be saved by the interruption of pregnancy.

There can be no question of the value of diet and exercise in preventing over-growth of the child, but time forbids further discussion of this important subject. Again, we believe that in a patient at term, especially in a primipara, if pains have not commenced within twenty-four hours after the premature rupture of the membranes, labor should be induced with the bag.

In order to study carefully the results obtained in hospital and private work, the writer, in 1912, tabulated his statistics, in a paper entitled "Observations Based Upon a Study of 139 Cases of Induction of Labor with the Modified Champetier de Ribes Bag." This was published in the *American Journal of Obstetrics and Diseases of Women and Children,* vol. lxv., No. 5, 1912, and the writer summarized the statistical discussion of the subject with the following conclusions:

(1) For the induction of labor, bags number two and three are most useful.

(2) Accidental rupture of the membranes occurs in only three per cent of all cases.

(3) The great value of the bag is shown by the fact that in ninety per cent of all cases, labor was induced by the use of not more than two bags, while in nearly seventy per cent of the cases, one bag was sufficient.

In only six per cent of all cases was labor not induced by the bag.

(4) Anesthesia for bag introduction is usually unnecessary, as shown by the fact that in only fourteen per cent of private patients was an anesthetic used, or in sixteen and six-tenths per cent of all cases, including many in which the anesthetic was advisable for clinical purposes.

(5) In thirty-seven per cent of all cases, labor begins at the time of the introduction of the first bag; in seventy per cent of all cases, labor commences within twelve hours after the insertion of the first bag; while in eighty-eight per cent of all cases, labor begins within thirty hours after the insertion of the first bag.

(6) The average length of time intervening between the insertion of a bag and the onset of labor is in primiparæ eight hours and twenty-two minutes, in multiparæ ten hours and twenty-two minutes, and in all cases, nine hours and forty-one minutes.

(7) In all primiparæ, the average duration of labor induced by the bag, was twenty-two hours nine minutes. In all multiparæ, the average was fifteen hours fifty-two minutes, and the average in all cases was eighteen hours two minutes.

(8) Forty-nine per cent of labors induced by the bag terminated normally, and seventy per cent terminated normally or with the low-forceps operation.

(9) In five per cent of all cases, the presentation was changed, but in only one case was the outcome affected because of the accident.

(10) In 139 cases, the cord presented or prolapsed in six, or four and three-tenths per cent, but it must be remembered that in sixty-three cases, labor was induced for contracted pelvis, relative disproportion or hydramnion, and that, therefore, the accident under these circumstances was much more likely to occur.

(11) The morbidity in private work is practically nil, and in hospital work very slight.

(12) The fœtal mortality in private work was about five per cent, in hospital work eleven per cent. This can be explained partly by the fact that private patients receive naturally more individual attention, and the results necessarily are correspondingly better.

(13) The maternal mortality from the use of the bag is nil.

Let us now consider the use of the bag in eclampsia. We believe that the toxemia is caused by, or associated with toxic substances, which are present in the blood, and which are formed during the development of the fœtus in utero, but of their origin we know nothing. The treatment of the complication may be divided into medical and surgical. There are eminent authorities who place entire confidence in medical treatment alone, and on the other hand there are obstetricians of wide experience, who, while admitting the great value of medical treatment, are of the opinion that the uterus should be emptied as soon as possible after an eclamptic seizure, by vaginal section.

When there is such diversity of opinion among leaders of the profession, it is no small wonder that the average practitioner is puzzled as to the proper course which he ought to pursue.

Whether one elects the conservative or the radical plan of treatment, there is one point upon which all agree, and that is the active elimination of the poison by the bowels, skin and kidneys. This is accomplished by hot packs, hot baths, cathartics, colonic irrigations, etc. For the control of the convulsions, three drugs are widely used, veratrum viride, chloral and morphine. In our opinion veratrum viride is by far the most valuable, for not only can the convulsions be controlled, but the drug acts also as a diuretic, a diaphoretic and vaso motor dilator. Although a powerful depressant I know of no instance of fatal poisoning from its administration. The drug, to be effective, must be given in large doses, frequently repeated, making use of a reliable preparation such as the Squibb Fluid Extract. We are in the habit of administering a hypodermic of m-x as an initial dose, and repeating with m-v every twenty minutes, until the pulse comes down to sixty. In rare instances we have observed convulsions with a pulse of sixty, but the action of the drug is usually efficient.

Venesection in properly selected cases is an undoubted aid in the treatment.

Taking up now the question of operative interference, let us consider, for a few moments, the claims of those who advise vaginal or abdominal Cesarean section.

Zinke, of Cincinnati, at the Annual Meeting of the Medical Society of the State of New York, in April last, read a paper on "The Medical Versus the Surgical Treatment of Puerperal Eclampsia," which was published in the *New York State Journal of Medicine* in August, 1913. This address contains so much of interest that it should be closely read by all who are interested in the subject. The author states that Peterson in his collected 530 cases of vaginal hysterotomy for eclampsia performed immediately after the first seizure, found the maternal mortality eighteen and five-tenths per cent.

In twenty cases reported by McPherson, the maternal mortality was twenty-five per cent. He then adds that Bumm predicted that under immediate delivery, the maternal mortality of eclampsia could be reduced to five per cent. If we add to the above, the thirteen cases of Cesarean section for eclampsia reported by Davis, the collective mortality is increased to twenty-nine and three-tenths per cent.

Moran states that "altogether 116 cases of abdominal Cesarean section for eclampsia have been recorded in literature, with a maternal mortality of forty-eight and nine-tenths per cent;" Zinke then puts the question:

"Suppose that all obstetricians should decide to interfere surgically in every case of eclampsia immediately after the first seizure, antepartum, and if, after giving the treatment a fair trial, we would still record a maternal mortality of twenty to twenty-nine per cent, would we not be compelled to confess that in at least seventy to eighty per cent of all cases, the operation was unnecessarily performed? If this conclusion is wrong, let it be disproved."

Various authors are then quoted showing mortalities of from six to twenty per cent under the conservative treatment. He then compares the average maternal mortality of twelve per cent under medical care with the mortality of thirty-three and eight-tenths per cent of cases treated by section, and concludes his paper by stating: "My faith in veratrum viride in the treatment of eclampsia is such that, were I deprived of every other means or method to combat the disease, I would still have hopes of saving my patient in most instances by the aid of this drug alone"

Lichtenstein, in a recent journal (*Monatsschrift für Geburtshülfe und Gynakologie,* August, xxxviii, No. 2) gives his results with the expectant treatment in ninety-four cases, in which the mortality was five and three-tenths per cent. None of the deaths were caused, in his opinion, by the form of treatment. The infant mortality was thirty-seven and three-tenths per cent. In fifty-four per cent of the cases, the attacks ceased after a single venesection, while forty-two per cent of the women with antepartum attacks recovered before labor came on. Seventy-four successive cases were treated without a death.

We believe that medical treatment of antepartum eclampsia should be carried out as vigorously as possible, but we are convinced that, inasmuch as pregnancy is directly the cause of eclampsia, the uterus should be emptied within a reasonable time, not by a radical operative procedure, such as vaginal or abdominal section, but by the slower and more physiological method of induction of labor. For this purpose we combine the use of the bougie, or rectal tube, with the modified de Ribes bag. Whatever the ultimate statistics of the treatment by section, we believe that in the hands of the general practitioner the induction of labor combined with vigorous medical treatment will continue to give the best results. In these cases, as in so many others, the bag affords us an invaluable aid in the treatment, but the condition is so urgent that we supplement its use by the introduction of a rectal tube, thus making the induction of labor more certain.

When eclampsia develops in the early part of the first stage of labor, the choice of method would be the introduction of the bag to promote dilation of the cervix, and in the latter part of the first stage, the application of forceps, podalic version, or, when the child is dead, craniotomy. The latter operation should be used much more frequently than it is. Vaginal section is indicated, if at all, in those cases in which the cervix is very rigid, and where the bougie and bag have failed after a reasonable time to effect softening and dilation.

Abdominal Cesarean section is the operation of choice in a primipara at or near term with a rigid small vagina, and a contracted pelvis.

Placenta Previa.

For marginal placenta previa, the bag offers almost an ideal method of treatment. The problem in these cases is how to secure full dilation of the cervix with the least violence and a minimum amount of blood loss, while in no way injuring the child.

Take, for example, the case of a patient who commences to bleed, and, upon examination, the margin of the placenta may be felt, the cervix being dilated so as to admit one or two fingers. We know that if the foot can be seized, the lower segment can be tamponed, so to speak, with the thigh and breech of the child. But this in many cases involves the manual dilation of the cervix, so that the entire hand may be introduced into the uterus. Then, after version, the dilation must be completed by the half breech, which is a poor dilator. One of the larger sizes of the bag can be inserted, and, when fully inflated, will act as a tampon, preventing further bleeding, and also stimulating the uterus to contract, thus mechanically dilating the cervix. After the cervix has been well dilated, version can be perfomed with

much greater ease, and with better results for both mother and child.

In central placenta previa at term, and in primiparæ with marginal placenta previa at term, there can be no doubt that in the hands of a competent operator, with proper surroundings, abdominal Cesarean section would give the best results, considering, of course, the mortality of mother and child, and also the morbidity. Cesarean section, as a routine procedure, would give, on the other hand, a much larger mortality than the conservative treatment with the bag or podalic version.

Accidental hemorrhage, so called, often demands the interruption of pregnancy, and here again the bag offers a solution of the problem. In this case, however, the bag acts only as an agent for the induction of labor, as the source of the bleeding is too high up to be influenced by the bag. Where the bleeding is very profuse, or continues moderately with the bag in place, some other method of procedure is indicated—the choice lying between manual dilation, followed by forceps or version and vaginal or abdominal section.

Finally, the bag is useful in cases of tedious labor, especially in primiparæ with breech presentation.

In a prolonged first stage, where the patient, after many hours of suffering, has made but little advance, a bag will frequently cause the pains to become more effective, and dilation will be more rapid. The breech of the child is a poor dilator, and when labor proceeds very slowly, there is no better method of hastening progress than by the use of the hydrostatic dilator.

In conclusion, we assert that the modified de Ribes bag is one of the most valuable aids in our obstetric work; that, for one reason or another, the value of the bag is not appreciated as it should be; and that, in our opinion, in a considerable number of conditions there is no method of procedure comparable to the use of the bag, nor attended with such excellent results.

VAGINAL DISCHARGE. (SOME REMARKS ON ITS CAUSATION AND RATIONAL TREATMENT.)*

By FRANK McMORROW, M.D.,
SYRACUSE, N. Y.

THE subject of vaginal discharge offers a wide field for investigation and study and it will be my endeavor in this short paper which I present to you to-night, to bring this matter to your attention. The general practitioner meets with these cases very often and they constitute a greater part of his work in diseases of women.

In the majority of cases, leucorrhœal discharge is the only symptom complained of, some cases having persisted for years in spite of all manner of treatment. It then becomes the physician's duty to discover, if possible, the source and cause of this discharge, and in some cases it may require all the skill and ingenuity of the examiner to find where the discharge is coming from and this can only be done by considerable work and investigation of each case—or followed by a process of elimination, until one is able to find the exact seat of the infection. Leucorrhœal discharges are common to all inflammatory or congestive conditions of any or all of the pelvic organs. These discharges are of value only in so far as they cause the patient to obtain relief from this distressing symptom. The character varies as they are mixed or not with infection.

The purely congestive discharges, such, for example, as precede menstruation or accompany pregnancy, are of a milky white character—those which accompany gonorrhœal infection or puerperal septicæmia, assume a muco-purulent character. It is the latter form of discharge which almost always accompanies interstitial salpingitis. This discharge is sometimes acrid and causes pruritus of the vulvæ.

Pruritus is not so common a symptom in these inflammatory diseases as we would be led to imagine from the amount of the discharges, their acridity and the constancy with which they exist—so infrequently does it occur in fact, that a grave doubt arises as to whether the pruritus is ever due to the discharge. This one fact should be noted in trying to clear up this condition.

The Importance of the Early Recognition of Leucorrhœa.—Leucorrhœa is apt to appear in the same amount where the inflammation has attacked the tube alone, as where the whole pelvic peritoneum is involved. One can readily understand that these discharges are, in a great number of cases, due to infection, either specific or septic, and that the early recognition of the cause may save many women's lives or at least prevent them living a life of chronic invalidism, after having had to resort to a number of operations on the pelvic organs. Take the significance of leucorrhœal discharge in childhood—every physician knows that in the majority of cases the cause is gonorrhœa, the infection in most cases is indirect and accidental, being transmitted on contaminated bed linen, towels, etc., but any child affected with a purulent discharge should be subject to a proper examination and the correct treatment instituted without delay if we wish to preserve the child's pelvic organs, intact.

There are, of course, other causes for leucorrhœa in children such as worms, the colon bacillus infection, and irritation from the

* Read before the Syracuse Academy of Medicine, March 17, 1914.

presence of foreign bodies, but when there is a discharge, no child should be allowed to go without a thorough examination.

In young women, before marriage, leucorrhœa may be due to a number of causes, as, anæmia, congestion of the heart, kidneys or liver—from masturbation or sexual excitement, as well as from different forms of infections. A retro displacement of the uterus, which is common in young women, can readily be determined by a combined rectal and abdominal examination. In unmarried women where there is a suspicion of cervicitis with erosions, a diagnosis can be made by the use of the Nitze cystoscope, but in this class, as well as in children, where there is the slightest evidence of infection, no hesitancy should be exercised in making the proper examination and doing it under an anæsthetic, if necessary. Married women are, for obvious reasons, more subjected to leucorrhœa, as the chances for infection are greater and it is more apt to involve the adnexa, causing a most destructive and dangerous process, as well as the most incurable, that a physician has to treat provided they once have accomplished their ravages before they come under observation. At the same time, taken in their incipiency, they are readily retarded and cured.

By far the greatest cause of leucorrhœa is septic or specific infection. The former enters in one of two ways, either by wounds caused by operations or wounds caused by child-bearing or abortion.

Gonorrhœa rivals, or even exceeds puerperal septicæmia as an etiological factor, causing leucorrhœa.

In treating leucorrhœa, we must always have the above factors in mind, and if we can see these patients before the infection has extended beyond the internal os, we can accomplish the best results.

When the infection is in the adnexa, then, as a rule, surgical methods must be undertaken.

Leucorrhœa in married women is not caused entirely by the above named infections; there are a number of other conditions which will keep up a vaginal discharge, such as mal-position of the uterus, any involvement of the pelvic peritoneum as a result of chronic inflammation, the presence of new growths, the mere congestive disturbances which are likely to occur in unmarried women. A great many of these conditions are intimately associated, and so constantly complicate each other that it becomes impossible to treat one, without taking into consideration several or more of the others.

Women Past the Menopause. Any leucorrhœal discharge during, or after the menopause is, of course, highly significant, and I think that the laity are becoming better informed in regard to the seriousness of this symptom at this time of life—they more often than formerly seek the advice of their physician, due to a campaign being carried on by medical men throughout the country, and from numerous articles written in the lay press, on "Cancer," especially if their discharge has an odor or is associated with any unusual bleeding. The belief of many, that they are exempt from the usual diseases of the generative organs at this time, is gradually being dispelled. Infections can take place, although they are, for various reasons, not so frequent. The two most common causes for discharge in women who have passed the climacteric is senile endometritis and cancer. The discharge may be putrid in either, or it may be tinged with blood, leading to a mistake in the diagnosis, unless the microscope is used, together with bimanual examination.

Discharges may also result from vaginitis, fistula, fibroids, new growths, etc. The theory advanced by gynecologists to-day, is, that considering the adnexa and the position of the uterus normal, that in a great many cases, any leucorrhœal discharge is either vaginal or cervical, with the preponderance of opinion that it is cervical. The vagina is lined with very few and unimportant secreting glands from which discharge can come, with the possible exception of a few isolated and unimportant ones in the neighborhood of the fornices, and several authorities state that even their existence is doubtful.

The general belief that leucorrhœa is an expression of chronic inflammation of the endometrium, as has been said by "Hunner," has been proven by laboratory examination to be rare, while the inflammation of the cervix is common, and why the sharp curette should ever be used in the uterine cavity for leucorrhœa, considering the pathology of the disease, is hard to understand, it only injures the uninvolved parts and does no good and only actual harm results because the gonococcus can find no permanent hold in the uterine mucosa, provided it is not injured, but after curettage or pregnancy, the raw surfaces offer a good culture medium for the extension of gonococcus. The endometrium usually recovers, but in the meantime an opportunity has been given for an extension of the disease to the oviducts with its attendant danger and discomfiture.

In both the Wertheim and Shauta Clinics in Vienna, they believe that a very small percentage of infection lodges permanently in the uterine mucosa, that the seat of the infection is in the cervix and if it extends beyond the internal os, it finds its way to the oviducts where it may remain for an indefinite period, giving rise to inflammation of various degrees and intensities.

Gonorrhœal infection lodges most frequently in the cervix according to Goelet, and it

occurs often without primary urethral infection. The only symptom of chronic cervicitis, is leucorrhœa, and on examination of the portio, an erosion, which is its outward sign, will always be found. The endometrium of the portio consists of a surface of short columnar cells standing almost directly on subjacent muscle, in which most deeply imbedded are the racemose mucus producing cervical glands.

The healthy vagina contains many organisms and their passage up the cervical canal is unimpeded; they do not, as a rule, find their way beyond the internal os and this is true to some extent of pathological infections *e.g.*, by gonococcus.

In cervicitis and endocervicitis, the portio on palpation is much harder and thicker and feels nodular from cystic degeneration, and one in comparing it with the size of the fundus, will notice that in some cases it is nearly one-third as large as the body of the uterus. The discharge is seen through the speculum, exuding from the external os as a whitish albuminous or muco-purulent tenacious secretion. It is sometimes stringy and more or less like the white of an egg, differing from the milky or creamy vaginal discharge. It is ofttimes very abundant, causing the patient to wear some protective pad as if they were continuously menstruating. There is no pain, but in many cases the patient is weakened. Almost all of these cases are caused by gonorrhœal infection.

Treatment.—In regard to the treatment of vaginal discharge, I will not speak of the ordinary methods commonly in use and known to you all, neither will I follow the custom in vogue of reporting a number of cases dealing with writers' success in overcoming this intractable symptom, but I will call your attention to the line of treatment which I have used in the most persistent cases of cervical discharge, which have yielded the very best results in my hands, and my reason for studying this subject so closely is the fact that I have had a number of such cases, in which, after local treatment had failed and where, after excluding any tubal involvement, I curetted the uterus and in not one of these cases was the condition improved, but the discharge was only aggravated, so I came to the conclusion after losing a number of such patients, some of which I curetted for the same condition more than once, that my line of treatment was wrong, that my diagnosis was incorrect.

Tampon for infection of the cervix is just as irrational as curettage of the cavity of the uterus in leucorrhœa: they act as an irritative foreign body, produce congestions which favor the activity of the pathogenic microbes, they cause maceration of the cervical mucosa, offering a field for penetration and absorption and they prevent drainage, which blocking up these discharges can do no good. Surely in no other branch of surgery is there so much interference with the proper drainage as there is in this class of cases.

In ordinary cases of cervicitis (not of gonorrhœal origin) the application of strong solutions of twenty per cent and thirty per cent of sol. nitrate of silver, tincture of iodine or pyroligneous acid, after first clearing out the mucus from the cervical canal by an alkaline solution, one will sometimes effect a cure, but healing by medicament is rare, only where the necks of the glands are wide open and an application can get in. In the majority of cases local applications provoke new formations of stratified epithelium, which may cover or bridge over the mouths of the glands, causing a false or pseudo healing. The glands are still active and secreting mucous, generally two weeks later, rupture of the glands takes place and cervical discharge commences.

When an operation is unadvisable, a very effective method of treating these bad cervical infections, is by the use of the actual cautery. The cautery is heated to a bright red heat and the method of Hunner is used with great success, that is, introducing the cautery well into the cervical canal, making five or six deep radial strokes at each treatment, not attempting to burn out all the diseased tissue at one sitting; this treatment should be repeated in three weeks and a sterile strip of gauze is left in the vagina to take care of possible hemorrhage.

I have employed this plan of cauterization in my office with good results, noticing a marked improvement and lessening of the discharge after each application. These cauterizations do not even call for a local anæsthetic except in weak and nervous women, then it is well to inject a few drops of four per cent sol. cocaine into the cervix; the patient is able to leave the office afterwards with very little discomfiture.

The best method of treating most of these infections in my experience, consists in dilating the cervix and with a very sharp curette, strongly applied to the diseased cervical glands, suffices to eradicate them from the dense matrix by which they are surrounded; this method at least lays the mouths of the glands wide open and drains them.

This treatment is generaly curative and satisfactory.

A trachelorrhaphy will often give relief if done thoroughly and enough of cervical tissue cut away, so that these glands are mostly removed at the same time. I have had one extremely obstinate case which resisted all methods of treatment for a period of over eighteen months, the whole cervix being a mass of erosions; here as in other cases of this kind a circular amputation of the cervix will effect a permanent cure.

ECTOPIC PREGNANCY.*

By HARVEY P. JACK, M.D.,
HORNELL, N. Y.

WERE the number of ectopics who have slowly bled to death under diagnosis of incomplete abortion or septic infection fully known to the profession, I believe we would be astonished. Brown Miller says he has known more than one patient to be allowed to bleed to death from repeated hemorrhages, because at the same time there was a discharge of blood from the uterus and an internal hemorrhage was unsuspected. I can confirm his observation, for in two out of the seven cases I have had under my care the diagnosis was wrong.

In one, ectopic pregnancy was suspected by the family physician, but an excellent consultant decided that it was a septic case on account of the temperature of ninety-nine and one-half and a high leucocyte count.

In the other, who was an Austrian, and who was unable to speak the English language intelligibly, I do not remember that either of two good men had made any definite diagnosis, and she was sent in by a third for diagnosis. She was operated within twenty minutes of her arrival in the hospital.

Mistakes the other way are also frequent, but are usually not so serious, for the patient has nearly always a condition that requires operation anyway.

In the early part of my career, I remember that I opened the abdomen twice under the diagnosis of ectopic pregnancy when it was not present. One proved to be an interstitial pregnancy; the other an incomplete abortion complicated by a fibroid uterus. Both cases gave a good ectopic history, and had I examined them under anæsthesia as I should now they would have escaped operation.

Can we make a diagnosis of ectopic gestation provided the patient presents herself for examination before rupture occurs with its tragic results. The importance of such a diagnosis is tremendous, and despite the assertion of Farrar Cobb, that a diagnosis before rupture is impracticable and impossible, it has been done, and I believe that as the general practitioner becomes better and better acquainted with the life history of ectopic pregnancy and its protean manifestations, and for this reason refers his cases earlier and on suspicion for examination under anæsthesia at least a tentative diagnosis of this condition will become much more frequent, a diagnosis of a surgical condition that requires treatment anyway will more often be made.

And the sooner we come to this position in viewing the situation the better.

As I have often heard Charles Mayo say, in speaking of the diagnosis of upper abdominal disease, the German will devote very valuable time to the making of an exact diagnosis, and the patient will wait supinely hoping for this exact information, which, I believe, the German clinician is not able to obtain much, if any, more frequently than are the clinicians in this country. The position of the American patient will be different. He will say—"You are sure that I have some surgical condition in my side, why waste time, go in and treat the condition as you find it and tell me about it afterwards."

When possessed with a full knowledge of this condition, we as a profession approach the matter from this standpoint; the number of lives and the amount of suffering that will be saved will be beyond estimate.

So much then as a plea for the education of the general practitioner when the patient presents herself. The patient will not frequently present herself before rupture, but no doubt they do so much more often than is known. Brown Miller and Bandler report many cases.

Usually bimanual examination under anæsthesia will show something, but if it does not and the history and symptoms are typical, Bandler would explore by vaginal incision to settle the diagnosis.

Dark blood appears as soon as the peritoneum is incised.

History and the physical examination must be our means here. Usually a history of skipping a week or two over a period the irregular bleeding or spotting, or of a period a week or two overdue accompanied with fairly profuse bleeding, but very rarely so profuse as would be expected from abortion; cramp like pains are usually complained of, grading in severity from slight colic to the most excruciating pain. Faintness pronounced and frequent is a symptom of great importance, taken in connection with a typical history. Often, in my experience, the woman believes she is pregnant.

The exquisite tenderness of a palpated mass to the right or left of the uterus is a symptom of the very greatest importance. It is ten times more sensitive than the most sensitive pus tube I have ever palpated. I have never observed such extreme sensitiveness as is present in an ectopic tube, and this you will find after rupture as well as before. Brickner emphasizes it before rupture, and I have observed it in all the cases I have examined after rupture. These symptoms and the finding of the mass are enough to call for exploration, either vaginal or abdominal.

The diagnosis of a ruptured tubal pregnancy is usually easy, that of tubal abortion less so. The picture is so complete in a typical case that once having seen it one rarely forgets. The irregular bleedings, in the history, and the sudden collapse and great pain and restlessness with the evidence of severe hemorrhage in the blanched features and the rapid, weak or imperceptible pulse, constitute a sufficient symptom complex to make a diagnosis of tubal rupture. I think tubal rupture is not nearly so frequently mistaken for incom-

* Read at the Annual Meeting of the Medical Society of the County of Steuben, at Bath, May, 1913.

plete abortion as is tubal abortion. In tubal abortion the symptoms are the same, the history the same, the tender mass the same, but they are rather less severe at first, except the exquisite tenderness of the mass, which I have observed in all of my cases.

It is in these less severe cases that hemorrhage occurs and recurs until the woman slowly bleeds to death if a proper diagnosis is not made, and operation performed; unfortunately a clear history is not sometimes obtainable.

Brickner says in fifty per cent of his cases there was no history of menstrual irregularity. I do not believe this is the usual experience. It certainly is not mine. Of all of my cases that gave any history, gave a history of menstrual irregularity. A blood count does not help, as frequently a leukocytosis of ten or fifteen thousand is present, a low hemoglobin is significant. Fever is present here as well as in infectious cases. The history of these less severe cases is important not only as regards the irregular bleedings from the uterus, the casting off of decidua, and the idea of the woman that she is pregnant, but also and much more so as regards the cramplike pains before abortion and particularly as to the occurrence of a sudden severe pain. In one of my cases this history of sudden severe pain was only obtainable on careful questioning. It had not been of sufficient severity so that the patient mentioned it voluntarily in her narrative of her case, but on being questioned she remembered that it was from the time she had that pain that her invalidism had commenced.

I have operated upon seven cases of ectopic gestation, which I will briefly report. On one woman twice within a period of fourteen months. There have been no deaths and recovery has been prompt and complete in all cases. One woman has since passed through a normal pregnancy.

Case I.—Nullipara, patient of Dr. Place. Mrs. R., Austrian, aged thirty-two, briefly referred to above, was brought to the hospital, just as I had completed an operation, suffering great pain all over the abdomen. She was very restless, pulse 140, temperature niney-six. As she could not speak English well enough to be understood, no history was obtainable. Upon vaginal examination I was very sure that I could feel blood clots in the pouch of Douglas. My observation was not confirmed by others who examined her, but I was so sure that I operated immediately. Tubal rupture, abdomen full of blood. Prompt, uneventful recovery.

Case II.—Mrs. E., aged thirty-four, I-para, patient of Dr. Brainard, of Andover, N. Y. We drove out into the country four miles from Andover to see her. History typical, patient had fallen in collapse the day before. Exquisitely tender mass in left side. When I saw her she had rallied from the shock, and we moved her to St. James' Mercy Hospital and operated the next day. She was given strychnia in full doses hypodermically and salt solution slowly by the drop method, not over six ounces every three hours, and morphia as needed for pain until time of operation. Next morning, forty-eights hours after attack, tubal abortion, left tube removed. Patient left hospital fully recovered in two weeks. Large amount of clotted blood removed from abdominal cavity.

Case III.—Patient of Dr. Dunham, referred to above. Age about thirty-four. She had been sick for six days. Dr. Dunham had suspected tubal pregnancy, abortion or rupture, but a consultant very naturally concluded from blood examination, a leukocytosis being present, also fever, that the case was one of parametrial infection. It was in this case that I was only able to obtain the history of sudden severe pain upon careful questioning. The menstrual history was typical, exquisitely tender mass in right side, pallor, rapid pulse. The patient was stimulated as was case No. II, and operated at St. James' Mercy Hospital next morning. Tubal abortion, very profuse hemorrhage. Prompt recovery. Child born since.

Case IV and VI.—Mrs. M., aged thirty-five. Patient of Dr. S. H. Stewart. Dr. Stewart saw the patient at night. She was then in collapse. He gave her morphia, gr. ¼, 1 dose, strychnia in 1/20 gr. doses every two or three hours, and drop saline. She rallied and was operated the next afternoon at St. James' Mercy Hospital. Abdomen full of liquid blood and clots, rupture of right tube one and one-half inches from cornu. This case was diagnosed by Dr. Stuart before I was called. She made a prompt and uneventful recovery. Salines and strychnia and morphia had brought her up to very good condition at operation, thirty-six hours after rupture. Menstrual history, cramp-like pains, and exquisitely tender mass in right side typical.

Fourteen months later Dr. Stuart called me in consultation to this patient. She was in collapse at the time, suffering from repeated fainting fits with an almost imperceptible pulse. No history, though had we questioned her carefully we would have obtained a fairly typical history, including the irregular hemorrhages and the passage of a dark mass from the uterus. As it was, we made our diagnosis from the collapse, rapid pulse, 160 to 180 almost and at times quite imperceptible, and an exquisitely tender mass which was present in the left side. We made the diagnosis one afternoon and decided to wait until next morning for operation. She was at once removed to the hospital and morphia given as required, strychnia in 1/15 gr. doses every two or three hours, and drop saline. Next morning she was in fairly good condition, and operation was rapidly performed, tube resected. Tubal abortion. Time of operation twenty minutes. She made a nice recovery. She is now in robust health.

This case would seem to confirm Webster's theory as to the cause of ectopic pregnancy,

namely an atavistic tendency of the tube to revert to being more pronounced in some individuals than in others.

Case V.—Mrs. B., aged thirty-six, an Austrian, and a friend of Case I. I first saw this case myself, and I took thirty-six hours to be sure of my diagnosis. History was typical as far as menstrual history was concerned, but I could get no history of a severe initial pain. The history of the cramp-like pains was typical, and the woman believed herself pregnant. She had skipped one period and the pains and irregular bleeding began about the seventh week. When I saw her the bleeding was continuous, but not very profuse, but profuse enough for an incomplete abortion at the seventh week to my mind. I examined her carefully and found the exquisitely sensitive mass and it was sensitive in the extreme. At the first call, before I had made a careful examination, my diagnosis was incomplete abortion. This shows the importance of a thorough bimanual examination in suspected incomplete abortion, for after this examination I decided upon operation and had the patient at once removed to the hospital. Pulse at time was 92, temperature 99.4. I operated immediately, though my diagnosis was doubted by my assistants. Tubal abortion, moderate hemorrhage, good recovery.

Case VII.—Four para. Patient of Dr. Kysor. History and attack typical. The symptoms were so tragic that no one of several physicians in consultation demurred seriously to a diagnosis of ruptured tubal pregnancy. Pulse could not be felt and the patient seemed to be growing weaker by the minute, pulse counted by stethescope was 160 to 180, and the heart was fluttering. Morphia and saline infusion and strychnia started at once, and the patient rushed to St. James' Mercy Hospital, where I resected a ruptured tube, and returned the patient to bed in twenty minutes. She was in very bad condition, but was watched by physicians in relays, and by means of heroic strychnia and whiskey medication, continued saline infusion and rectal administration and leg bandaging by the method of Dawborn, she recovered and is well to-day. This case could not have been saved except for the constant and skillful care she received, both from physicians and nurses.

As to the mooted question whether we should operate immediately in all cases or wait and gently give saline solution by the drop method and strychnia and morphia as indicated, waiting twelve, twenty-four or forty-eight hours until shock of rupture or abortion has been overcome, no conclusions can be drawn as all recovered, though in five the waiting and stimulating method was pursued, and in two immediate operation was performed.

No active arterial bleeding was found in the two cases immediately operated, but they were too nearly dead to bleed much actively. Slow oozing was present in both. In none of the others was there but very little active bleeding.

These can be classed as the non-emergency cases. The truth, as usual, in two opposite extreme views, lies in the medium position. Farrar Cobb from an analysis of 137 cases, thirty-six of which were distinctly and clearly emergency cases, like the last one reported above, concluded that these cases should all be operated at once. In ten he found active arterial bleeding.

The success of this plan of treatment will, I believe, depend upon three things—the surroundings, intravenous saline infusion, together with the morphia and strychnia, the infusion being started as soon as the ovarian artery of the affected side is clamped, the morphia and strychnia having been given at once, and last, but first, the man behind the gun. Fifteen to twenty minutes for one of these cases, and means for direct transfusion must be at hand. I believe that under ideal conditions, and statistics confirm this belief, that better results will be obtained by immediate operation, than by deferred operation.

But the thought I would have the general practitioner carry home with him from this meeting, is that he is not helpless in these cases.

The results obtained by Stellwagon, Shoemaker and Robb and others who wait, but not too long, are excellent, and it is the duty of every one practicing to become familiar with their methods. They are in general the treatment of shock, morphia in ¼ gr. doses to quiet pain and restlessness; saline solution very slowly given by the drop method and strychnia as indicated, and it is usually indicated in large and frequent doses. Operation is indicated as soon as shock is overcome.

In two of our emergency cases no history could be obtained, and the pain was referred to all parts of the abdomen and treatment was instituted from the mass felt and the signs of hemorrhage and shock.

Sometimes a mass cannot be felt. It is a good rule to follow when one sees a sudden severe illness attended by signs of internal hemorrhage, collapse, restlessness, general muscle spasm of the abdominal wall and great pain which may or may not be localized, in a young married woman or any married woman, to treat the case as one of tubal rupture, in the absence of definite signs pointing to some severe internal abdominal lesion.

But it is not alone for the emergency cases that I would enter a plea. They will usually be diagnosed. But let us remember also the woman who slowly bleeds to death from internal hemorrhage under a diagnosis of abortion.

Careful examinations, close questioning, accurate history taking, thorough analysis of symptoms, in short, alertness, as to all the possibilities in every case of moderate continued or irregular hemorrhage from the uterus, will render the number who go on to a fatal issue less and less.

SYPHILIS AS A COMPLICATION OF PREGNANCY.*

By WILLIAM T. GETMAN, M.D.,
BUFFALO, N. Y.

SYPHILIS is said to be present in France in one out of every eight of the population, and in China, one of every seven, but in England and America it is probably present in a lower proportion. There are undoubtedly more syphilitics than we realize, as there are many of the second and some few of the third generation which show little or no evidence of the infection. All practitioners know of cases among their acquaintances as well as among their patients, and the larger part of the infected women acquire the disease innocently from their husbands, who were insufficiently treated before marriage, or contracted it afterwards.

This disease is one of the most important complications of pregnancy, as it is (outside of criminal abortion) the most frequent cause of abortion and premature labor. All women having repeated abortions should be suspected and given the Wassermann test, unless there is some other satisfactory explanation, such as criminal interference, chronic endometritis, or nephritis.

According to Fournier, the existence of a parental infection results in the transmission of the disease in ninety-two per cent of cases.

Hochsinger, of the Children's Hospital, Vienna, found that out of 516 births of syphilitic infants, 253 were born dead or died shortly after birth. Of the 263 which survived, 55 died before the age of four years despite energetic specific treatment. Of the 208 remaining but 51 remained healthy. Apparently not more than twenty-five per cent of syphilitic infants grow up into comparatively normal adults.

The baby may acquire the disease during its passage through the birth canal from a recent chancre, but this is rare, and the infection usually has a maternal origin.

The spirochetes may be transmitted to the ovum at the time of fertilization by the semen, but hardly by the spermatozoa, which are too small to carry them.

Syphilis affects pregnancy according as the infection has taken place before pregnancy, at conception, or during pregnancy. If before pregnancy, in a large proportion of cases it causes abortion or premature labor, unless the maternal infection is an old and slight one or has been treated. The baby is most frequently born dead, but may be born alive showing active lesions, or none at birth but developing them within a few months or years; or if the infection is an old inactive one, or has been treated, may never show them. Some of these babies grow up, becoming so-called "delicate" children, whose resistance throughout life is lowered and easily become victims of alcoholism, tuberculosis, pneumonia, or some chance infection.

When the mother is infected at the time of conception the child is nearly always syphilitic, and we may state as an axiom that a child conceived by a woman in the course of a recent syphilis is almost fatally doomed.

When the infection takes place in the early months of pregnancy the fœtus is usually infected, but may escape if it takes place in the latter months. It is now recognized that the virulence or prominence of symptoms in a child varies with the activity of the disease in the parents, and also with the thoroughness with which the mother resorts to treatment during pregnancy.

The mother contracting the disease at the time of conception or during pregnancy will develop a more severe primary sore. The chancre being larger, more moist and may become phagodenic, but the secondaries may not be more marked and are often confined to the region of the genitals. Treatment is less efficacious for this type.

Your attention may be called to your pregnant patient, in whom you do not suspect syphilis, developing general symptoms such as anemia, fever, digestive disturbance, neuralgias, night headache, night bone pain, etc. Neuralgias development soon after marriage are suspicious. Occasionally the aspect of your patient is more suggestive of pernicious anemia or incipient tuberculosis than secondary syphilis.

Luetic women are often sterile, possibly from effects on the ovaries similar to the syphilitic testicle in men, also possibly to an endometritis. Prostitutes are notoriously sterile.

There are a number of known cases of physicians and midwives contracting chancre of the lip, by mouth to mouth insufflation in asphyxiated infants, or of the hand during a vaginal examination; and in France, where wet nurses are commonly used, it is not rare for them to become infected from a syphilitic nursling, and after acquiring a specific ulcer on the nipple, in turn infecting other children.

Colle's Law, formulated in 1837, states that: "A newborn child with inherited syphilis, even although it may have symptoms in the mouth, never causes ulceration of the breasts which it sucks if it be the mother who suckles it, although continuing capable of infecting a strange woman." This law, though true, is misleading. Of course, the mother cannot be infected when she already has syphilis, though not showing it. Numerous experiments have been made confirming this law, by inoculating with syphilis apparently healthy women who have had syphilitic abortions. All of these gave negative results, showing that these women were immune, due to a previous infection.

These experiments were made some years ago, but probably all of these cases would have given positive Wassermann reactions.

Williams reports a case illustrating the possibility of a fœtus becoming syphilitic without infecting the mother. This woman was delivered of twins, one syphilitic and one not. The

* Read before the Buffalo Academy of Medicine, January 20, 1914.

mother's Wassermann was negative, but admitted intimacy with a lover at about the same time she became pregnant by her husband.

An average of fœtal mortality, including abortions, stillbirths, and those dying soon after birth taken from some of the great European hospitals shows seventy-one per cent among middle and upper classes, where the gravity of syphilis has three factors of attenuation; namely, hygiene, intelligence, and medical care. Among the poorer classes this is raised to eighty-five per cent. These statistics were compiled by conservative men, as Fournier, Hochsinger, and Ricard; and a fœtal mortality of from seventy-one to eighty-five per cent is truly appalling.

In a stillborn child, or one dying soon after birth, there may be very few gross demonstrable lesions, except enlarged liver and spleen, but a careful microscopial examination will show spirochetes in these organs and in the lungs and placenta, or an epiphysitis in the ends of the long bones. A syphilitic placenta is paler and larger than normal and instead of being one-sixth of the child's body weight is one-fourth or more. This is a good diagnostic point to remember and may explain previous abortions and make you watchful for specific manifestations in the child.

The symptoms of syphilis in the newborn are present at birth in comparatively few cases, usually the severe infections, but when present or developing later are as follows: One of the most common is "the snuffles," a corrhyza accompanied by a hoarse cry, showing that the larnyx is implicated in the catarrhal inflammation. Others are: An eruption (papules, pustules or bullæ) on palms, soles of feet, face or other parts of the body—a syphilitic pemphigus, fissures, and mucous patches about the mouth and anus; the elbows, wrists and ankles may be swollen and tender from an epiphysitis, and from the child refraining from using them on account of pain, a mistaken diagnosis of paralysis may be made.

The general nutrition suffers and the appearance of these children is wretched. The body is wasted and skin wrinkled—the "old man" appearance. Temperature is subnormal or showing a slight elevation. Spleen and liver enlarged; there is anemia, and the child, instead of being good natured, whines and frets a great deal. Many children will not develop the usual symptoms but die of an unexplained inanition.

The prognosis is worse in hereditary syphilis than in an older child contracting it later in life, as the hereditary form has poisoned the child from its inception.

Treatment.—In pregnancy with a history of syphilis in either father or mother, or a series of unexplained abortions, treatment should be at once instituted, in the hope of preventing abortion and of lessening the virulence of the infection in the fœtus. If possible a Wassemann should be taken at least of the mother, and if positive, the treatment carried out as vigorously as though not complicated by pregnancy. Two or more doses of salvarsan can be given with great advantage and no harm, though Dr. Wende reports a case that received four doses and yet had a premature syphilitic child at eight months. Lemelaud and Brisson think well of salvarsan but consider neosalvarsan rather dangerous.

Mercury, hypodermically or in one of the various forms by mouth, should be pushed to the therapeutic limit. In hospital cases I prefer the hypodermic use of bichloride, but in private practice use Garnier and Lamreaux's pellets of protiodide. Dr. Nelson Wilson introduced me to this form of protiodide some years ago, and I find that they produce less gastric disturbance and salivation than the ordinary protiodide and permit a larger dosage.

Potassium iodide should always be used, as it acts as a solvent in the tissues, making the spirochete more accessible to the mercury.

I have a patient who had had two abortions without any apparent reason or history of lues. Two years ago I delivered her at the General Hospital of a weazened, undersized baby that died from some unexplained cause after ten days. This made me suspect syphilis and a Wassermann confirmed the diagnosis. She became pregnant soon after and under full doses of mercury and K.I. went through to term with no other disturbance than a tendency to abort at the ordinary time of her menstrual periods. I delivered her a few months ago of a well-nourished, healthy child, which has since been taking mercury and chalk and has developed no specific stigmata.

Your patient should always be cautioned to avoid exertion and excitement at the time of the menstrual period, and if pains start, put to bed and morphine used liberally either by mouth or hypodermically. Viburnum may possibly be of some value, but morphine should always be used.

Recently a woman came to me, seven months pregnant, confessing syphilis. The baby, when born, appeared healthy, but within a few days developed extensive skin and mucous lesions. These cleared up with the vigorous use of mercury and chalk and inunctions and seems to be doing well. Evidently in this case, two months' treatment was not sufficient for the child, though it may have mitigated its symptoms to some extent.

In conclusion I would urge the more careful taking of histories in our pregnant patients, paying particular attention to miscarriages, children that have died soon after birth, and a possible specific history. Also be more alert to recognize syphilis in newborn children, whatever the social condition of the mother. By doing this we may save many lives of children who would otherwise be condemned to death.

SUGGESTIONS FOLLOWING A STUDY OF THE RESULTS OF THE SURGICAL TREATMENT OF CHRONIC DUODENAL AND GASTRIC ULCERS.*

By CHARLES LOCKE SCUDDER, M.D.,
BOSTON, MASS.

THE paper consisted of an analysis and study of fifty-two cases of proved chronic ulcer. Among these fifty-two cases there were two deaths, making a mortality of 3.8 per cent. One of the deaths was occasioned by a peritonitis entirely apart, so far as could be determined, from any error in technique. The second death occurred many years ago following partial gastrectomy and a posterior gastroduodenostomy of Kocher. There have been no deaths in ordinary gastroenterostomy cases, and no deaths in any other partial gastrectomy cases.

This paper was presented in order to contribute a few facts to the gradually increasing number of returns following the surgical treatment of chronic ulcer. When the patient is said to be well it is understood that he has been free from pain, abdominal and gastric disturbances, and considers himself practically well.

There were returns reported from twenty-nine cases covering a period from two to seven years following operation. Of these twenty-nine cases 89.6 per cent have been cured and 10.3 per cent were not altogether cured. If to this group were added the cases of from one to two years following operation there is a total of fifty-four cases, the end results of which covered from one to seven years following operation. The percentage of cured cases in the combined groups were 85.5, and of those not cured, 14.7.

It will thus be seen that in this definite and small group of chronic ulcers the cases were treated appropriately by surgical measures, all medical measures having failed to cure, and a very large percentage of such cases treated by surgical measures remained well over a very considerable time. In other words, surgery is effective in the treatment of chronic ulcer of the stomach and duodenum.

The details of eight cases in which there was not a cure were given.

A preliminary report was made of the behavior of the stomach following gastroenterostomy, when studied by the X-ray after the taking of a bismuth meal.

The question as to the effect of gastroenterostomy upon digestion was discussed at some length.

The question of occlusion of the pylorus was discussed and its indications stated.

The wisdom of excising ulcer by partial gastrectomy was discussed.

The value of the X-ray in the diagnosis of chronic ulcer of the duodenum and stomach was considered.

The various theories with regard to the etiology of ulcer were presented and the bearing of Rosenow's experimental work upon ulcer was discussed.

In general it was concluded that the concensus of opinion of surgeons and physicians alike is that cases of chronic ulcer which have received careful medical treatment and have failed to respond permanently to such treatment should be treated by surgical measures. It was concluded that the surgical mortality under proper conditions is comparatively low, and that the results of surgical treatment are good.

Dr. Scudder further said:

I appreciate that there are many things in connection with chronic duodenal and gastric ulcer concerning which we are in doubt. Dr. Pilcher has inquired about the etiology of ulcer and has asked if any light can be thrown upon it. In order that an ulcer may form in the gastric or duodenal mucosa there must be a localized spot of necrosis in this mucous membrane. The cause of this necrosis is probably an embolism of some sort. The necrotic area having been established the hyperacidity of the gastric juice and the gastric juice itself acting upon the necrotic area probably cause the ulcer.

The work of Rosenow has demonstrated that chronic ulcer may be formed in dogs following an injection of streptococci obtained from the lymphatic glands in the immediate neighborhood of the ulcer in the human subject. Rosenow has demonstrated that certain streptococci select apparently the duodenal and gastric mucosa as a spot where they will produce embolism. The gastric juice does the rest through digestion of this necrotic area. These experiments of Rosenow, although not yet confirmed, may explain the association of chronic ulcer in the stomach and duodenum with tonsillar infections. Much information upon this point may be of considerable clinical value. We should inquire of all of our ulcer patients whether they have been subject to tonsillar infections.

With regard to the application of gastroenterostomy to the treatment of ulcer I would simply say that in cases of duodenal ulcer, and in cases of ulcer near the pylorus, a posterior gastroenterostomy seems to be an efficient operation. I am not yet convinced that a blocking off of the pylorus by some means is necessary in these cases. I believe that in cases in which there is a recurrence of symptoms following a gastroenterostomy a permanent closure of the pylorus is wise. I believe that a division of the pylorus should be em-

* Abstract of paper read before the Brooklyn Surgical Society, February 5, 1914.

ployed as a secondary procedure rather than as a primary procedure under ordinary conditions. The infolding of the peritoneal surface of the duodenum by careful suturing with linen sutures will hold the pylorus partially obstructed for a sufficient length of time that such obstruction may be of definite therapeutic value. In certain cases this obstruction will be all that is necessary to effect a cure together with a gastroenterostomy.

The relief from operation in cases of chronic ulcer is greatest in those cases where stasis is greatest. In ulcers situated away from the pylorus and not directly obstructing the pylorus, gastroenterostomy properly done, with or without pyloric closure, is a satisfactory form of treatment in more than one-half of the cases in which it is undertaken. The internist very properly should occupy a critical position with regard to the benefits to be derived from the surgical treatment of chronic ulcer. He very properly should inquire as to the mortality in these operations, and as to the benefits to be derived from these operations.

With regard to the mortality it has been very materially lowered in the ordinary cases of this group, and with regard to the benefit following surgical operation, there is no question that a very large percentage amounting to eighty or ninety per cent of the cases intrusted to surgical treatment under proper conditions is benefited by such treatment. In other words, the physician may trust surgery because of a lowered mortality and because of a very definite benefit accruing to his patients suffering with an intractable chronic duodenal or gastric ulcer.

THE ECONOMIC IMPORTANCE OF DISEASES OF THE EAR IN SCHOOL CHILDREN.*

By J. E. SHEPPARD, M.D.,
BROOKLYN, N. Y.

THE cardinal symptoms of ear diseases are deafness, tinnitus, pain, discharge, and, in smaller degree, vertigo, and according as they produce these symptoms do diseases of the ear assume an economic importance among school children. So relatively infrequent among children are tinnitus and vertigo that they may, with propriety, be withdrawn from consideration in a paper of this scope. This leaves then deafness, pain, and discharge, as the symptoms of which we must take note, of which the two latter assume importance largely because of their significance—they indicate the probable presence of diseases which may have as a result danger to life, and impairment of hearing.

Pain, or earache, may indicate amongst school children, dentition, defective teeth, acute inflammation of the external auditory canal (boil), or acute inflammation of the middle ear (drum cavity or mastoid) either catarrhal or suppurative, and frequently, particularly if recurring at longer or shorter intervals, becomes strongly indicative of adenoids alone, or with hypertrophied tonsils, and therefore a symptom the proper interpretation of which may mean much to the growing child. Moreover, a child with earache, with or without the frequently accompanying middle ear abscess and discharge, is unfitted for a longer or shorter time by each attack to attend school; hence pain in the ear takes its place as one of the factors in the problem of retardation of school children, concerning which Gulick and Ayres, in their recent book on "Medical Inspection of Schools," state that their studies lead them to the conclusion "that the greatest factor affecting the problem of the child's progress through the grades is that of regular and continuous attendance."

Discharge from the ear *may* arise in the external auditory canal, with an intact drum membrane, and virtually normal hearing, in which case it usually indicates improper hygiene of the ear—too much cleansing with soap and water followed by imperfect drying of the canal. A running ear, however, *usually* means middle ear suppuration, acute or chronic, with, always in these conditions, a perforation of the drum membrane, and more or less impairment of hearing. In a goodly proportion of these cases, moreover, we may expect to find a throat more or less obstructed by adenoids, which by their presence seriously interfere with a cure. Chronic suppurative inflammation of the middle ear is a constant menace to the life of the person so affected on account of its proximity to the brain and its covering membranes, and it is shown by statistics to be present in two per cent or more of all school children.

We come now to the symptom of by far the greatest economic importance, viz., defective hearing or *deafness*. Cornell makes the statement that "defective hearing is the physical defect constituting the greatest bar to progress in school." Hearing sufficiently impaired to be of consequence in school work is found to exist in from two per cent or three per cent in New York school children to seven per cent among those in Boston, and up to twelve per cent in Edinburgh. Deafness among school children may for all practical purposes be attributed to adenoids, in so great a proportion of cases is this growth the underlying factor. Add to this the fact previously stated that adenoids are the frequent cause of earache, and a very usual factor in the chronicity of middle ear discharge, and I would seem to have sufficient reason for a brief discussion of this adenoid question. I would include in this the element of enlarged tonsils without on

* Read before the "International Congress of School Hygiene," Buffalo, N. Y., August 25-30, 1913.

each occasion a specific mention thereof, since adenoids are present in almost all cases of hypertrophied tonsils, while in about one-third of all cases of adenoids are the tonsils diseased. A few statistics may be quoted from an article by Allport, of Chicago, published in the *Journal of the American Medical Association,* last month (June). There are, he says, in this country about 20,000,000 school children, of which seventy-five per cent are suffering from some partially or completely remediable defect which is more or less interfering with their physical, mental, and moral advancement; 1,000,000 have defective hearing; 6,000,000 have operable adenoids and tonsils. There are about 260,000 schools in this country, valued at $850,000,000 and costing about $500,000,000 a year to maintain. In New Jersey alone there are $44,000,000 invested in public schools, costing $13,000,000 a year to run. There are 500,000 pupils with a possible attendance of 71,000,000 days, and yet, owing to absences, only 9,000,000 of these days were utilized. Seventy-five per cent of these absences was due to sickness, representing a loss to the State of about $3,750,000. Undoubtedly, proper medical school inspection would have largely obliterated such an intellectual, moral, and financial loss to the State. In New York City with a school population of 650,000, thirty per cent of the children are two years behind their grades, and ninety per cent of this is due to abnormal eyes, ears, noses and throats. Dr. Cronin found in one New York school 150 defectives, who were backward in their studies and incorrigible in their characters. One hundred and thirty-seven had bad tonsils and adenoids, and thirteen defective vision. After these conditions were removed, all of their characters and school standing rapidly improved. A child whose eyes prevent comfortable study, or whose deaf ears render easy communication with those around him impossible, becomes retarded in school, discouraged and careless, truant and idle, and ultimately very likely leaves school, forms habits of idleness and vice, and not infrequently joins the criminal classes, and becomes an expense, and a charge to the State in reformatories and prisons. To permit such children to follow such a program is neither economical, philanthropic, or wise.

Children who do not keep up with their grades are called "repeaters." They stay in one grade or room, term after term, and hardly advance any in their studies. There are about 3,000,000 such children in the United States, and it costs about $100,000,000 to educate or try to educate them. A very large majority of these 3,000,000 repeating children can be kept from repeating by relieving them of their physical diseases or defects. All repeating children are a detriment to everybody in the school room, and they should either be cured of repeating, or else placed in separate schools. They frequently hold back an entire class, for the teacher either has to neglect the balance of the class for their benefit, or the progressive scholars are taught at the expense of the laggard.

To the layman one of the most apparent evidences of adenoids is more or less obstruction to breathing through the nose, and this symptom, when sufficiently marked to be noted by school inspectors, and to warrant official notice to parents, exists in from six per cent to twenty-five per cent of school children, greater among the poor and the young. The maximum figure for the well-to-do is twelve per cent and this is the minimum of prevalence among the poor. Cornell, who has done much investigating in this line, says, "remembering that the statement is necessarily made on individual judgment, it has been found that three-fourths of all adenoid cases suffer in some degree from defective hearing." If this be true then Allport's estimate of 6,000,000 children with adenoids and tonsils in the United States should show 4,500,000 with defective hearing instead 1,000,000 as claimed by him. The effects of defective hearing are stoop shoulders, and flat chest, which result in an increased liability to tuberculosis, lowered scholarship from a moderate degree of deafness and marked mental deficiency with possibly defective speech and deaf-mutism when the deafness is absolute, blank facial expression from being cut off from what is going on around them, and a peculiar temperament due in part to the introspection which isolation creates, and in part to suspicions engendered by friends' and neighbors' actions which are seen but imperfectly comprehended.

I doubt not that the membership of this Congress is thoroughly convinced of the great value from every viewpoint of medical inspection of schools, and the harmonious co-operation therewith of the teaching body, and believe that large dividends are returned therefrom on small investments. It seems probable that the total annual expenditure for medical inspection of schools in the United States is at the present time but little over $500,000. The money saved by enabling thousands of children to do one year's work in one year, instead of in two or three years, would greatly exceed the total expense of examining all children in all of our schools. We now know the major effects at least on intellect and temperament of some defects, adenoids, decaying teeth, and minor physical deformities; and we also know how much deviation from normality can be readily and inexpensively detected and remedied, but there are whole states where no advantage whatsoever is taken of this knowledge, and in practically every state in the country there are communities in which

absolutely no attention is paid to any of these matters.

Yearsley, of London, in an article on "Deafness in Relation to Medical Inspection of Schools," advises general examination of all pupils by the school physician, in the presence, and with the help, of the teacher, and the putting apart of all deaf cases for further examination by an official otologist; of all such cases fifty per cent can be cured, and a large proportion of the remainder can be more or less improved. "It means an augmentation of the number of normal, self-supporting citizens, and a corresponding decrease of paupers and criminals—actual and potential." The slightly deaf, and the better cases of the semi-deaf can be perfectly well taught in special classes in ordinary elementary schools; the former in even ordinary-hearing classes if they be placed in the front rows, and the teacher gives them attention. He recommends for the semi-deaf, in each school district one or two special classes for those too deaf to obtain full advantage of the education offered them in an ordinary class, and the placing of them in the charge of an elementary teacher who is qualified also as a teacher of the deaf.

Along the same line Dr. John Dutton Wright, the well known teacher of the deaf in New York City, says, in the latest number of the *Volta Review* for June, 1913, that a very large number of pupils in our public schools are struggling along with defective hearing in the regular classes of forty or fifty with a single teacher. They should have special attention given them in small groups of fifteen or twenty. Examination of the more than half a million pupils in the public schools of New York City revealed the fact that one in each 100 has sufficiently defective hearing to be seriously handicapped in the regular work of the school; yet these pupils are in no sense candidates for an institution for the deaf. They do not belong there and should not be sent there. Most of the public school buildings in New York contain about 2,000 pupils. There are, among these 2,000, twenty pupils then, whose education should receive more special and personal attention than is possible where one teacher is responsible for forty or more pupils.

Diseases of the ear seem, therefore, to be of economic importance in school children because,

1. In their acute forms they lead to a certain amount of absence from school, and absences are a most potent factor in *retardation.*

2. In their suppurative forms they become a distinct menace to the life of the individual.

3. In their more chronic forms they result in defective hearing, *the* physical defect constituting the greatest bar to progress in school.

4. Through impairment of hearing they cause a large proportion of the total number of defectives and incorrigibles, truants, and idlers, a portion of whom go later to join the ranks of the criminal classes, becoming an expense, and a charge to the State in reformatories and prisons.

5. Through impairment of hearing they swell largely the ranks of the so-called "Repeaters," to educate whom costs an entirely disproportionate amount, besides interfering materially with the education of their normal hearing classmates.

6. By virtue of their causation, and through impairment of hearing, they are an element in the production of stoop shoulders and flat chests, which result in increased liability to tuberculosis.

7. Finally, sufferers therefrom with impaired hearing require for their adequate education separation from the normal hearing, and teaching in limited classes, and with extreme deafness residence and teaching in special institutions where articulation and lip-reading must be taught in order to avoid the otherwise resulting deaf-mutism.

FIELD WORK IN THE STUDY OF EPILEPSY. THE VALUE AND IMPORTANCE OF SYSTEMATIC WORK AND TABULATION OF FINDINGS.*

By DAVID F. WEEKS, M.D.,
SKILLMAN, N. J.

THE far reaching importance of systematic field work was not fully realized at the time this work was first undertaken at The Village some four years ago.

Starting with our patients, about whom little reliable data is available, the field worker visits the home and learns from the relatives, friends, physician, school teacher and neighbors, facts which are charted and tabulated in such a manner as to make available for study and diagnosis, material which cannot be obtained otherwise. It was soon apparent that the information gathered by the field worker was of much more value than had been expected, and, as additional material is collected and tabulated, the value increases.

Studies of family histories made by the earlier students of epilepsy were, for the most part, based on the uncorroborated statements of interested relatives or friends of the patient, in contrast with the present method of verifying these statements by field work. A careful continuance of systematic field work will add materially to known facts, and make present and future studies of far greater value.

Many cases of idiopathic epilepsy have been so recorded because the records were based on

* Read at the Joint Meeting of the Seventh and Eighth District Branches of the Medical Society of the State of New York, at Sonyea, September 25, 1913.

information obtained from those who did not know, or who for some reason declined to tell all the facts in the case. The field worker not unfrequently meets at the outset of the investigation with the statement that "there is no other person in either family like 'Willie,' not on either side," to be rewarded later in her search for facts by finding an aunt, uncle, or some old family friend who can tell of one or more members of the family who were "queer" or had "fainting spells." There is little doubt but that epilepsy occurring in the offspring of apparently normal persons, is due to the fact that these parents descended from a strain carrying the epileptic taint, in other words, these persons are, biologically, "simplex."

In the field worker's investigation, all facts bearing on the health, cause of death, of all members of the immediate family and their consorts, are inquired into, and the facts learned, recorded. In this way, the histories afford opportunities for study of the behavior of many traits.

On reading the charts, one cannot help but be impressed with the frequency with which certain traits crop out in succeeding generations. The writer believes that wherever this method of gathering histories is used, the research should be extended to include all diseased conditions, evidences of genius, etc.

To make the available knowledge of greatest value, it is important that the method of recording and tabulation should be standardized. Looking toward this end, a committee met at Skillman and formulated a plan which was published as Bulletin No. 2 of the Eugenic Record Office. The experience gained since this time has led to the adoption of the following methods at our institution.

The material gathered is first written up after the following form, charted and filed with the case history.

Form for the Written Heredity History.

Name Consecutive No. File No.

Source of Information.

a—name; b—relation to patient; c—address

The patient and his home.

A—Description of the patient.

B—Housing conditions; tenement, separate house, number of rooms, general condition.

C—Home treatment: good, fair, bad, neglectful.

D—Number in the household: adults, children; number of defectives, number normal.

E—Financial condition: good, moderate, poor, very poor.

F—Neighborhood: good, fair, bad.

G—Education: time in school, grade attained, reason for leaving.

A description of the individuals on the chart, covering the following points: name, sex, date and place of birth, mental and physical condition; if married—a description of consort and children; if immigrant—date of immigration; if dead—cause and place of death; is written up under the following headings:

1. The patient's fraternity. (Patient's brothers and sisters.)
2. The patient's father and his fraternity.
3. The patient's father's father and his fraternity.
4. The patient's father's mother and her fraternity.
5. The patient's mother and her fraternity.
6. The patient's mother's father and his fraternity.
7. The patient's mother's mother and her fraternity.

Next the chart and history are indexed in such a manner as to include:

1. Individuals—by relation to the patient and trait.
2. Matings—by type and offspring.
3. A cross index for name, locality and trait.

Heredity Analysis Card.

NAME Age Chr. B-S. No.

F. FF. FM. M. MF. MM Birth-Rank

	E	F	I	G	S	A	T	B	D	P	M	Ne	C	Sx	W	N	d inf	d yg	Un	Mis	Sb				Total
Patient and Sibs.																									
Father and Sibs.																									
Father's Relatives																									
Mother and Sibs.																									
Mother's Relatives																									
TOTAL																									

NOTES

4. Individual names, with locality and chart references.

5. References to towns, counties, states and foreign countries.

6. Institutions represented on the charts.

7. History of diseases, defects, etc., by case number.

All of the above facilitates the locating of the defective strain, and tracing families from one pedigree to another.

The patient, his parents, brothers and sisters, father, mother, uncles, aunts, and other relatives are classified on the "Heredity Analysis Card" under the following twenty-one headings:

E—epileptic
F—feeble-minded
I—insane
G—gonorrheal
S—syphilitic
A—alcoholic
T—tubercular
B—blind
D—deaf
P—paralytic
M—migrainous
Ne—neurotic
C—criminalistic
Sx—sexually immoral
W—wanderer
N—normal
d-inf—died in infancy
d-yg—died young.
Un—unclassified
Sb—still birth
Mis—miscarriage

with totals and notes.

Age chr.—chronological age.

B.-S.—mental age by Blinet Simon test

This analysis shows at a glance the make up of each family, while for the purpose of more intensive study and reference, a further analysis on the "Mating Card" brings all the cases of the same type together.

The epileptic and feeble-minded strains are traced by cross-indexing "trait, name and locality." Foreign born patients and the native born of foreign parents are registered by nationality. The name index by which the name of each individual charted is indexed with case and chart reference, has made it possible to trace and establish relationship between patients hitherto unknown and unsuspected. We look forward to the time when we will show that many of our States' defectives have arisen from the same defective strains.

A registration of the epileptics in the state is kept on the "County Registration Card," which includes:

1. The full name.

2. Date of birth.

3. Date admitted to our institution (if an inmate).

4. If applicant, date application was made at The Village.

5. Name and location of other institutions caring for the case.

6. If at large, where,—and when possible, why.

7. Person chiefly interested in the patient, or furnishing information and remarks.

MATING CARD.

f	m								Mating		x
Case No.											Total
Total Offspring											
E											
F											
I											
Tainted											
N											
d inf											
d yg											
Others											
sb mis											

REGISTRATION CARD.

COUNTY

NAME	born	Village	appl'c't	cared for in	at large	Remarks

These cards give as complete a census of the epileptics in the state as it is possible to obtain, and are arranged in such a way that totals can be ascertained at any time. The co-operation of the State Department of Charities and Correction, The State Board of Education, the Institutions throughout the State, General Hospitals and Practicing Physicians, has facilitated the keeping of the register. On September 10th, the cards showed 1,759 epileptics registered; of these 363 are in insane hospitals, 50 in other institutions, with 909 at large, of which number 29 were reported as excluded from the schools because of their epilepsy.

The recent endeavor of Dr. Rosanoff to show the dominance of manic depressive and dementia præcox, forms of insanity, over epilepsy, bids fair to prove a valuable contribution to the study of the inheritance of these diseases. With a desire to establish, if possible, the dominance of epilepsy over feeble-mindedness or vice versa, a study of the offspring from the available matings in which one parent was epileptic and the other feeble-minded, has been undertaken at the Village.

The results of this study are shown in the accompanying table. In the 16 matings studied, 82 children were born, an average of over 5 to a mating. The smallest fraternity consists of one child (2 cases) the largest of 12 (1 case). Of the 82 children, 15 or 18 per cent died in infancy (before 2 years of age) and 1 per cent died young (between 2 and 14 years of age) 10 or 13 per cent were too young for classification. Of the other 56, 28 or 50 per cent were epileptic, 27 were feeble-minded and 1 was insane. No definite conclusion can be reached at this time as to the dominance of epilepsy or feeble-mindedness, one over the other, for want of positive knowledge as to the kind of insanity in the one case, lack of data showing whether the epileptics were feeble-minded before developing epilepsy and the impossibility of telling whether the feeble-minded are or are not epileptics in whom the trait lies latent.

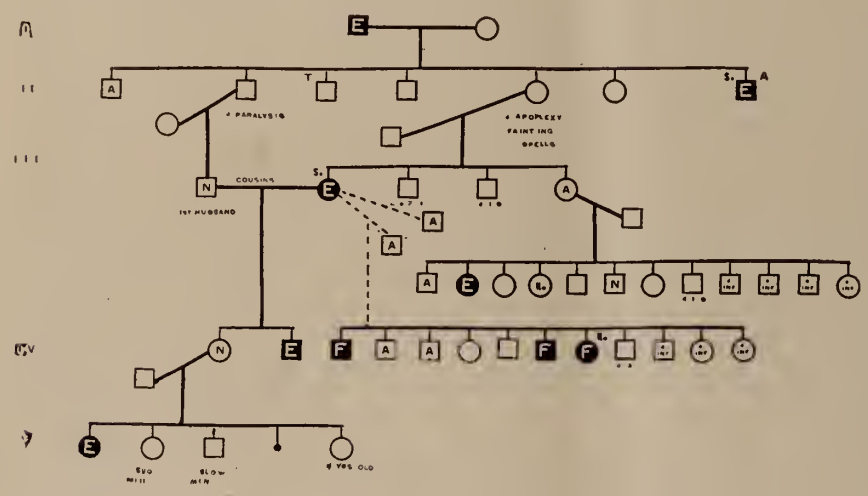
OFFSPRING OF SIXTEEN MATINGS OF THE TYPE EPILEPTIC BY FEEBLE-MINDED, CLASSIFIED ACCORDING TO THEIR MENTAL AND NERVOUS CONDITION.

Case No.	FxE 3161	FxE 582	FxE 2843	FxE 2854	FxE 3055	FxE IX	FxE 2016	FxE 5417	FxE 598	FxE 1339	FxE XXX	FxE 1981	FxE 592	ExF XII	ExF 2233	ExF 3864	Total	Per Cent
E	1	1	3	1	2	2	1	4	7	0	0	0	3	1	2	0	28	34
F	2	0	2	1	3	5	4	0	0	1	2	0	2	4	1	0	27	33
I	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
Tainted	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
d-inf	1	0	0	1	1	3	1	1	1	0	2	1	2	1	0	0	15	18
d-yg	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
unclassified	0	0	2	0	0	2	0	1	0	1	0	1	0	2	0	1	10	13
sb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
mis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total off	4	1	7	3	6	12	6	6	8	2	4	4	7	8	3	1	82	100

E—epileptic; F—feeble-minded; I—insane; N—normal; d-inf—died in infancy (before 2 years of age); d-yg—died young (before 14 years of age); sb—stillbirth; mis—miscarriage.

ExF—father epileptic, mother feeble-minded. FxE—father feeble-minded, mother epileptic.

That epileptics are often feeble-minded and that feeble-minded persons frequently develop epilepsy is too well recognized to need comment, but as many epileptics are not recognized as such, due to the fact that the convulsion by which the disease is generally recognized, has not developed, should be brought more forcibly to the attention of the profession and laity. Our family pedigrees furnish many examples of persons who have exhibited most of the characteristic symptoms of the disease except the convulsion phenomena. This class of cases is illustrated in the following pedigree.

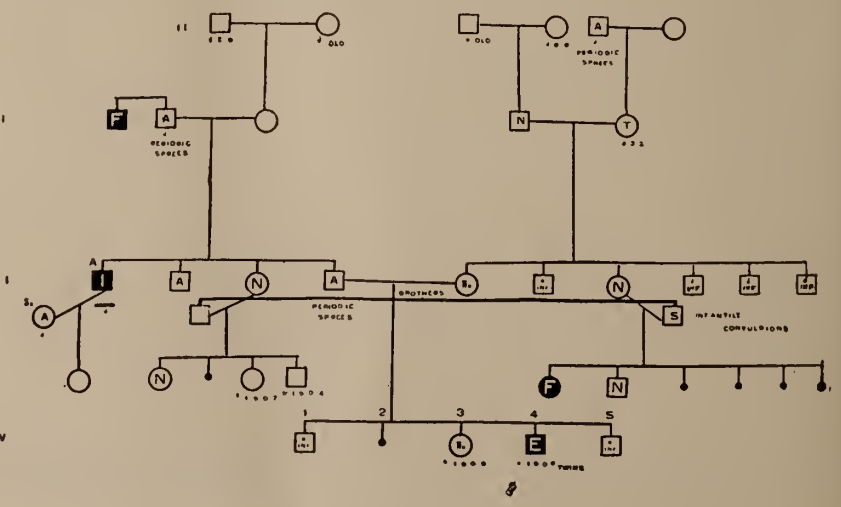


No epileptics are recorded in the history until the fourth generation here; the fourth child in the fraternity is an epileptic idiot. In the preceding three generations are the individuals who exhibit the epileptic characteristics without the typical convulsion. The maternal great grandfather was an alcoholic of the type who did not drink steadily, but went on periodic sprees (equivalents), the paternal grandfather and the father of our patient were also men of this same type.

This pedigree is interesting because of the presence of epilepsy in each of the five generations and because of the progressive mental weakening of the epileptic in each of the succeeding generations. The man in the first generation had only a few attacks, did farming on a small scale and carried on his business successfully. The second was alcoholic and a sex offender, having lived in poverty all of his life dependent upon his various wives. The woman in the third generation is not ambitious, has a low sense of morals, very little affection for her children, and is satisfied to live under miserable circumstances while able to do good work under the direction of others. In the fourth generation, the woman can perform simple household duties only. The boy in this generation died at the age of four, having had convulsions almost continuously from a few hours after birth up to the time of his death. In the fifth generation, the girl is an imbecile, incapable of caring for herself.

It is stated in the archives of pediatrics that there are about one-half a million insane, epileptic, feeble-minded, blind and deaf, with 80,000 prisoners and 100,000 paupers in the United States, who are supported at a cost of over one hundred million dollars a year. The most casual examination of the tremendous expenditures for the care of the defectives and delinquents of any state, should convince all thinking persons, not only of the wisdom, but importance of providing funds for a study of the causes making these annual expenditures necessary. This cannot be better studied and accomplished than through the medium of field work.

The problem of caring for our defectives is of such importance as to not only justify, but demand state and national co-operation and systematization of the work. This should include a national repository for all pedigrees, in charge of a competent director, with a sufficient corps of trained assistants to make available for immediate use the knowledge gained. In this way defective strains will be more readily traced and by proper united efforts, eradicated.



Discussion.

Dr. Gertrude E. Hall, Bureau of Analysis and Investigation, New York State Board of Charities: It has been a pleasure to listen to this brilliant and instructive paper on "Field work in the study of epilepsy," by one who is a pioneer and a leading authority in the subject. The purpose of my discussion of Dr. Weeks' paper will be to show to what extent New York State follows the methods of field work outlined.

The statistics quoted by Dr. Weeks to show the prevalence of pauperism and defectiveness in the United States are impressive. New York State has three co-ordinate departments to supervise its institutions, viz., the State Hospital Commission, State Commission of Prisons and the State Board of Charities. The expenditure for institutions under the supervision of the latter alone has increased of late at the rate of a million dollars annually, and is now $25,000,000 a year. The number of inmates in many of the state institutions is limited only by the bed capacity, and the cost of new buildings and maintenance is so great as to be a tax on the state's income. There is surely need, as Dr. Weeks said, to study the causes of dependency, delinquency and defectiveness, and to this end the State Board of Charities established in July, 1911, a Bureau of Analysis and Investigation, to analyze the rich material now in the state's archives and to gather further data by the investigation of family pedigrees. The files of this bureau are intended to be the permanent repository of all data bearing on the subject, and private investigators as well as institutions have signified their desire to co-operate with the bureau, and to place such data as they gather in its archives for permanent custody. The New Jersey system of field work has developed about each institution as a nucleus. The New York system is a state and not a local system.

Dr. Weeks made an important point when he said that all family traits should be studied and recorded at the same time. In chemistry, where elements can be precipitated in a retort, this would not be a proper method, but human nature is complex, and its elements cannot be so handled. It is impossible to get a correct picture of one trait without taking the others into account. Furthermore field work is costly and it requires much patience and co-operation on the part of the family investigated. For these reasons the bureau holds that no family should be field-worked more than once within a period of years, and that all possible data should be compiled at the time of a given investigation.

We also endorse what Dr. Weeks said about standardizing method, so that results of field work in different states will be comparable. Our method of charting and of record is essentially like that described. When an investigator diagnoses a case as "F" (feeble-minded), or "E" (epileptic) or "A" (alcoholic) the reason for the diagnosis should be fully recorded. Field workers must also report all interviews with persons who are the sources of their information, setting down, so far as possible, the phraseology used. This is required, because at the present time some of the symbols used are too general in content, and the time will come when they will give way to more precise definitions of specific mental traits. We desire the information accompanying charts to be complete enough so that the charts can be re-lettered in the light of new developments, and will not have to be thrown away because we cannot tell what kind or degree of feeble-mindedness was connoted by a given "F."

The final analysis of the data of each defective investigated is arranged under four categories, viz., environment, heredity, life history, beginning with the conditions at conception and birth, and reactions to psychological tests.

Dr. Weeks said he hoped to show that many defectives have arisen from the same defective strains. Such discoveries are thrilling to field workers. When the bureau was new and the first piece of field work was undertaken, there was a question whether to begin with a family which had seven defective members in one almshouse, or a family from another county which had three feeble-minded sons in the Rome State Custodial Asylum. The latter having been chosen, the first day's field work disclosed the fact that the mother of the three feeble-minded boys at Rome was a sister of the woman, who with her illegitimate progeny, was an inmate of the almshouse. The feeble-minded element in this family entered New York State from New Jersey!

Dr. Weeks spoke of his desire to learn whether epilepsy is dominant over feeble-mindedness or vice versa. He has at hand the largest body of data that has yet been gathered on the subject of inheritance of epilepsy, and I hope that success will soon crown his efforts in the investigation of this most difficult subject. Surprisingly little is known in an exact way about human heredity. Practically the whole problem lies ahead of us at the present time. It is interesting to hear Dr. Weeks speak of some persons as epileptic who do not show the usual symptom of convulsions, and this reminds us of Lombroso's hypothesis that some criminality is due to epilepsy, although without the outward convulsion.

In closing I would emphasize the wisdom of Dr. Weeks' suggestion of the need of state and national bureaus of defectiveness. Our population is unstable; here today, somewhere else tomorrow. It seldom happens that a

feeble-minded father, mother and their child are all born in the same town, or that persons are committed to institutions from the same town in which they were born. The movement of population in this country is westward. All the hereditary defectiveness in the West had its origin in the East, just as eastern defectiveness had its origin in Europe. When the bureau studied the pauper data of Elmira, N. Y., it was found that a surprising number of these paupers were born in Orange County, to the east of Chemung County. Erie County does not produce many of its own paupers, but it gets them from neighboring places and from Europe. If the East could eliminate hereditary defectiveness, the West would not be troubled with the problem. If New York and New Jersey could exterminate the hereditary forms of feeble-mindedness and epilepsy through segregation of those afflicted, it would mean a gain not only to the states in question, but would confer a benefit on Pennsylvania, Illinois, Michigan, and on those states whose population is recruited from the East.

CHILDREN'S SUPREME COURT. "UNIFICATION OF CHILD WELFARE FORCES."*

By SIEGFRIED BLOCK, A.M., M.D.,
BROOKLYN, N. Y.

THE problem of the care of the exceptional child is so tremendous that in order to properly do justice to it each case would obviously involve so much intricacy on account of the many individual characteristics and each would demand its own investigations and treatment. The hundreds of phases of personality would entail close study by experts and ultimately each child would have to be sent to a different institution. Such might be the supra-ideal and impractical state which would be forced on mankind.

To be of real practical value to the largest proportion of individuals, the writer desires to emphasize that there should be some one Board of sufficient number appointed or elected who should control the future of all children. This Board should have full power to treat any case in all its phases. The child labor laws, the truancy laws, the physical defects, improper guardianship, orphan asylums, custodial institutions, reformatories, special schools, religious schools, charities, and every other organization that has in any way to do with children should be under this one supervisory Board.

Responsibility would be placed on one body and there would be no shifting of duty or blame. Statistics of all kinds could better be compiled for comparative study and the expense of running one main bureau would not be so large as when several are working and intercrossing their data. It is a fact that in all countries the statistics for children are only for a part of the entire children's population. The question of proportions are very liable to cause an error great enough to order the conclusions. Under the new scheme reliable experiments could be tried engross. The public would know definitely (by the reports of this bureau) what is actually taking place without having to study just exactly to what department of the government this or that matter belongs. Since all children of school age would come under this Board for any point, one just communicates with the secretary.

This Board would be of such moment to the people that at elections they would choose its members with the same zeal that a mayor, governor, or any other high official would be chosen. This general plan is of just as much feasibility in a small rural district as in a large city.

As it is at present in many doubtful cases, children who are exceptional (perhaps to be sent to institutions and the parents objecting) the Children's Court is asked to enforce action because the child is a hindrance to the proper regime of the school. What is to be done? The parents in most cases take precedence over the Court, and the child is allowed to play on the street just as he wishes. Crime is bred and a poor citizen is developed. This era of eugenics demands that we prevent crime in preference to curing it.

A few instances may serve to illustrate the point. A boy is arrested for stealing a teacher's pocketbook. The case comes before the Children's Court Judge to whom this is a minor offense. No matter how riled the teacher may be, if the Judge suspends sentence on account of the boy's first offense, the boy might go back to the class room. What kind of order and respect can the teacher in such an instance enforce from her scholars? The writer has seen a number of just such cases.

The infringement of one city department on another can well be illustrated by many cases most of us have known. For instance, the relationship of health and school departments; the health departments usually employ nurses or physicians to seek the physical defects or contagious diseases among the pupils. The school department (that is the teachers) finds a child does not get along well and is below the average in some branches. After the health department finds the defect, the school department must arrange its tuition accordingly—the chairs must be raised or lowered, the room made lighter, airier, cooler,

* Read at the Fourth International Congress School Hygiene, Buffalo, August, 1913.

NOTE.—The writer has purposely omitted all kinds of statistics because he felt that they would only detract from the point in question.

etc., even then the health department often criticises the school department for the lack of courtesy, or because health comes before education, etc. The results are as we all know more rivalry not of who can do the most for the child but personal jealousy.

Now add to these two departments the third, the department of justice. The Children's Court may advise to the contrary of either of the two others and we have a melange. The Court may suggest one thing and the parents refuse, and in most countries the parents have supreme authority over their children so long as they do all in their power to educate and nourish them. The Court in very many cases are absolutely helpless. Thus often the health department and the educational department both apply to a court with limited power—add the independent institutions.

Of course, the privately conducted asylums who collect funds from religious or other philanthropic organizations justly claim the right to take or refuse whom they wish. In a way all of the beforementioned bodies are at their mercy. After months of energetic work in preparing a case, and the Judge of a Court suggesting some custodial care, the asylum has a right to say "NO."

When the various charities departments are invoked for their aid, they may decide the case is not a proper one for charity or suggest it is up to the Court to decide and not a city department. The parents won't accept a certain suggestion because their children are "too good" for this or that institution, or may be the parents happen to be too proud, too stubborn, or even ashamed of a disposition as advised. Thus one may continue almost to each branch of the children's questions and the intermingling of powers and forces gives a resultant which acts for such inferiority that the progress of civilization is markedly encumbranced.

A congress such as this should take steps to advise all cities, all villages of all countries to have a central Board which shall be a QUASI-SUPREME COURT for children and everything appertaining to them. As an idea it may be made up of elected members who, like United States Senators, change only a few members at each election, never leaving an entirely new body come into control. It is generally acknowledged that commissions are the ideal form of government for every department of a state or city. Among the finer details may be mentioned—that these bodies could send their representatives to a county body who are a unit of a state or provincial department, which in turn is a branch of a national department or commission.

Briefly let us consider a few cases to actually illustrate these points. Two boys in a Brooklyn school had no respect for teacher or principal; on many occasions they had shown this. The teacher refused to have them in her class, and the principal put them in different class-rooms at various times. One day the principal found the larger of these two boys brutally assaulting the smaller. The principal had both boys arrested. On examination both boys were found to be feeble-minded and distantly related. The families were too poor to feed or dress them properly, yet, they were too well off to be objects of charity societies. When the Judge had to decide what was to be done with these two boys, although he knew all the facts of the case, he could only send them back to school.

It so happened in this particular case, the principal announced to the parents of the children that under no circumstances would she accept these children in her school again. The parents defied the principal and said she must, they would make her do it. And although the parents did not bring up this point in the court room, the principal was placed in such a position that the boys are really in no fear of her. They tell their friends and the resulting lack of discipline on account of two feeble-minded boys is beyond an outsider's realization.

With a Board as described, the case would have been considered from a different viewpoint—all the Judge could note was two stupid, unruly boys who had a battle. Being their first offence and the charge after all not so serious in the Court's eyes, the prisoners, after a lecture, were ordered back to their class room.

This Pseudo Supreme Court would realize the true state of affairs from the teaching standpoint, even if the crime committed was not so serious, and the teacher would be better protected. Although this Judge was anxious to aid the teacher, he really did not know where to send the boys. Their crime was not so serious to send them to a House of Refuge or other prison. They did not play truant, and therefore could not be sent to a truant school. No charity institution would accept them because the parents claimed they supported them properly, moreover, the boys also agreed to this. They were no orphans and could not be placed in an orphan asylum. For similar reasons since they were not blind, deaf or crippled, they could not be placed into such institutions, and after all the Judge acted about as any fair jurist would in like cases under the present regime.

We have a Federal Children's Bureau whose object is to act in an advisory capacity, and to gather statistics of information for any desired purpose; while this powerful QUASI-SUPREME COURT would have power in every land where it is in existence. It would not infringe on any present existing bodies, would be made up of certain units from the

various sections of the land, and would be able to smooth out many entanglements that so often arise. Just the case of these two boys would come up before such a department. The parents would have to concede to the department's wishes, and the children could be placed as these authorities direct. Personal liberty would be somewhat lessened; but it is a rule that the more civilized a land, the more laws and restraint are enforced and the cutting off of freedom is the result.

In this particular case, what harm would come from taking improperly nourished children from ignorant parents and placing them where the best that is in their bodies and minds could develop? A method as explained before against the policies of most nations at present. A State often curbs personal liberty. Only the quantity of restraint is the question. Monogamy is thought by many persons to be a most cruel imposition of the law, yet, it is carried out by all civilization according to the maxim that is best for the public. Children who are feeble-minded, syphilitic, or tubercular, could thus by statute be segregated and their intermarriage in a way hindered, and often cures performed.

Per example: A boy whose parents are comfortably situated has a tubercular hip. The writer has tried to influence the parents to aid this boy. Although he has discharging abscesses they will not help him. They read there is no established cure for tuberculosis and they would not waste time, hope or money on any experiments. Food, amusements and clothes in this particular case are plentifully provided, but the poor boy is getting worse because no one tries to help him medically.

There is no way of enforcing a law to have a minor examined mentally if no offense has been committed and the parents object to such a procedure.

Even if various legislatures passed individual, local laws and the central governments have a composite Board to see that they are carried out, the problem would become much more complex than with the suggested plan. Courts are always overcrowded with cases and to add to these new ones would be an unreasonable hampering of justice. We need union of all forces. We need new stronger power. We all know that parents many times think they are conversant with their child's necessities, but this Board would be in a better position to judge than any present Children's Court. The broader questions not only of law but of humanity could come up before them. Even if judges try to use human endeavors opposing counsel may prevent much good work that could be carried out by arbitrary Board with extreme powers.

The Board of Health often takes upon itself in many of the larger cities, the powers to enforce quarantine. They surely are justified, but a recent case in the City of New York may serve to illustrate the uselessness of this power when put to a test. A family of three children and a mother all had diphtheria and scarlet fever. Four weeks after the initial onset in the family one of the children still had some desquamating scales. They were warned by the Health Department official not to leave their apartment. They took no notice of the warning, and the Health Department took the child away to a hospital for contagious diseases. Legal measures were about to be instituted and for some unknown reason the child was released. The writer does not know whether the Health Department officials decided in order to place themselves at the mercy of the Court would be hazardous and it was simplifying matters to let the child go home. What an effect this must have on the friends and relatives of the boy's family.

It seems unnecessary to give statistics on this question. The enormous expenditures of money and the large proportion of feeble-minded persons who are not taken into custody are well known.

If the writer has made this one suggestion clear before you he feels that a good reform was attempted which some day must come.

In conclusion, this Board could be paid out of small assessments on each of the local city departments in any state, who in turn donate pro rata to the State Departments and these to the National Commissions. The burden would hardly be any greater to the taxpayers, but it does seem that more official work must result.

In this country at least an actual saving may be brought about by unifying so many different phases of child-life and preventing reduplication of work. Neither state rights nor local governments are unjustifiedly infringed upon and interstate relations are obviously strengthened.

This, after all, affects the exceptional children in such a degree that the populace will see the problem as it really stands. The sooner this results, the quicker will we be able to ask plebeians to help enforce the laws of eugenics and conversely these same plebeians will demand more knowledge of them.

GONORRHOEAL VACCINES. REPORT OF ACUTE AND CHRONIC CASES.*

By S. M. STRONG, M.D.,
BROOKLYN, N. Y.

IN considering gonorrhœal vaccine and its use it is by no means my intention to cover this subject in detail, but simply call attention to a few points as it applies to the cases I will mention.

* Read before the Clinical Society of the Surgical Sanatorium, April 14, 1914.

Vaccines and vaccine therapy are in their infancy. We understand but little of the biology of bacteria, the action of vaccines, or the doses of the same.

Each individual to be treated must be considered separately, his particular resistance considered, and the virulence of the disease, the kind of tissue infected, the class of vaccine to be used and the dosage of same. In most instances I believe the dose is undersize; we must give a dose large enough to get a reaction after each administration.

We have yet much work to do along this line and clinical observations and results will play a most important part and we must not be afraid to deviate from the small doses quoted by many. I have yet to see any bad results from large doses of vaccine.

I have been having my special vaccines made to formula for some years, and my results so far are most pleasing. The gonorrhœal formula most commonly used by me consists of

1,000 million gonococcus.
1,000 million bacillus coli.
1,000 million staphylococcus aureus.
1,000 million staphylococcus albus.
1,000 million staphylococcus citreus.
1,000 million streptococcus.

making a total of 6,000 million killed bacteria to each vial of one c.c., each with a rubber stopper so that any fraction of this dose may be withdrawn as desired.

Much that is discouraging has been said about the treatment of acute gonorrhœal infections, but we will surely succeed in time.

In the treatment of gonorrhœal infections in women, including peritonitis in its acute stage, I believe that the strongest weapon we have in battling with the condition is the vaccine if used early before the disease has become walled off to the extent of isolating it from the general circulation.

Douches and applications have their general usefulness and have been proven entirely satisfactory so far as they go, but the vaccines are of greater value when properly applied in the case.

The following are typical clinical pictures of acute and chronic cases, the treatment and results are perhaps worthy of note.

Case A.—Applied to me for treatment February, 1910. Male, age fifty years. Occupation, cattle king, which occupation requires much time in the saddle.

He complained of pain in the region of the perineum, particularly on pressure, which extended down the legs; the tenderness was so severe that he had to abandon his saddle work, which meant that he had to stay away from his business. This condition had extended over a period of years and had gradually grown worse; his eyesight had been failing for two years, otherwise his physical condition was good.

He had been treated in several different cities in the United States, but the results had not been successful. My diagnosis was that of chronic gonorrhœal prostatitis, and I gave him deep muscular injections of special mixed gonorrhœal vaccine in bi-weekly doses for a period of five weeks, using the gluteal region as the site of the injection.

Improvement began after the second dose. In six weeks he was free from pain and other symptoms, his eyesight had improved. December 18, 1890, or nine months after treatment, he reported himself in good health, free from pain and all of his symptoms and his eyesight had greatly improved. I am not positive that the condition of his eyes was in any way due to his gonorrhœal infection, at any rate it was much better.

March, 1914, four years after treatment, I saw his brother, and he tells me that the patient has had no return of his former symptoms.

Case B.—Applied to me for treatment May, 1912. Male, age 24 years, occupation chauffeur and professional boxer. He had suffered excruciating pain in both feet for three years and was unable to walk without crutches. For nearly three years he had been under treatment a greater part of the time in some of the best hospitals in New York and Brooklyn. Gonorrhœal vaccines had been used on him in one hospital in doses of fifty million bacteria stock vaccine, with no apparent result.

He gave a positive gonorrhœal history extending over a period of years; there was no apparent urethral discharge, but a culture made of the secretions obtained by massage of the prostate gland was positive and from that I have made an autogenous vaccine containing 10,000 million killed bacteria to each dose of one c.c.

The fluroscopic picture showed swelling and softening of the bones of the feet with an indication of loss of lime salts.

In the treatment I used the gluteal region as the site for deep muscular injections of which I gave him twelve doses of my special gonorrhœal vaccine of 6,000 million killed bacteria every other day for four doses and then biweekly and then gave him three doses of his autogenous vaccine 10,000 million to each dose.

At the end of seven weeks all his symptoms had practically disappeared, he could walk without the use of sticks and without pain.

In August, 1913, sixteen months after treatment he reports himself well and working steadily as a chauffeur.

Case C.—Female, age twenty-three years, applied to me for treatment July, 1912.

This case having met with an accident was conveyed to a hospital and while there developed acute gonorrhœal vaginitis, pyosalpynx, and peritonitis of an alarming degree, surgery was ad-

vised at once, there was a severe purulent vaginal discharge.

For three days before I saw her she was suffering pain through the pelvic region, there was no vomiting and the bowels were regular. The lower abdomen was tense and extremely tender. Temp., 100; pulse, 120; and her general appearance was decidedly septic.

She was suffering acutely when she came under my care, and I immediately ordered her put to bed. I started her on deep muscular injections of my mixed special gonorrhœal vaccine 6,000 million killed bacteria in daily doses, and at the end of eight days all her symptoms of sepsis had disappeared. She was allowed to go home.

The following month there still remained a mass in the right pelvis, painful and tender, but no acute symptoms. I did a laparotomy and removed the left tube. The organs were quite natural in appearance and not acutely inflamed. She was discharged in fourteen days, having made an uneventful recovery. October, 1913, she reports herself perfectly well.

Case D.—Is one of the most interesting and most instructive cases in my series. Male, age twenty-four years, occupation haberdasher. Applied to me for treatment in January, 1913; he had all the symptoms of an acute anterior and posterior gonorrhœal urethritis of ten days' duration, with a profuse discharge, frequent painful micturation, with some swelling and redness of parts. His suffering was intense. He was scheduled to be married in one week from the date he applied for treatment. A culture made from the discharge showed active gonococci; he had a virulent mixed infection. Again I used the gluteal region as the site of the injection, and gave him daily injections of my special mixed gonorrhœal vaccine 6,000 million killed bacteria to the dose. His reactions were very marked, and he was very sick at times, so much so that I was a little uneasy about him. His temperature was 101½ at times, he had headaches and his whole body felt sore and ached.

He had in all eight injections. In spite of advice to the contrary, he was married on the date set; his symptoms had all disappeared, he was free from any urethral discharge. The night before the wedding, or seven days after the beginning of treatment, a culture from the urethra, including secretion obtained after massage of the prostate, proved negative; three weeks later subsequent cultures proved negative, and there was no symptoms of the disease.

I interviewed him January, 1914, twelve months after his treatment and there was no sign of the slightest discharge or any other symptom of the disease.

Case E.—Male, age twenty-nine years, real estate broker, applied to me for treatment March, 1913. Chronic gonorrhœal urethritis; duration three months. He had been treated by men of professional reputation and had received a few small doses of gonorrhœal vaccine with but little improvement.

There is absolutely nothing unusual about this case except the facts that it required but eight deep muscular injections into the gluteal region of special mixed gonorrhœal vaccine, 6,000 million killed bacteria given in bi-weekly doses, to result in a perfect clinical, as well as laboratory cure, which was still permanent on January 29, 1914, without a symptom of the disease.

Case F.—Male, age thirty-nine years, police officer, applied to me for treatment March, 1913. Chronic gonorrhœal urethritis of several years' standing.

He had been under constant treatment for three months before I saw him by a practitioner for whom I have the utmost regard. Positive diagnosis by culture was confirmed both by his former surgeon and the laboratory to which I sent him.

The administration of ten doses of special mixed gonorrhœal vaccine of large size resulted in a cessation of all symptoms and a perfect laboratory cure, which was later confirmed by his former surgeon, and in January, 1914, nine months after treatment, he reports himself well and without a symptom.

Case G.—Male, age forty-five years, hospital orderly, applied to me for treatment December, 1913. Acute gonorrhœal urethritis, first attack. Had a profuse milky discharge with painful micturation, and the other symptoms of the disease.

I started him immediately upon the deep muscular injections of large doses of gonorrhœal vaccine, six to eight million killed bacteria, three doses weekly, or a dose every forty-eight hours; he had eleven doses.

This case was complicated by an acute orchitis.

On January 26, 1914, an examination disclosed no symptoms of his disease and this was again confirmed March 17th, so that the apparent results of this case are so far good.

In clinical work of this kind it is not easy to observe the opsonic index, etc. In Case D it was treated with the greatest rapidity of big doses of any case on my records and with perfect results. I realize that in this case I deviated from the set rules for the administration of antigens, but in such an emergency something must be done and quick, on the "Root hog or die" order; there is no time to consider the negative or positive phase of the case. The clinical picture was one demanding treatment and he got it, and in eight days after the initial dose he went to the altar as pure as the "Proverbial virgin." The end results justifies the course taken.

I am a believer in careful and progressive increasing dosage in doubtful individuals, but in the general run of gonorrhœal cases the dose

of vaccine given is much too small. The autogenous vaccine is undoubtedly good, but the stock vaccine when properly made, employed in proper dosage, occupies a place of much greater therapeutic importance than it is generally credited with.

The autogenous vaccines are hard to obtain, require delay, and generally are of much greater expense, but are a necessity in some cases. The stock vaccine can be kept on hand, is much better understood at present by the general practitioner and will in a large percentage of cases give the clinical results desired.

In the treatment of gonorrhœal infections it has been pointed out that there is generally a systematic loss of calcium, particularly in the bones; it is, therefore, in all probability advantageous to administer some form of calcium in the treatment, elixir glycerophosphate calcium and sodium plain or compound seems to fulfill the requirement.

In many chronic cases neither the original focus nor the initial organism can be proven. The mixed vaccine must be selected composed of the most likely organisms in the hopes that some will produce the necessary antibodies, the other surplus bacteria at least do no harm.

One must not run away with the idea that the present day bacterial vaccines will cure all cases. The necessity of constitutional treatment must ever be kept in mind as is also the possibility of the case being one of toxemia instead of bacteriemia.

INJURY TO SHOULDER.*

By I. M. SLINGERLAND, M.D.,
FAYETTEVILLE, N. Y.

MRS. E. M., age forty-two, weight 165, not very robust, with a very large uterine fibroid of ten years' duration and of gradual growth. Two operations for abscess in appendiceal region. The first in 1902, the last in 1909, followed by anesthetic pneumonia.

On night of June 28, 1911, was returning from a wedding on a surburban car. As the car neared her home it slowed down and nearly stopped. She arose, went to the rear platform and just as she was stepping off, the car suddenly started. She fell, but hung on with her left hand until the injury made her let go. The conductor and motorman picked her up and walked her home several hundred feet away.

I was at once sent for and arrived in about three-quarters of an hour after the accident. I found the arm out from the body and her husband holding it up. On examination found the head of bone was out of its socket under the coracoid process. The arm was greatly swollen, painful and nearly pulseless at the wrist; hand and fingers were quite numb, especially the thumb and first finger. There was also a large hæmatoma in the tissues on the inner side of arm from axilla to the lower third of arm. I elevated the arm to about sixty degrees, had husband make moderate tractions while I grasped the head of the bone with the fingers of both hands and lifted it with a snap (but not as marked as sometimes) in its stocket.

Pain immediately disappeared from shoulder and there has been none since, but there was considerable pain in anterior part of elbow and also where the biceps is inserted in radius. More or less pain has been there ever since, especially on extension of forearm. All along the course of the biceps it was very tender on pressure.

The pulse remained feeble for more than a week from the pressure of the hæmotoma on the humeral and axilary vessels. The numbness slowly improved and after a week was confined to the thumb and first finger. It has gradually grown less, but still some remains. The hæmotoma disappeared after four weeks and the discoloration after six week. The passive motions of the shoulder are good except when raising it to a right angle with body it gives some pain, about seventy-five degrees. She can swing her arm to and fro and raise forearm to right angle, but has to use her other hand to raise it to face, but now, three weeks after, can raise it unaided to the top of head.

The muscles wasted about shoulder and do not now keep the head of the bone well up in socket, although better than at first. She is improving very slowly from week to week.

I kept the arm in sling, with head of bone well up against clavicle and the forearm across chest. After two weeks I gave it passive motion every day for a week and then every two days for another week, and then I had her do it several times a day and her husband bathed and rubbed it with alcohol and skunks' oil, and the last four weeks a faradic battery was used.

It will be a long time before she will have good use of her arm, as so much damage was done to the vessels, nerves and tissues. At this date, October 20, she can use it to help dress and wash dishes and prepare meals.

* Read before the Onondaga Medical Society, September 26, 1911.

STATE DEPARTMENT OF HEALTH NOTES.

The State Department of Health gladly avails itself of the opportunity offered by the Editor of the NEW YORK STATE JOURNAL OF MEDICINE to furnish monthly, for publication in the Journal, such notices and items relating to public health matters and to the activities of the State Department of Health as are of general interest to the medical profession of the state.

This service will be under the supervision of Dr. Fred. M. Meader, Director of Division of Communicable Diseases. The State Department of Health is most anxious to secure the active assistance and cooperation, not only of the medical officers, but of the physicians of the whole state, and in turn will always be ready to assist them in every way in its power.

HERMANN M. BIGGS, M.D., *Commissioner.*

REGISTRATION OF COMMUNICABLE DISEASES.

One of the great difficulties encountered by those engaged in the preventive work of the State Department of Health is the lack of full and accurate reports of cases of the communicable diseases. The Public Health Council has placed in the Sanitary Code the following list of diseases to be known as communicable diseases: Anthrax, chickenpox, cholera asiatic, diphtheria (membraneous croup), dysentery, amœbic and bacillary, epidemic cerebrospinal meningitis, epidemic or streptococcus (septic), sore throat, German measles, glanders, measles, mumps, ophthalmia neonatorum, paratyphoid fever, plague, poliomyelitis, acute anterior (infantile paralysis), puerperal septicæmia, rabies, scarlet fever, smallpox, trachoma, tuberculosis, typhoid fever, typhus fever and whooping cough. The Public Health Council has decreed that all reports of communicable disease shall be made in writing by the attending physician to the health officer within twenty-four hours from the time when the case is first seen by him.

Whenever practicable the report should be made by telephone or telegram in order that the health officer may as early as possible institute precautions against the spread of the disease.

By reference to the Sanitary Code, Chapter II, Regulation 1, it will be found that several diseases have been added to the list while others are no longer reportable. The diseases added are chickenpox, dysentery (amœbic and bacillary) epidemic or streptococcus (septic), sore throat, German measles, mumps, paratyphoid fever, puerperal septicæmia.

Some objections have been made to the reporting of chickenpox and German measles, but the Public Health Council, after due consideration, have decided that both diseases should be reportable and certain measures of isolation and quarantine established because smallpox is frequently diagnosed as chickenpox, and mild scarlet fever cases are often treated as German measles.

During the first quarter of 1914 there were 7,108 cases of tuberculosis reported. Of these 5,218 were reported in New York City. The cities of Buffalo, Rochester, Syracuse and Albany reported practically one-fourth of the 1,990 cases outside of New York City. It is possible that this is due to greater accuracy of reports in the cities, or are there two and one-half times as many cases of tuberculosis in New York City as in the balance of the state, although the population is practically equal?

Again we find 4,700 cases of diphtheria reported in New York City and only 1,291 cases of this disease in the rest of the state. This may be due to the greater facilities with which the city physician obtains reports of the bacteriological findings from cultures in doubtful cases. Many physicians in the country hesitate to make cultures in doubtful cases even though they usually send in cultures whenever the clinical symptoms plainly indicate that the case is diphtheria. It is in doubtful cases that the aid of the laboratory should particularly be invoked, not alone by the health officer, but also by the attending physician who will thus frequently be aided in arriving at a correct diagnosis.

Individual case cards may be obtained from the local health officer, who should at all times keep a sufficient supply on hand, inasmuch as they are furnished free of charge by the State Department of Health. Physicians are entitled to a fee of twenty-five cents for each case of communicable disease reported to the health officer. (See Chapter 559, Section 25.)

Regulation 8 of the Sanitary Code requires the physician in attendance to report immediately to the local health officer the existence of certain diseases on dairy farms, and it is the duty of the health officer to report at once to the State Commissioner of Health the existence of such cases together with all the facts regarding names, addresses, adequacy of isolation, and the places to which milk is shipped from the farm.

F. M. Meader, M.D.
Director, Division of Communicable Diseases.

AMERICAN MEDICAL ASSOCIATION.

Council on Pharmacy and Chemistry.

New and Non-Official Remedies.

Since publication of *New and Non-official Remedies*, 1914, and in addition to those previously reported, the following articles have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion with *New and Non-official Remedies*:

Antiseptic Supply Co.—Causticks, caustick applicators, cupricsticks, stypticks.

Arlington Chemical Co.—Arlco urease.

Comar and Cie.—Electrargol.

Fairchild Bros. and Foster.—Trypsin.

Franco-American Ferment Co.—Lactobacilline tablets, lactobacilline liquide, culture A, lactobacilline liquide, cuture D, lactobacilline liquide, infant culture, lactobacilline glycogene tablets, lactobacilline (glycogeneliquide), lactobacilline milk tablets, lactobacilline milk ferment, lactobacilline suspension.

Hoffmann-LaRoche Chemical Works.—Thiocol, syrup thiocol, Roche; thiocol tablets.

Hynson, Westcott & Co.—Phenolsulphonephthalein, H. W. & Co.; phenolsulphonephthalein ampules, H. W. & Co.

Merck & Co.—Cerolin.

Wm. R. Hubbert.—Diphtheric Antitoxin, Hubbert. Having been advised that Diphtheric Antitoxin, Hubbert, was no longer on the market the Council directed that it be omitted from future editions of *New and Non-official Remedies.*

Sodium Biphosphate, Squibb.—This non-proprietary form of sodium acid phosphate has been accepted for inclusion with *New and Non-official Remedies.* E. R. Squibb & Sons, New York. (*Jour. A. M. A.*, May 2, 1914, p. 1401.)

Normal Horse Serum with Chloroform as a Preservative.—Marketed in vials, each containing 50 c.c. H. M. Alexander & Co., Marietta, Pa.

Normal Horse Serum without Preservative.—Marketed in vials, each containing 50 c.c. H. M. Alexander & Co., Marietta, Pa. (*Jour. A. M. A.*, May 2, 1914, p. 1401).

Erepton.—A meat product consisting largely of the amino-acids produced by the digestion of meat. Erepton is said to be useful in cases in which it is necessary to substitute a perfectly digested food for the product of natural digestion in cases of gastric or intestinal indigestion and for the purposes of rectal alimentation. Farbwerke, Hoechst Co., New York (*Jour. A. M. A.*, May 16, 1914, p. 1559).

Acne Serobacterin, Mulford.—This is a sensitized acne vaccine. H. K. Mulford Co., Philadelphia, Pa.

Coli Serobacterin, Mulford.—This is a sensitized coli vaccine. H. K. Mulford Co., Philadelphia, Pa.

Neisser Serobacterin, Mulford.—This is a sensitized gonococcic vaccine. H. K. Mulford Co., Philadelphia, Pa.

Pneumo Serobacterin, Mulford.—This is a sensitized pneumococcic vaccine. H. K. Mulford Co., Philadelphia, Pa.

Staphylo Acne Serobacterin, Mulford.—This is a sensitized staphylo acne vaccine. H. K. Mulford Co., Philadelphia, Pa. (*Jour. A. M. A.*, May 16, 1914, p. 1559).

New Bornyval.—New bornyval is borneol isovaleryl glycolate, the isovaleryl glycolic acid ester of borneol. Being more resistant to the gastric fluids than bornyval, it passes the stomach unchanged and is said, therefore, to be less irritating than bornyval. Its properties are similar to those of bornyval and other valerian preparations. New Bornyval is an almost tasteless and odorless liquid, insoluble in water. It is sold also in the form of Bornyval Pearls, each containing four minims of New Bornyval. Riedel & Co., New York (*Jour. A. M. A.*, May 23, 1914, p. 1637).

Hexalet, Riedel & Co.—At the request of the manufacturer the name Hexal in *New and Non-official Remedies* has been changed to Hexalet.

Yours truly, W. A. Puckner, *Secretary.*
Council on Pharmacy and Chemistry.

Propaganda for Reform.

Valentine's Meat Juice.—Four years ago an examination by the Council on Pharmacy and Chemistry showed that Valentine's Meat Juice was not a meat juice, but had the character of a meat extract instead, while on the basis of the claim that it was a meat juice extravagant assertions as to its nutritive value were made. The product being a meat extract, was practically devoid of nutrient qualities. As Valentine's Meat Juice is still widely advertised the Council deemed a re-examination important. This re-examination shows that in general it has the composition now as then, and that the same unwarranted claims are still made for it (*Jour. A. M. A.*, May 2, 1914, p. 1419).

Lower's Germen Prescription.—This "consumption cure," hailing from Marion, Ohio, is sold under the claims: "The Most Deadly Foe to the Great White Plague—TUBERCULOSIS—Science Has Yet Produced," "it takes from 15 to 30 large bottles of Germen Prescription to remove the tuberculosis poison," each bottle costing the victim two dollars. The composition of the nostrum is purported to be (in bastard Latin): "Herb Menthæpeperitæ, Herb Marrubium Vulgaræ, Ex Balsanum Tolutonum, Herb Hydrastis Canadensis, Scillæ Maratinia, Mentholis, Ex Virginianna Prunus, Ex Capsici Fastiagatum." An examination made in the A. M. A. Chemical Laboratory indicates that whatever therapeutic virtues this peppermint-horehound-cayenne-pepper-menthol mixture possesses are due to the 1.83 gm. menthol per 100 c.c. which it contained. About the only effect produced by the mixture will be to derange the digestion of the person taking it (*Jour. A. M. A.*, May 2, 1914, p. 1418).

Pituitary Extract.—The use of pituitary extract as an oxytoxic must be considered in the experimental stage. A large number of cases have been reported in which untoward effects from the use of various pituitary extracts (including pituitrin) were obtained (*Jour. A. M. A.*, May 2, 1914, p. 1420).

Pancreatin.—Long and Buhleman report that mere traces of hydrochloric acid will destroy the ptyalin of pancreatin, that pancreatin of commerce—which often is not pancreatin but merely the dried pancreas gland—is practically devoid of lipase, the fat digesting ferment, and that its tryptic ferment is likely to be destroyed by the action of the pepsin and hydrochloric acid during its passage through the stomach (*Arch. Int. Med.*, February, 1914, p. 314).

The Okola Laboratory.—The postmaster-general has issued a fraud order against the Okola Laboratory, Inc., Rochester, N. Y., which sold a mail order treatment for weak eyes. The "laboratory" advertised that Dr. John L. Corish, "an able New York physician," and "an eminent medical man," had discovered a marvelous treatment for affections of the eye by which those who were wearing glasses or who should have been wearing glasses would do without them. The treatment consisted of three parts. Okola was the name of some tablets proven by the Government to consist of baking soda and boric acid. The Okolator was a metal inhaler containing cotton moistened with a volatile liquid. The Okolizers were printed cards giving instructions for rubbing the eyes, etc. (*Jour. A. M. A.*, May 9, 1914, p. 1492).

Pa-pay-ans (Bell) now Bell-ans.—Bell & Company announce that Pa-pay-ans (Bell) is in the future to be known as Bellans. An examination of Pa-pay-ans (Bell) made by the Council on Pharmacy and Chemistry having failed to demonstrate the presence of papain, it is probable that the change of name was decided on to escape prosecution for misbranding (*Jour. A. M. A.*, May 9, 1914, p. 1492).

Bromidia (Battle & Co.).—A report of the Council on Pharmacy and Chemistry points out that while the name suggests bromid, Bromidia is essentially a chloral preparation. This nostrum illustrates the need of the Council's rule under which recognition is refused to pharmaceutical mixtures whose name does not indicate their most potent ingredients. While the chloral content of Bromidia has been given considerable publicity, yet the preparation is used both by physicians and by the public, without due consideration of its potent ingredient, as attested by the fatal results and the habit-formation which have resulted from its use. The Bromidia advertising propaganda first admits the presence of chloral, then it is argued that in Bromidia the evil effects of chloral are eliminated and in the end the impression is left that Bromidia is practically innocuous and may be given even in cases of typhoid and to children (*Jour. A. M. A.*, May 16, 1914, p. 1573).

Monte Cristo Rum and Quinin for the Hair.—The government chemists found this preparation to contain ethyl alcohol, wood alcohol and a trace of quinin. The manufacturers were found guilty of adulteration and misbranding the preparation (*Jour. A. M. A.*, May 16, 1914, p. 1575).

Pepsin Magen Bitters.—The government chemists found this preparation to contain only a trace of pepsin. The preparation was declared misbranded (*Jour. A. M. A.*, May 16, 1914, p. 1575).

Bavarian Malt Extract.—The government chemists proved that this was not a malt extract coming from Bavaria, but instead was beer. The product was declared misbranded (*Jour. A. M. A.*, May 16, 1914, p. 1575).

Thiocol Re-admitted to N. N. R.—In 1913 the Council on Pharmacy and Chemistry directed the deletion from *New and Non-official Remedies* of Thiocol and Syrup Thiocol, Roche, because a preparation called Sirolin, containing thiocol as its effective component and practically the same as Syrup Thiocol, Roche, was being advertised to the public. The Hoffmann-LaRoche Chemical Works having furnished assurance that the public exploitation of Sirolin has been discontinued, the Council voted that Thiocol and Syrup Thiocol, Roche, be restored to *New and Non-official Remedies* (*Jour. A. M. A.*, May 23, 1914, p. 1637).

Antimeningitis Serum.—The untoward or fatal effects sometimes following the use of antimeningitis serum are probably due to the toxic action of the preservative contained in it or to increased intracranial tension due to its administration. The technique of its employment should be improved rather than its use abandoned. The dangers which may arise from its use are not to be feared as much as the disease itself (*Jour. A. M. A.*, May 23, 1914, p. 1661).

Liquid Petrolatum or "Russian Mineral Oil."—A report of the Council on Pharmacy and Chemistry points out that petroleum oil was used as a medicine by the ancients and that the product "liquid petrolatum" is now on the market under a host of proprietary names and is official in most pharmacopœias. It was at one time used in the treatment of tuberculosis and as an adulterant of fats and oils on the assumption that it was assimilable. It is now known to pass the system unchanged and has recently been highly lauded as a particularly harmless laxative in the treatment of habitual constipation. As the V. S. P. definition of liquid petrolatum permits the use of rather widely varying products and as there is some difference of opinion whether a light or a heavy oil is preferable, the Council recommends that physicians desiring the water white, non-fluorescent (Russian) mineral oil use the term *petrolatum liquidum* grave or *paraffinum liquidum*, B. P., if the heavy product, preferred by Sir F. Arbuthnot Lane is desired, and *petrolatum liquidum laeve* if the light variety is desired (*Jour. A. M. A.*, May 30, 1914, p. 1740).

Cirkulon.—The device "Pulsocon" which Gerald Macauro has exploited widely in England, is sold in this country as "Cirkulon" by the "Cirkulon Institute," of Kansas City, Mo. Gerald Macauro, according to the Associated Press, has been sentenced in France to serve a term of three years' imprisonment on a charge of fraud (*Jour. A. M. A.*, May 30, 1914, p. 1742).

AMERICAN MEDICAL ASSOCIATION.

ELECTION OF OFFICERS.

At the annual meeting of the House of Delegates held on June 25, 1914, the following officers were elected:

President-elect, William L. Rodman, Philadelphia, Pa.; First Vice-President, D. S. Fairchild, Des Moines, Iowa; Second Vice-President, Wisner R. Townsend, New York, N. Y.; Third Vice-President, Alice Hamilton, Chicago, Ill.; Fourth Vice-President, William Edgar Darnall, Atlantic City, N. J.; Secretary, Alexander R. Craig, Chicago, Ill.; Trustees, Philip Marvel, Atlantic City, N. J.; Philip Mills Jones, San Francisco, Cal.; W. T. Sarles, Sparta, Wis.; Chairman of the Committee on Transportation and Place of Session, J. R. Pennington, Chicago, Ill.; Member of Judicial Council, Alexander Lambert, New York, N. Y.; Member of Council on Health and Public Instruction, H. M. Bracken, Minneapolis, Minn.; Member of Council on Medical Education, Arthur Dean Bevan, Chicago, Ill.

Medical Society, State of New York

COUNTY SOCIETIES

ESSEX COUNTY MEDICAL SOCIETY.

Semi-annual meeting at Elizabethtown, June 2, 1914.

The meeting was called to order at 2.30 P. M. by the President, Dr. L. G. Barton. Minutes of the last meeting were read and approved. Two new members were elected.

The Treasurer, Dr. W. T. Sherman, reported all dues paid for current year and deferred his complete report until the annual meeting. Moved, seconded and carried that the resolution of the Cortland County Medical Society regarding the prosecution of illegal practitioners of medicine by the State Medical Society be adopted as follows:

Resolution as to the prosecution of illegal practitioners of medicine through the State Medical Society.

WHEREAS, It is known that the system now employed for the prosecution of illegal practitioners of medicine in this state is little better than useless, largely owing to the lack of necessary funds and organized effort;

WHEREAS, Local feeling among the laity whereby right motives are misjudged and misunderstood, the natural desire of every practitioner of medicine to shun public notoriety of this kind and various other reasons;

WHEREAS, The State Medical Society had frequently signified its willingness to undertake the prosecution of illegal practitioners of medicine provided necessary funds are available and the various county societies assist in procuring evidence;

Therefore be it resolved, That the Essex County Medical Society urge such action by the State Society; that the State Society Counsel find ways and means for so doing; that the House of Delegates of the State Society be urged to take formal steps toward the formulary for such prosecution and that this Essex County Medical Society pledges itself to aid in every way possible the procuring of evidence against and the prosecution of illegal practitioners of medicine in all cases under investigation by the Counsel and deemed suitable for such action.

Moved, seconded and carried that the President appoint a committee to be known as the Committee on Red Cross Medical Work as requested by the First Aid Department of the American Red Cross. Carried.

The President appointed Drs. Sherman, of Crown Point; Turner, of Ticonderoga, and Warner, of Port Henry. The President and Secretary being members ex-officio.

Moved, seconded and carried that the President appoint a committee to draw up resolutions of regret at the death of Dr. Harry W. Blodgett, late of Lake Placid, whose untimely death occurred on March 11, 1914. Carried. The President appointed Drs. Evans, of Elizabethtown, and Noble, of Bloomingdale.

SCIENTIFIC PROGRAM.

Dr. Warner gave an admirable address contrasting the old and new in practice of medicine.

Dr. D'Avignon, who was down on the program for a paper on "Blood Pressure and its Clinical Significance," was prevented by illness from being present.

Dr. W. S. Buck, of Plattsburgh, presented a most instructive paper on "X-ray Examination as an Aid to Diagnosis," illustrated with prints from many negatives.

A vote of thanks was extended to Dr. Buck for his valuable paper. Dr. Cummins showed a man of sixty-eight from whom he had recently removed the prostate gland with excellent results.

Dr. Turner reported a case of pellagra in his practice.

MEDICAL SOCIETY OF THE COUNTY OF ALBANY.

Annual meeting at Albany, May 12, 1914.

The following resolution, to take effect immediately, was presented to the Society and passed:

"A committee of three, of whom the President shall be one, be appointed by the President, to whom all matters of medical interest for publication in the public press shall be submitted. That this committee shall have power to recommend or not the publication of such articles. That all such articles shall issue from this committee and otherwise anonymously. That publication of such article without recommendation shall *ipso facto* constitute unprofessional conduct of which the Board of Censors must immediately take cognizance."

A copy of the above is to be sent to each of the newspapers and its full meaning given them.

MEDICAL SOCIETY OF THE COUNTY OF FRANKLIN.

Semi-annual meeting at Saranac Lake, June 9, 1914.

Twenty members were present and the following candidates were nominated to be elected at the next annual meeting: For President, Dr. J. Woods Price, Saranac Lake; Vice-President, Dr. R. W. Van Dyke, of Malone; Secretary and Treasurer, G. M. Abbott, Saranac Lake; Censor for three years, Dr. H. A. Bray, Ray Brook. Dr. E. G. Dustin, of Saranac Lake, was elected to membership.

Several communications were read, one from the Medical Society of the County of Kings denouncing the passage of the bill, known as the McClellan Bill, by both houses of the State Legislature. After some discussion it was moved, seconded and carried that this Society heartily indorses the resolutions passed by the Medical Society of the County of Kings.

A new Membership Committee was appointed by the President consisting of Drs. S. W. Outwater, R. W. Van Dyke and W. N. MacArtney.

SCIENTIFIC SESSION.

"Tuberculosis from a Gynecological Standpoint," Daisy C. Van Dyke, M.D., Malone. Discussed by Drs. Trembley and Bray.

"Surgery of the Thyroid Gland," John E. White, M.D., Malone. Discussed by Reuben W. Van Dyke, M.D.

"Treatment of Hæmoptysis," H. E. Le Gates, M.D. Discussed by Drs. Trembley, Goodall, Blankmeyer, of Gabriels, and Kinghorn.

"Gangrene of the Lung, Clinical Pathological Report," E. N. Packard, M.D. Discussed by A. K. Krause, M.D.

MEDICAL SOCIETY OF THE COUNTY OF CHEMUNG.

Regular meeting at Elmira, June 16, 1914.

Dr. A. W. Booth, delegate to the last meeting of the State Society held in New York City gave a report of the meeting.

SCIENTIFIC PROGRAM.

"Is Tobacco Smoking Harmful?" C. F. Abbott, M.D., Elmira.

"Intestinal Obstruction," LaRue Colegrove, M.D., Elmira.

"Report of Cases," F. B. Green, M.D., Elmira.

Through the courtesy of Dr. F. B. Green a collation was served after the meeting.

MEDICAL SOCIETY OF THE COUNTY OF OSWEGO.

Ninety-third semi-annual meeting at Pulaski, May 19, 1914.

Vice-President's Address, H. W. Schlappi, M.D., Fulton.

"Delegates' report of the State Meeting, J. K. Stockwell, M.D., Oswego.

"Malignant Growths," William S. Bainbridge, M.D., New York.

"Sanitary Inspection," F. W. Sears, M.D., Syracuse.

During the afternoon the Society had an opportunity to inspect the County Tuberculosis Hospial, at Orwell.

SENECA COUNTY MEDICAL SOCIETY.

Semi-annual meeting at Romulus, May 14, 1914. After a dinner served to fifteen members at the Hinckley House the meeting was called to order by the President, Dr. L. Arthur Gould.

A committee was appointed to revise the fee bill and officers were nominated for vote at the annual meeting.

SCIENTIFIC PROGRAM.

"Backache and Sciatica," Howard L. Prince, M.D., Rochester.

"The Beck-Sluder Tonsillectomy," J. S. Kirkendall, M.D., Ithaca, was read by Howard Burhans Besemer, M.D., in the absence of Dr. Kirkendall.

BOOKS RECEIVED.

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

SOME AMERICAN MEDICAL BOTANISTS. Commemorated in our Botanical Nomenclature. By HOWARD KELLY, M.D., LL.D. Delivered as a lecture before the Medical Historical Society of Chicago, 1910, and before the University of Nebraska, October 16, 1913. The Southworth Company, Publishers, Troy. 1914.

DISEASES AND DEFORMITIES OF THE FOOT. By JOHN JOSEPH NUTT, B.L., M.D., Surgeon-in-Chief, N. Y. State Hospital Care of Crippled and Deformed Children; Surgeon, Sea Breeze Hospital; Orthopedic Surgeon, Willard Parker Hospital, New York; Member American Orthopedic Association. 8vo. Over 300 pages. 105 illustrations and plates. Prepaid, $2.75. E. B. Treat & Co., Medical Publishers, 241-243 West 23d St., New York.

THE PRACTICE OF SURGERY. By JAMES G. MUMFORD, M.D., Lecturer on Surgery in Harvard University. Second edition, thoroughly revised. Octavo volume of 1,032 pages with 683 illustrations. Philadelphia and London: W. B. Saunders Company. 1914. Cloth, $7.00. Half morocco, $8.50. W. B. Saunders Company, Philadelphia and London.

A TREATISE ON CLINICAL MEDICINE. By WILLIAM HANNA THOMSON, M.D., LL.D., formerly Professor of Practice of Medicine and of Diseases of the Nervous System in the New York University Medical College; ex-President of the New York Academy of Medicine, etc. Octavo volume of 667 pages. Philadelphia and London: W. B. Saunders Company. 1914. Cloth, $5.00. Half morocco, $6.50.

TEN SEX TALKS TO BOYS (ten years and older). By IRVING DAVID STEINHARDT, M.D., Instructor Clinical Surgery and Assistant Surgeon, Cornell Medical School; Assistant Pediatrist, Mt. Sinai Hospital, O. P. D.; Orthopedic Surgeon, New York Hospital, O. P. D.; Member of American Medical Association, Society Moral and Sanitary Prophylaxis. With twelve illustrations. J. B. Lippincott Company, Philadelphia.

TRANSACTIONS OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA. Third series, vol. 35. Edited by WILLIAM ZENTMAYER. Philadelphia. 1913.

A HANDBOOK OF PSYCHOLOGY AND MENTAL DISEASE. For use in training schools and medical classes, and as a reference for practitioners. By C. B. BURR, M.D., Medical Director Oak Grove Hospital (Flint, Mich.), for Mental and Nervous Diseases; Member American Medical, American, Medico-Psychological and Neurological Associations. Fourth edition, revised and enlarged with illustrations. F. A. Davis Company, Philadelphia. English Depot: Stanley Phillips, London. 1914. Price, $1.50 net.

BOOK REVIEWS.

INFANT FEEDING. By CLIFFORD G. GRULEE, A.M., M.D., Assistant Professor of Pediatrics at Rush Medical College; Attending Pediatrician to Cook County Hospital. Octavo of 295 pages, illustrated. Philadelphia and London. W. B. Saunders Company, 1912. Cloth, $3.00 net.

This is not an exhaustive work upon its subject, but is a book based upon a course of lectures to medical students and is really an exposition of the Continental method of feeding infants. And so we expect to find what is advocated; the longer intervals of feeding and the dilution of whole milk in preparing the formulæ.

Part I is perhaps the most valuable section of the book because it deals with fundamental principles of nutrition and it is very essential that these be understood if the student is going to be able to recognize the earlier departures from normal.

In Part III which is the most exhaustive section occupying as it does considerably over half of the work, the author recognizes as most others do, that artificial feeding of infants is anything but an exact science. It is never possible for an author to do himself justice in a section like Part III. There is a science and there is an art of infant feeding and in practice the art predominates. The author does well, however, in emphasizing the pathological aspect of the nutritional disturbances of infancy because it is upon the early recognition and adequate adjustment of the feeding to these that success or failure largely depends.

Infant feeding is an individual problem in most instances and to write upon it requires unusual qualities because then the subject becomes generalized.

For the student in medicine or the general practitioner there is considerable in this book that is of value for their work. It may seem at first reading to be more theoretical than practical, but a closer study of the book reveals the fact that the author has made an endeavor to impress the right kind of knowledge, so

that the reader may become slowly, perhaps, but surely more expert.

And this is as it should be; the fundamentals and the pathology must be appreciated, if the art and science of infant feeding is to be successfully pursued.

The book can be safely recommended as an efficient guide to the student and practitioner in this most difficult branch of pediatrics—infant feeding.

LeGrand Kerr.

The Medical and Sanitary Inspection of Schools. By S. W. Newmayer, A.B., M.D., in charge Division of Child Hygiene, Bureau of Health, Philadelphia. 12mo, 318 pages, with 71 engravings and 14 full-page plates. Lea & Febiger, Publishers. Philadelphia and New York, 1913. Cloth, $2.50 net.

Newmayer's book is a trustworthy guide in matters of school hygiene and sanitation for the physician, nurse and teacher. The Binet-Simon tests, as revised by Goddard for American use, are given in full. There are many illustrations. The teachings of Gould with respect to head tilting in writing as a factor in the production of scoliosis appear to have been overlooked by the author. A. C. J.

Medical Research and Education. By Richard M. Pearce, University of Pennsylvania; William H. Welch, W. H. Howell, P. Mall, Lewellys F. Baker, the Johns Hopkins University; Charles S. Minot, W. B. Cannon, W. T. Councilman, Theobold Smith, Harvard University; E. N. Stewart, Western Reserve University; S. J. Meltzer, Rockefeller Institute for Medical Research; James Ewing, Cornell University Medical College; W. W. Keen, Jefferson Medical College; Henry H. Donaldson, Wistar Institute of Anatomy; the late C. A. Herter, Columbia University; the late Henry P. Bowditch, Harvard University. The Science Press, New York and Garrison, N. Y., 1913.

A volume of lectures on medical education brings to mind the report of the Carnegie Foundation, published in 1910, which excited a storm of comment and criticism. We find, in this volume, that of twenty-eight addresses and lectures about one-half were published before that event, showing that the subject was of supreme interest to the foremost medical men of the country even before that date. Reading this volume is a much pleasanter task than reading Flexner's report, for that was severely critical, while this is constructive and full of hope for the future, though necessarily critical in parts.

From all parts of the country, from the West and the Middle States as from the East, comes the cry, "What can we do to increase the value of the output of our medical schools?"

The points discussed range all the way from the research worker and the research institute down the line to the medical student entering the medical school. What should be the position of the research worker? Should he be distinct and separate from the teacher, or should these two forms of activity go hand in hand? While one maintains that to get the highest degree of efficiency in any medical school the teachers must be investigators, another asserts that the time is not so distant when it will become necessary to separate the functions of teaching and research. Then again, it is asked, if those engaged in special research are not liable to lose the sense of relation between their own work and the rest of medical knowledge.

It is maintained that our laboratories in this country are as good as those in Germany and the methods of teaching are practically the same, but the improvement in results derived from laboratory methods in some subjects has not been followed by improvement in results in clinical teaching in either medicine or surgery. In other words, in too many cases the clinical teachers have not been trained in laboratory methods, and their time has too much been given to private practice. Hence the question arises as to the advisability of paying occupants of clinical chairs a living salary, and so by relieving them from actual practice they may devote all their time to developing the best methods of teaching, and by this means introduce more and more the laboratory methods into the wards of the hospitals. For the wards of the hospitals should be the laboratory of the Science of Clinical Medicine.

Thus, the position of the research worker, the position of the clinical teacher, the relation of both of these to the medical student, and further, the relation of all three to social betterment which is the goal of the whole matter, are fully and ably discussed in this volume. Peter Scott, M.D.

A Manual of Otology. By Gorham Bacon, A.M., M.D., Professor of Otology in the College of Physicians and Surgeons, N. Y. New (sixth) edition, thoroughly revised. 12mo, 536 pages, with 164 engravings and 12 plates. Lea & Febiger, Philadelphia and New York, 1913. Cloth, $2.25, net.

This manual of Dr. Bacon with its 536 pages, of which in its previous editions we have heretofore had occasion to speak well, seems to the reviewer to have worn well, and to be after "an even more thoroughgoing revision than ever before," well abreast of our present knowledge of the subject, which appears to us to be presented in such a way as to admirably meet the needs of the medical student and the general practitioner. As before, we commend it to them as among the best of the publications on this subject.

J. E. S.

An Introduction to the Study of Infection and Immunity. Including Serum Therapy, Vaccine Therapy, Chemotherapy and Serum Diagnosis. By Charles S. Simon, M.D., Professor Clinical Pathology and Experimental Medicine, College Physicians and Surgeons, Baltimore. New (second) edition, thoroughly revised. Octavo, 325 pages; illustrated. Lea & Febiger, Publishers, Philadelphia and New York, 1913. Cloth, $3.25, net.

The appearance of a second edition of Simon's work within a year after the first would seem to show that the general profession is greatly interested in modern experimental medicine, for all its complexities. Probably the charm of Simon's book is due to the fact that the marvelous advances with which it deals are explained clearly and without scientific pedantry. Indeed, the author avows that his aim is to make the new knowledge readily assimilable and applicable. His work successfully presents to the practising physician the more important data which have been worked out with respect to how infection primarily takes place, how it gives rise to disease, and how the animal body overcomes infection. A. C. J.

Diagnosis in the Office and at the Bedside. The Use of Symptoms and Physical Signs in the Diagnosis of Diseases. By Hobart Amory Hare, M.D., Professor Therapeutics, Medica and Diagnosis, Jefferson Medical College, Phila. New (7th) edition, thoroughly revised and rewritten. Octavo, 547 pages, with 164 engravings and 10 full-page plates. Cloth, $4.00 net. Lea & Febiger, Philadelphia and New York, 1914.

This thoroughly revised seventh edition is a book of undoubted value to the practitioner. It takes up one by one the abnormalities of the various parts of the body and the various symptoms of different causation, illustrating with charts and tables in what way the differential diagnoses may be made. There are times when a book of this sort should be of great value to the practitioner, and much that it contains cannot be easily found in any other book without considerable difficulty.

A Treatise on Diseases of the Skin. By Henry W. Stelwagon, M.D., Ph.D., Professor Dermatology, Jefferson Medical College, Phila. Seventh edition, thoroughly revised. Octavo of 1,250 pages with 334 text illustrations and 33 full-page colored and halftone plates. Philadelphia and London. W. B. Saunders Company, 1913. Cloth, $6.00 net; half morocco, $7.50 net.

The seventh edition of Dr. Stelwagon's treatise on dermatology is still one of the best, if not the best, work on skin diseases in the English language. This new edition shows evidence of careful revision. Many of the subjects have been rewritten, a number of new chapters have been added, and the illustrations have been increased—all of which has greatly enhanced its value as an up-to-date work on this difficult specialty.

There is only one criticism we can make, and that may not be justifiable, and that is that it is to be regretted that the subject of X-ray therapy has not been brought up to date. Radiotherapy has advanced so rapidly during the last two or three years that it is unfortunate that this subject could not have been rewritten as have been so many of the less important ones.

This treatise will long be the standard text-book for any one, be he general practitioner or specialist, who wishes to add to his knowledge of dermatology. W.

The Modern Treatment of Nervous and Mental Diseases. By American and British authors. Edited by William A. White, M.D., Superintendent Government Hospital for the Insane, Professor Nervous and Mental Diseases, Georgetown University; and Smith Ely Jelliffe, A.M., M.D., Ph.D., Adjunct Professor Diseases of the Mind and Nervous System, Post-Graduate Medical School and Hospital; Visiting Neurologist City Hospital; Consulting Neurologist Manhattan State Hospital, New York, N. Y. Volume 1. Illustrated. Lea & Febiger, Philadelphia and New York, 1913.

The title of this work, as is admitted in the introduction, is a misnomer, as it is really a description of treatment based on a description of the etiology, symptoms and pathology. This reversal of the usual way of handling these subjects certainly has the advantage over the classical style that it emphasizes the practical side of medicine. It also aims at being a guide for the layman and lawyer in dealing with the various subjects to which its articles relate; but examination shows, as in many articles written by specialists, that some of these would be of little use to any one not familiar already with the subject.

The work as a whole is certainly up to date and pictures the latest theories of medicine, and thus possesses the advantage over works of single authors, that when the whole is done by a number of workers that it is more quickly prepared, while, on the other hand, such works contain theories which will not stand the test of time.

As in all such systems, the different articles vary in excellence. Some are admirable, others do not seem to suit the purpose of the work, and some certainly need rewriting. In fact most of the articles might be abbreviated to their advantage.

A. C. Brush, M.D.

The Narcotic Drug Diseases and Allied Ailments. By George E. Pettey, M.D., Memphis, Tenn. Member Memphis Medical Society, Tennessee Medical Association, American Medical Association, Mississippi Valley Medical Association, American Society for the Study of Alcohol and Narcotic Diseases. Illustrated. Philadelphia. F. A. Davis Company, Publishers. 1913.

This author certainly shows the marked tendency of modern thought, in his contempt for authority, as shown by his opinion of the works of other writers and the opinions expressed by them as the result of their experience; but after claiming that there is no such thing as a morphine habit, but a disease, he fails to explain why a certain class which he describes are most apt to form this disease and are most difficult to cure. It is hardly necessary to say that these are the habit forming neurotics whose existence this author denies. Nor does he explain why he describes cocaine and alcohol as habits when his description of the conditions formed by their use and the treatment is the same as with morphine.

The plan of treatment described is excellent but the chapters devoted to the actions of the well-known drugs which he employs are superfluous as the facts contained can be found in any text-book; and the same can be said of his description of the old and well-known exercises. With all its faults, this book, however, from the excellent plan of treatment described is well worth reading.

Arthur C. Brush.

Anatomy and Physiology. A Text-Book for Nurses. By John Forsythe Little, M.D., Assistant Demonstrator of Anatomy, Jefferson Medical College. Pages 483 with Glossary and Index. Fully illustrated. Lea & Febiger, Philadelphia and New York. 1914.

This addition to the Nurse's Text-Book Series seems to cover amply for its purpose a combination of subjects that, while essential to a nurse's training, may easily be made so comprehensive as to be burdensome, or so superficial as to be valueless. There is a very real difference of opinion as to how much text-book instruction is essential in a nurse's training; but whether she should know much or little the present volume seems to include concisely the essentials of anatomy relieved from dullness by a fairly comprehensive survey of physiology. All systems of mnemonics are based upon this association of ideas, and it certainly seems a happy combination to hang the dry facts of anatomy on the interesting and practical framework of physiology. The method is not new, but Dr. Little seems to have selected wisely in his choice of the essentials of the subject that are presented in the present volume. It should bespeak for itself the favorable notice of supervisors and training school committees.

H. G. Webster.

The Early Diagnosis of Tubercle. By Clive Riviere, M.D., F.R.C.P., Physician to Out-patients, City of London Hospital for Diseases of the Chest. Victoria Praw, E. London, Henry Frowde, Hodder & Stoughton, Warwick Square, E. C. Oxford University Press, 35 West 32d Street, New York. 1914.

Riviere gives us the last word in the early diagnosis of tuberculosis, but at the same time warns us earnestly against neglecting the older and well-tried methods in favor of novel ones. Since phthisis is only a recrudescence, the final stage of disease acquired in childhood—"the end of the song which was sung to the child in the cradle"— we must avail ourselves of every means whereby we may recognize clinical tuberculosis at whatever time it may make itself manifest. The author's attention is chiefly confined to early pulmonary tuberculosis of adults and to tuberculosis of thoracic glands and the hilus in children. No diagnostic resource appears to have been overlooked. Pottengen's work in America, with respect to muscle spasm, receives favorable mention, although Riviere has failed to detect its constant presence. He makes the interesting suggestion that impaired percussion resonance may sometimes be due not so much to the tuberculous focus as to Pottengen's muscle spasm over the affected site. The book is to be highly commended as a thorough exposition of our present-day knowledge in this sphere of diagnosis.

A. C. J.

The Principles and Practice of Medical Hydrology. By R. Fortescue Fox, M.D. (London); F.R. Met. Soc.; Late Hyde Lecturer on Hydrology, Royal Society of Medicine, London. Published for University of London Press, Ltd., by Hodder & Stoughton and Henry Frowde. Oxford University Press, 35 W. 32d Street, New York City. Price, $2.00.

This is a systematic work upon hydrology in which a very old art—older than any other branch of treatment—is tested, examined and applied in the light of a very new science. The principles of this art are to-day accurately determined, and Fox lays them down in admirable fashion. The work of Baruch in America receives full recognition. The book is to be commended as an adequate presentation of the subject.

A. C. J.

Disease and Its Causes. By W. T. Councilman, A.M., M.D., LL.D., Professor of Pathology, Harvard University. New York, Henry Holt & Company. London, Williams & Norgate.

This little book was prepared by the author as one of the series known as the "Home University Library of Modern Knowledge." It is a popular work on disease, not written for physicians. While most attention is given to the infectious group, there is a large amount of information of a general sort. Such complicated subjects as the side-chain theory are explained with remarkable clearness and simplicity. As a popular exposition of disease the book could hardly be excelled. If the half-educated agitators among the laity who are busily engaged in controversial activities bearing upon medicine, and whose pronouncements are almost invariably most absurd or unsound, could be induced to read Councilman's small volume many of them would cease to gyrate and deliver their fatuous flatulencies to large audiences of morons.

A. C. J.

Dysenteries. Their Differentiation and Treatment. By Leonard Rogers, M.D., F.R.C.P., B.S., F.R.C.S., C.I.E., I.M.S. Physician Isolation Ward (Cholera and Dysentery), Professor of Pathology, Medical College, Calcutta. London, Henry Frowde, Hodder & Stoughton, 20 Warwick Square, London, E. C. Oxford University Press, 35 W. 32d Street, New York City. 1913. Price $3.75.

This book is exceedingly valuable for those desiring the most recent knowledge of the etiology, diagnosis and treatment of dysenteries. The subject is of importance not only to those living in the tropics, as cases of the so-called tropical dysentery are constantly being discovered in those who have not been outside of our large cities.

The text is well written and the subject matter is clearly arranged. It is a pity that more of our medical books are not published on such a satisfactory paper and with a type which can be read so easily.

Stammering and Cognate Defects of Speech. Vol. I: The Psychology of Stammering. Vol. II: Contemporaneous Systems of Teaching Stammering: Their Possibilities and Limitations. By C. B. Bluemel. G. E. Stechert & Co., New York. 2 vols. 12mo. 113.

This work represents the results of the author's five years' investigation of the cause of stammering. In the first volume the psychology of the subject only is considered. The author has developed a theory from his study. In the second volume the author has striven to review all the systems now in vogue for the treatment of stammering. He states that many of the systems reviewed by him have no merit. The criticisms of the author will, however, enable the stammerer to detect the gold bricks for sale in the teaching market, and as such will serve a useful purpose. In the chapter on "Stammering Schools," the author describes a class of schools of the "Squeers" type which still exist, especially in this country and in Canada, which are of the most reprehensible character. According to the author an immense number of uneducated but worldly-wise grafters make a dishonest living by imposing on the pitiful gullibility of the stammerer or his parents.

A great deal of matter which should be helpful and suggestive to the stammerer is incorporated in the second volume of the work. The child should not be scolded or ridiculed, but should be quietly guided and encouraged. The hygiene should be improved. Long hours of sleep are helpful. Constant care is apparently the talisman of success. Who is to give it? Apparently not a money-greedy ignoramus. One would select a clear-brained parent as a desirable first-aid. Yet this is not the end of the matter in all cases. Fortunately physicians exist who have studied this problem whose aid is to be had and whose advice is valuable.

W. C. B.

Defective Ocular Movements and Their Diagnosis. By E. and M. Landolt (Paris). Translated by Alfred Roemmele, M.B., Ch.B., and Elmore W. Brewerton, F.R.C.S. Henry Frowde. Hodder & Stoughton, 20 Warwick Square, London, E. C. Oxford University Press, 35 West 32d Street, New York City.

The preface very modestly states that no attempt was made to write a handbook, but merely a handy book. It is the opinion of the reviewer that the author has done both. This treatise, of about one hundred pages, presents in a compact and concise form the main facts regarding the anomalies of the extrinsic muscles of the eye. The "synoptic table of symptoms" will be found convenient for reference.

After perusal of this manual, one might be inclined to ask why the older and more cumbrous nomenclature of muscular defects is still retained in place of the shorter terminology, proposed by Stevens more than a quarter of a century ago and now generally adopted.

J. W. I.

Practical Prescribing with Clinical Notes. By Arthur H. Pritchard, M.R.C.S., L.R.C.P., R.N. (Rtd.), Late House Physician, Brompton Hospital. London. Henry Frowde, Hodder & Stoughton, Warwick Square, E. C. Oxford University Press, 35 West 32d Street, New York. 1913.

This convenient handbook approaches from an unusual angle a subject that, as the author suggests in his preface, is apt to be slighted in the preliminary training for medical practice. He justly says that the major emphasis is laid upon diagnosis and physical examination, and details of treatment are left for the beginner to pick up as best he may. It is not so much the choice of subjects nor the formulæ that are of special interest, although both are practically comprehensive and well chosen: it is the method by which the subject is presented that is noteworthy. Mr. Pritchard has illuminated a rather dry study by giving under each disease a précis of the case followed by a digest of the medication and the treatment arranged in parallel columns day by day. In this way he endeavors to emphasize the reason for prescribing the treatment and the effect that the treatment may be supposed to have had on the course of the disease. Notes and comment are added at the end of the case to illustrate special actions and indications for the drug selected, for the treatment instituted and the results obtained. The idea seems an eminently practical one capable of infinitely broader elaboration and free from the drudgery incident to the effort to learn by rote that has been so commonly adopted in the past. It is to be regretted that it is designed primarily for English readers. An edition adapted to the needs of American students should meet with a favorable reception as a supplement to the present text-book in use here.

H. G. Webster.

DEATHS.

Frederick Ferdinand Rudolph Berlin, M.D., New York City, died June 14, 1914.

James A. Blake, M.D., Brooklyn, died June, 1914.

Sidney H. Gardiner, M.D., Brooklyn, died June 11, 1914.

H. A. Gates, M.D., Delhi, died May 23, 1914.

Joseph W. Gleitsman, M.D., New York City, died July 2, 1914.

P. McKeown, M.D., Long Island City, died May 2, 1914.

Simon Marx, M.D., New York City, died June 16, 1914.

William B. Moseley, M.D., Brooklyn, died June 26, 1914.

Maus Rosa Vedder, M.D., New York City, died June 13, 1914.

NEW YORK STATE JOURNAL OF MEDICINE

A Journal Devoted to the Interests of the Medical Society of the State of New York

JOHN COWELL MAC EVITT, M.D., Editor

Business and Editorial Offices: 17 West 43d Street, New York, U. S. A.
Address Journals sent in Exchange to 1313 Bedford Avenue, Brooklyn, N. Y., U. S. A.

Vol. XIV. AUGUST, 1914 No. 8

EDITORIAL DEPARTMENT

A FEW REMARKS ON MEDICAL LEGISLATION.

MEDICAL legislation in this country has at all times engaged the attention of the most progressive and brilliant members of the profession. They have labored unceasingly year after year in the face of great discouragement to achieve their cherished object—the placing of American medicine in the exalted position it deserves. The success now crowning their efforts is due to their unfaltering tenacity of purpose.

Recapitulation of the long series of attempts to raise our profession from the low estate into which it had gradually fallen would require more space than we care to devote to its presentation at this time.*

As far back as 1776 the New Jersey State Medical Society ordained that no student be taken as an apprentice by any member of the society unless he had a competent knowledge of Latin and instruction in Greek. It is evident from this, that during the past century and up to a recent period retrogression rather than advancement has characterized medical education in this country.

During the early Colonial period many of the practitioners of medicine of native and foreign birth were graduates of European universities imbued with a spirit of pride at the high standard of the requirements of their respective schools.

We wish that they had at this formative period of our national history been endowed with a prophetic sense, that they could have seen the eventualities of the future, and by concerted efforts established a standard of requirements which would have prevented the birth of sectarianism and pseudo-medical cults which since have, like parasites, infested the body medical. We will not argue against the contention, that in a new country, with its inhabitants scattered over a wide area, the means of communication difficult, any form of medical education would have been acceptable in distant communities perforce of circumstances. Had some legal standing been established for the registration of physicians, non-prohibitive in character against others, then as the country progressed in learning and culture, the legally qualified practitioner would have been demanded in the metropolitan centers, and the unqualified forced to seek a livelihood in the sparsely populated sections of the country. It is only fair to assume as a corollary to advanced medical standards, there would have been organized boards of health, with power to establish and enforce laws safeguarding the public health.

The barriers which have obstructed beneficent medical legislation are—the apathy or active opposition of the very public it would help to protect; lack of concerted action and definite legislation; and the need of money to employ skilled legal talent in the preparation of the desired legislation, and to watch over its progress through the legislative halls. No matter how plainly the good intent of the bill or the benefit that would accrue therefrom is impressed upon

* Medical Practice Laws. A review of certain phases of the legal regulation of medical practice. By Floyd M. Crandall, M.D., New York. Reprinted from the *Medical Record*, April 9, 1910.

Sixty-six Years of Medical Legislation. By Frederick R. Green, M.D., Secretary Council on Health and Public Instruction. American Medical Association.

the legislative committee to which it is referred, there will arise a horde of commercialists whose interests are assailed to refute its virtue and befog the issue. Therein lie the possibilies of dirty politics. We all know how the interest in medical legislation lies dormant in the public mind until threatened by an epidemic or until aroused by the clamor of some social organization of wealthy people exploiting some particular fad. These organizations are potent for great good and should be encouraged even though limited in their scope of activity. But when we attempt legislation of moment for the general good we are accused of tyranny, of seeking some ulterior benefit, or of just plain jealousy of religious or culturist impossibilities. The whole history of attempts at medical legislation by the profession is replete with listlessness, if not active opposition by the public. In passing it has been our impression for some time that in opposing the advance of the cultists we add undue importance to their existence; that if let alone time would be the sacrificial fire that would immolate them upon the altar of ignorance.

By concerted efforts and definite legislation—we mean that after being thoroughly discussed, the proposed bill should be carefully prepared; that each member of the State Medical Society's Committee on Legislation should be conversant with all its details, in order to be able to explain to the legislative committee its full text, meaning and value, and to be present prepared at each hearing to meet the attack of the opposition. This is too much to expect from a committee, the members of which live at a distance from the capitol, and who are engaged in the active practice of their profession, without some compensation for loss of time and money. A suggestion worthy of consideration by the House of Delegates at our next annual meeting.

In this connection it is well to bear in mind that in the future our State Committee will be greatly assisted by the American Medical Association which has established a central bureau, where all data pertaining to medical legislation throughout the country will be collected and arranged so that full information can be furnished to the committees of the constituent bodies, accompanied by competent legal advice.

This subject was suggested to us by the recent affirming of the conviction of a person named Cole (a follower of the late notorious Mrs. Eddy), who was prosecuted by the New York County Medical Society for illegally practising medicine. The Appellate Division of the Supreme Court held that the treatment given by him to the woman detective employed by the County Society was Practice of Medicine as defined by law, performed by him without the educational qualifications or the license which the statute requires. The court held that the infliction of the fine was proper. As this decision will render all other detected Healers amenable in like manner to the law, their avocation in the future will be conducted with greater circumspection until some subterfuge is found to defeat the legal restriction. An uninterrupted pursuit of these offenders should be now inaugurated by the civic authorities and relieve the County Medical Societies of a duty belonging to others.

YOUR attention is directed to the letter of Dr. I. M. Heller, page 422, in which he comments on an editorial published in the June issue of the Journal entitled, "A Duty We Neglect." The doctor's assumption of the views held by the members of the legislative committee of the State Society is hardly tenable because, borrowing a portion of the doctor's phrase, the nature of the bills passed and defeated only too well bears mute evidence of the principles of some of our legislative Solons. Expediency is the raft upon which politicians seek to float into the harbor of officialdom. Recognizing good in every man we believe that reciprocity in votes cannot be overcome by argument in materialistic legislation, but when the spiritual, for such we can properly designate life and death, is involved the politician's better nature asserts itself, and when the subject is intelligently placed before him in its humane relations, he will cast his vote in accordance with the dictates of conscience. Ignorance is sometimes blamed for cupidity. It may have appeared to some that upon the occasion referred to our legislative committee was remiss in its duties. Achievements are not always accompanied by blare of trumpets, and we know whereof we speak when we say that much was done by the committee which did not appear on the surface. We commend Dr. Heller's advice to all members of the society and could but wish that they would take the same interest in medical legislation as that which animated Dr. Heller in favoring the Journal with his communication.

THE DROP HEART—HEART OF CONGENITAL ASTHENIA. THE HITHERTO UNRECOGNIZED IMPORTANCE OF ITS CHRONIC DILATATIONS.*

By CHARLES LYMAN GREENE, M.D.,

ST. PAUL, MINN.

WHEN insufficient, dilated, and a source of troublesome symptoms, the drop heart is almost invariably overlooked, though readily recognized when undilated and innocuous.

It represents ptosis and atony of a hollow muscular viscus, manifestly extraordinarily liable to chronic overstrain and dilatation by reason of enforced constant activity and the imperative and widely varying demands made upon an atonic musculature and subnormal reserve. Despite these facts and even of its known tendency to acute enlargement under severe overstrain, hitherto its chronic dilafations have been wholly disregarded.

The typical pendulous heart when free from dilatation is abnormally small, characteristically low and median in position and peculiarly attenuated and vertical in outline. The domes of the diaphragm itself, unless lifted by intra-abdominal pressure, may lie two interspaces below the normal levels, and in certain extreme cases may appear as if actually suspended from the great vessels and cervical fascia.

Even the "Oliver-Cardarelli tracheal tug" may be present and mislead the observer, as in the instance reported by Wenckebach.

The fluoroscopic picture is that of atony and the heart, in action, resembles a pulsating, elastic bag, for owing to the upward displacement of the auricles the right lower border is ventricular and the rhythmic excursions of the heart shadow are uniform and synchronous. With each systole the organ rotates in the direction of the moving hands of a watch, thrusts its apex sharply upward against the thoracic wall and thus produces in thin chests a prominent and often somewhat diffuse apex beat.

An extreme lateral mobility is often noted and has been dealt with by many writers, notably of late by Aug. Hoffman, Pick and Georgopulos, under the terms *"Cor Mobile," "Wanderherz"* and the like. It may double or even treble the normal range of postural displacement, and this change, usually subjectively symptomless, may actually carry the right border beyond the left edge of the sternum and equal or closely approximate the forcible displacement of the normal heart by massive unilateral pleural effusions. It is evident that in such cases an extraordinary relaxation of the enveloping, supporting and anchoring structures must exist.

The small transverse dimensions of drop hearts are of peculiar interest and vital importance.

These atonic pendulous organs when typical and wholly undilated measure when the patient is erect but 7.5, 8, 9 or possibly 9.5 cm., 8.5 and 9 cm. representing the commoner dimensions. Even when dilated and the source of active subjective symptoms the total transverse measurement rarely exceeds 12 or 13 cm., figures well within accepted normal limits and not exceeding those orthodiagraphically established by Diethen von Groedel and Ott.

Obviously a drop heart may add by overdistension 4 or even 6 cm. to its transverse measurement and still appear quite normal to percussion, and in the writer's opinion this fact explains the utter neglect of its chronic dilations in the past.

Certain other peculiarities of these asthenic hearts have impressed themselves upon the writer during a long series of observations covering several years.

First, the prompt recession of the heart borders in ambulant patients under limitation of physical activity and the use of therapeutic doses of digitalis and the equal readiness with which many drop hearts dilate under unusual overstrain or in severe acute infections.

A recession representing 4 cm. may often be observed after but a few days of treatment, such a preparation as digipuratum being employed, and by proper management the reduced area may be long maintained if any existing defect of nutrition also receives prompt and adequate attention.

Second, the extraordinary absence of clinical evidences of hypertrophy in hearts which have been for months or years the seat of minor chronic insufficiency. The flabby muscle seems to be almost incapable of hypertrophy save under conditions of such urgency as are represented by actual valvular disease, and even in such cases may be found strikingly deficient at autopsy. Indeed, during a long lifetime such hearts may never once regain their normal dimensions save during some fortuitous period of enforced physical rest. They act, as they appear, more like elastic bags than properly muscled pumping organs.

Third, one may place the common limitation of the symptoms of insufficiency to the subjective field, this apart from the readily induced dilatation.

Nothing is more striking than the almost total absence of the recognized signs of serious incompensation, and especially of those ordinarily expressed by obtrusive secondary changes in the lungs, liver and kidneys. Such are only encountered in exceptional instances of extreme dilatation.

Edema is rarely observed unless there be an associated chlorosis, a condition usually accompanied by a dilated drop heart if severe and if the patient be ambulant.

As explaining these facts it must be borne in mind that these hearts, even though subject

* Read at the Annual Meeting of the Medical Society of the State of New York, at New York, April 28, 1914.

to considerable overstrain, the handicap of an atonic musculature and varying degrees of limitation in the field of response, usually possess normal valves and undegenerated muscle fibres. One often feels that their very disabilities act as governors or automatic brakes with respect to the activity of their possessors.

Fourth, one may consider the relative freedom of the asthenic heart from organic valvular disease and the commoner forms of actual myocardial degeneration. This relative immunity, overestimated in the past, seems genuine despite the special predilection of asthenic individuals to tonsillar disease and the peculiar frequency of moderate dilatation in other infections.

(In one of the writer's patients of this type the heart dilates widely under the influence of any infection adequate to produce a few days of fever.)

Fifth, throughout the literature of the drop heart one finds many scattered and fragmentary references to an associated neurasthenia, nervous dyspepsia or abdominal visceroptosis, and quite recently Schwarz and others have definitely assigned it to *"chronic congenital asthenia,"* that interesting constituional state under which in 1907 Berthold Stiller logically grouped many important conditions formerly described as separate and distinct ailments.

Nothing is more striking than the constant association of drop heart with visceroptosis and a peculiar phthisical type of body structure. This, though often obscured by the taking on of weight or by actual acquired adiposity, may be summarized as follows:

The bones are small, the hands and feet being usually slender and often peculiarly compressible. The muscles are delicate, relatively or absolutely relaxed, and those of the abdomen especially fall far below the normal tonus. The thorax is long, narrow, distinctly of the phthisical type, and the costal belt is peculiarly unresistent, the tip of the tenth rib being specially mobile in most instances.

The abdomen is relatively small or shallow, tending to bulge below when the patient stands erect and to show epigastric flattening or even retraction, often associated with visible pulsation.

In any case with active symptoms an X-ray examination seldom or never fails to reveal the presence of an abdominal visceroptosis of some degree, which usually includes the pelvic organs, and the general picture is one of more or less profound asthenia associated with atony, which involves muscles, ligamentous structures and connective tissue alike.

The skin is usually pale, soft and delicate, the vasomotor system extremely labile, and the patient in most instances chronically thin and meagre, or carrying a history of recent weight loss.

These outward signs are often obscured, but the basic stigmata are still discoverable and, though markedly affected by improved nutrition, the drop heart shows a peculiar tendency to undergo dilatation and produce symptoms in asthenic individuals who have become actually obese and thereby ameliorated or wholly removed other subjective manifestations of an ailment whose semeiology in general varies directly with the state of nutrition.

Congenitally asthenic patients show not only a peculiar delicacy of nutritional balance, but also a marked functional instability and inadequacy which, as affecting the stomach esepcially, gives rise to a host of symptoms subjective and secretory which for the greater part have been classified hitherto under the gastric neuroses. There is no doubt in the mind of the writer that these symptoms are at least intensified by an existing cardiac insufficiency.

That markedly asthenic individuals should be psychically hypersensitive, unstable and impressionable is but the logical result of the conditions outlined, nor is it strange that at times all stimuli, both internal and external, should cause an exaggerated and often abnormal and illegitimate response, such as has long been described as characteristic of neurasthenia.

It is evident that chronic congenital asthenia we deal with a universal constitutional inadequacy which supplies every opportunity for those diverse symptomatic expressions hitherto interpreted as neurasthenia or nervous dyspesia and, in addition, invites acute infections and supplies an ideal soil for the tubercle bacillus. Indeed, most of our X-ray pictures of the drop heart give evidence of an obsolete or, more rarely, an active tuberculosis.

The curse of congenital asthenia may be largely lifted by favorable environment during childhood and youth or by the effect of occupations involving rational exercise of the deficient masculature. Hence we find many individuals of this build living long and useful lives without any serious discomfort, and, indeed, are often misled by outward appearances into a complete disregard of their true cardiac area.

That its burden should fall chiefly upon the female is not strange when one considers the environmental handicap imposed by sex upon a condition urgently demanding in youth the maximum of out-of-door life, hypernutrition and exercise.

The writer would repeat and emphasize the statement that decided morbid expressions of this *habitus* are peculiarly dependent upon and often vary directly with the state of nutrition, and that this is true of the heart as well, save in those instances where the taking on of excessive weight imposes too great a physical burden or by fatty overgrowth acts directly to embarrass that organ.

The symptoms of drop heart may obviously be complicated to an extreme degree if, as so frequently happens, asthenic manifestations, referable in large part to conditions outside the heart, become prominent in the given case.

Every symptom embraced by "neurasthenia"

or "nervous dyspepsia," both bastard syndromes until legitimized by Stiller's adoption, may be superadded to those arising from the state of the heart, and in addition we need consider the peculiarly labile vasomotor system and its obscure symptomatic expressions.

On the other hand, according to the writer's own observations, obscure and diverse symptoms readily interpreted as neurasthenia or gastric neurosis are with remarkable frequency readily removed by restoration of the heart to its *normal-subnormal* dimensions.

The writer cannot agree with those who assert that the drop heart is associated in most or even a majority of instances with marked disturbances of rhythm, though in many cases, of course, the heart is excitable and the rate somewhat accelerated. In but few cases relatively is there sinus irregularity.

On the other hand, such patients show in addition to the dilatation many interesting and suggestive subjective cardiac symptoms, too often misinterpreted as hysteria, neurasthenia or of gastric origin. The most common of these is a sense of sub-sternal, precordial or, quite as frequently, *epigastric* distension, weight and oppression and nausea is by no means uncommon.

Severe dyspnea on exertion is unsual; its slighter form not uncommon; paroxysmal dyspnea entirely outside the writer's experience in this field, yet a mild, wholly subjective dyspnea or air hunger is extremely common.

As might be anticipated these patients lack endurance if the heart be dilated, and subjective fatigue and exhaustion and genuine lack of physical endurnce often constitute a major complaint.

Drowsiness, general psychic instability, irritability, insomnia, inability to concentrate and defects of memory are extremely common and are often promptly corrected by a short course of treatment directed to the improvement of the circulation, amelioration or relief occurring at times with extraordinary promptness of rest and full doses of an active drug be applied.

The pulse is usually small, soft and more or less labile. In pronounced cases quite decided differences in the force of the beat may exist, as between two great arteries, a fact, which in connection with the tracheal tug sometimes present, is most misleading if the true cause is not understood.

The blood pressure is seldom raised, nor is it ordinarily abnormally low, though in certain instances pressures running well below 100 are obtained.

To name all of the symptoms which may occur in connection with the asthenic heart would far exceed the possibilities of this discussion, for as previously suggested they would include those of the associated states, gastric neurosis and neurasthenia, which, for lack of proper understanding and classification, have become so vast, catholic and comprehensive as to cover without overstrain practically any and every form of afebrile chronic disease.

A few words may be said as to pain. In but few instances has the writer encountered severe pain, paroxysmal or otherwise, directly attributable to the dilated drop heart, though in a few of the most extreme cases a conditon strongly resembling typical heart pang has been encountered. In certain others angina pectoris in miniature has been present, and in certain extremely interesting cases relief of obscure recurrent abdominal pain of long standing has been promptly obtained.

On the other hand, one often encounters dull pain or distinct discomfort, and one of the commonest signs in states of dilatation is a tenderness, often extreme, largely confined to the lower left border and the region of the apex, sometimes advancing and receding with the left border.

The murmurs encountered in connection with the drop heart are of every type commonly described as functional, accidental or due to relative insufficiency.

The most intersting of these is the systatic *bruit* heard over the apex, common, but by no means constant, and often diminishing significantly *par passu* with the recession of the cardiac borders and finally perhaps disappearing altogether.

Occasionally such murmurs are typically transmitted, but oftener they are soft or represent a mere murmurishness or blurring of the tone.

They are nevertheless for the most part audiable at, and more or less strictly and suggestively limited to, the classic areas of maximum audibility for the pulmonary and mitral valves. Any marked anemia intensifies them, but their incidence or persistence is in no sense dependent upon that condition.

An atonic heart muscle and a state of dilatation readily accounts for them, and in the writer's opinion papillary relaxation and insufficiency plays a large part in relation to mitral murmurs and vascular hypoplasia and ready distensibility may be important factors in those of the pulmonary type.

The brief period necessarily allotted must serve as an excuse for a hurried and sketchy presentation of a topic which cannot be handled as a concrete proposition, and the writer will conclude with a brief summary.

First.—That contrary to current belief both drop heart and its chronic dilatations are extremely common and, indeed, should logically be anticipated in view of our present knowledge of the musculature of such hearts.

Second.—That they have been hitherto overlooked because of the natural tendency to accept as the normal a standard of measurements far in excess of the drop heart normal and a failure to apply the simplest of therapeutic tests.

Third.—Another cause of general oversight has been the absence of serious symptoms of incom-

pensation, apart from dilatation, and the decided dominance of subjective manifestations.

Fourth.—That in the absence of proper diagnostic tests, the subjective manifestations are in great measure indistinguishable from those of so-called neurasthenia and new on dyspepsia, both of which in most instances are directly associated with chronic congenital asthenia and its visceroptoses.

Fifth.—The type of individual carrying congenital asthenia is easily recognizable and in itself at once suggest the presence of the asthenic for drop heart.

Sixth.—Diagnosis must be based upon the basic stigmata, the decided changes wrought by rest, the administration of full therapeutic doses of some standard digitalis preparation and results of repeated careful percussion with modern technique and a full record of symptoms.

Seventh.—In view of the authoritative statement from Cloetta Fraenkel Hansen and others affirming that therapeutic doses of digitalis fail to affect the normal undilated heart in outline or action the use of this drug as a test measure is not only justified but required not only for the recognition of masked dilatations of drop heart, but for the silent enlargements of degenerative types as well.

Eighth.—The congenitally asthenic heart may initiate symptoms of the most varied character or intensify those originating in other visceroptotic organs or finding expression in the nervous system as a whole.

Ninth.—It is therefore a definite and important contributive factor in those morbid states underlying the greater part of our chronic invalidism.

Tenth.—A few full doses of digipuratum, rest modified or absolute, the comparison of carefully determined outlines obtained by modern methods are simple and efficacious means of making a primary diagnosis.

Eleventh.—Not all drop hearts are symptom producing nor do the stigmata of congenital asthenia in general mean necessarily that their possessors must be chronic invalids.

Twelfth.—Nevertheless the writer believes that dilated drop hearts, while often borne by well nourished individuals without active symptoms, may play a large part in the actual initiation of neurasthenic and dyspeptic symptoms in victims of malnutrition or infections.

The writer trusts that the very evident imperfections of his presentation may stimulate his colleagues to enter what has been to him an extremely interesting field.

As he has so frequently pointed out of late years, it is by the early recognition and correction of minor insufficiencies and not by the inherited policy of a sort of fatalistic Fabianism that we shall lengthen the lives of cardiopaths, and if, by the way, we can do something to clarify and simplify those hoary semeiologic sinners, neurasthenia and nervous dyspepsia, we shall deserve well of our fellow men.

SPORADIC CRETINISM—A CLINICAL STUDY OF 41 CASES.*

By CHARLES HERRMAN, M.D.,

IN the short time at my disposal it will be impossible to give a complete study. This will be published later. I shall therefore give first a summary of the forty-one cases of sporadic cretinism which have come under my observation during the last fifteen years and then discuss briefly the physical and mental development of these patients.

Sex.—Of the forty-one cases observed thirty were females and eleven males. This marked preponderance of females is also characteristic of the myxoedema of adults. It is interesting to note that in one case the patient was the only female of four children, in another the only female of five children and in a third the only female of six children.

Age at Which Patients Were First Observed.—A large number of the patients of this series were observed at a very early age, sixteen under two years. Of these eight were under one year and five under six months. I believe that in the majority of cases the disease is *congenital,* because so many came under observation with distinct symptoms before the end of the first year, and because so many who came under observation at a later period gave a history of having had significant symptoms, such as umbilical hernia and obstinate constipation from birth. At first the symptoms may not be very marked or striking, so that it is easy to understand that it is not until the child should be able to walk and talk that the parents notice that there is anything radically wrong. I do not believe that the mother's milk contains substances which counter balance the deficit of thyroid secretion in the infant, because a number of these patients showed distinct symptoms while at the breast. More plausible is the theory that such substances are conveyed from mother to infant through the placental circulation and then stored up in the infant very much as a certain amount of reserve iron may be stored up in the liver. However, this still lacks scientific proof. In passing I should like to mention that all cases of congenital myxoedema are not necessarily due to an *absence* of the thyroid gland. An instructive case was recently reported by Hochsinger (Monatschr, f. Kinderh., Bd. XII, Nr. 9.) In an infant one year old both Hochsinger and Kassowitz made the diagnosis of congenital myxoedema due to congenital absence of the thyroid gland, as no thyroid tissue could be felt. The patient died and at the autopsy the thyroid gland was found still present but markedly infiltrated by a growth of new connective tissue. The case also illustrates how difficult it is to palpate the thyroid gland. In only two of

* Read at the Annual Meeting of the Medical Society of the State of New York, at New York, April 30, 1914.

Fig. 1.—Three cretins in one family. Case 2—H. G. at the age of 7 years. Case 3—S. G. at the age of 6 years. Case 23—S. G. at the age of 2 years.

the forty-one cases was there any history of goitre in the family. It does not seem to play an important part in the etiology of *sporadic* cretinism.

Nationality.—In twenty-five cases the parents were Russian Hebrews. Making allowance for the fact that at a number of the clinics at which these cases were observed a large percentage of the patients are Hebrews, still the large proportion is striking. It will be remembered that in amaurotic family idiocy the larger number affected are also Hebrew.

Length of Time Under Observation.—The series offered an unusual opportunity for studying the effect of prolonged treatment, for thirteen were under observation for more than five years, and of these seven were observed for from ten to eighteen years.

Consanguinity.—In only four cases were the parents related, and it is noteworthy that of these three were in one family (Fig. 1). In this instance consanguinity in the parents probably accentuated some defect in the ancestry, but taking the entire series consanguinity does not seem to have played any part in the causation of the disease.

A distinct history of constitutional disease in the family is not common. In a recent lecture Hertoghe, of Antwerp, laid stress upon the occurrence of tuberculosis, syphilis and malaria in the family history of patients with sporadic cretinism. These diseases may occasionally act as contributory factors, but in the majority they are absent. Malaria is exceedingly rare at present in New York City. Tuberculosis in some member of every family is so common that its occurrence cannot be considered an important etiological factor. Admitting that a syphilitic history is difficult to elicit, a suspicious history, namely, of several miscarriages, still births, etc., was seldom obtained. These three diseases were not more common in the histories of the patients with sporadic cretinism than in those of other patients coming for the treatment of other diseases. Except in two families only one member was affected. The patient was usually not the first or last child, but "sandwiched in," so to speak, between several

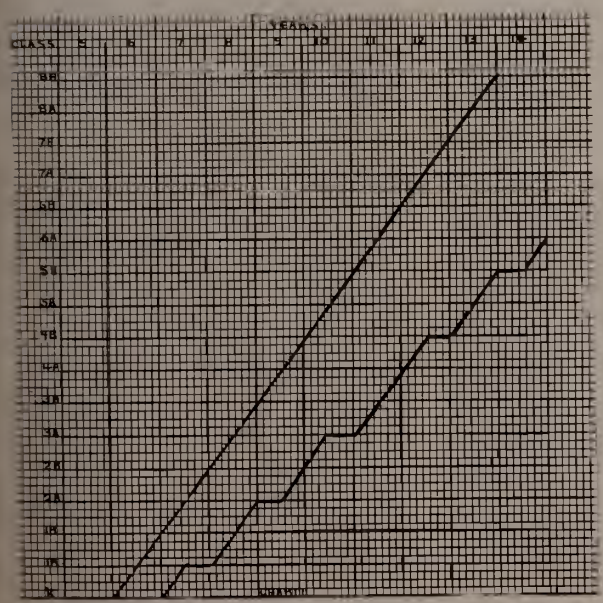


Chart 1.

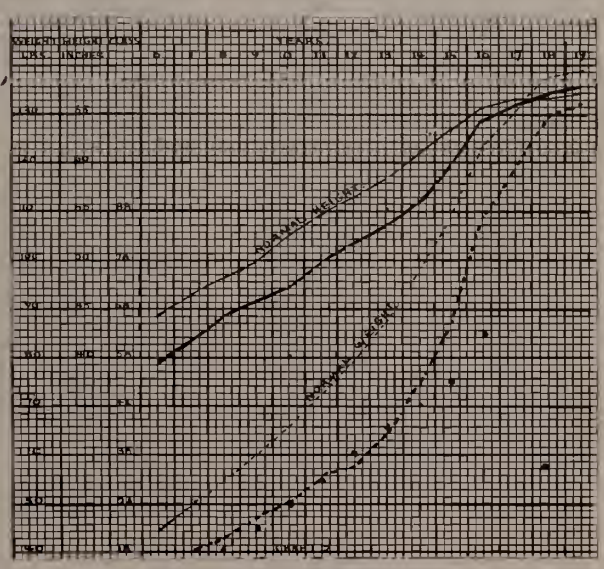


Chart 2.

FIG. 2.—Case 18—D. G. 6½ years and his twin brother.

FIG. 3.—Case 20—N. V. 9 years. Before treatment.

FIG. 4.—Case 20—N. V. 11½ years and her sister 13 years (normal).

others, the child preceding and following being perfectly normal. A still stronger argument is furnished by Case 18, D. G., a boy who was one of twins (Fig. 2). His twin brother was normal in every respect. It seems unlikely that a constitutional disease in the parents would manifest itself in only one of the twins.

The Binet-Simon tests are of very great value, but have their limitations. They are only applicable to children whose intelligence corresponds at least to that of a normal child of four years. I have compared the results obtained by this method with the intellectual development as shown by the patient's grading in school and

FIG. 5.—Case 3—S. G. at 16 years. Physical and mental development nearly normal.

FIG. 6.—Case 5—L. C. at 4½ years. Treatment irregular.

FIG. 8.—Case 12—B. K. 14½ years and her sister 13 years (normal). Physical development more retarded than mental.

found that they correspond pretty accurately. In school the child is under the observation of one teacher for nearly five months, and at the end of each term an examination in a variety of subjects is given upon the result of which promotion depends. It will be seen that the test is much more comprehensive.

After a stay in the kindergarten the average child begins in Class 1A at the age of six years, remains in each grade (consisting of Class A and B) for one year, completes the eight grades in eight years and is graduated at fourteen years of age. In order to determine the average age for a given class add five years to the class number; that is, the average age of pupils in Class 3A would be eight years. A child of ten years should be in Class 5A.

In Chart 1 the upper straight line represents the progress of a normal child from class to class, the lower the progress of Case 12, B. K. She was placed in the kindergarten class at six and a half years, in 1A at seven years. She was left back five times; that is, in 1A, 2A, 3A, 4B, 5B and at present she is in 6A at the age of fourteen and a half years. The Binet tests are convenient for rapid orientation. Of the forty-one cases of sporadic cretinism, four died while under observation, ten have been lost sight of and eight are at present of an intellectual development less than a normal child of four years, so cannot be satisfactorily tested. The remaining nineteen have been tested every four months during the last year and a half according to the Binet method. The results are given in the fourth column of the following table:

Fig. 7.—Case 5—L. C. 13½ years, and her brother 11 years (normal.) Marked retardation in physical and mental development.

	Name	Age	Physical development	Mental development	Retardation in physical development	Retardation in mental development	Age at which treatment begun	Remarks
1.	F. W.	22	17	12	5	10	4	
2.	H. G.	19½	20	13	0	6½	1¼	
3.	S. G.	17	15	15	2	2	1 mo.	
4.	H. G.	16	13	11	3	5	6 mo.	Treatment irregular
5.	L. C.	13½	8½	4½	5	9	1	Treatment irregular
6.	S. B.	16	9	12	7	4	4½	Acquired
7.	R. W.	13½	13	10	½	3½	2½	
8.	R. Y.	10	7	7	3	3	1	
9.	E. K.	10	6	5½	4	4½	1½	
10.	A. A.	13½	10	7	3½	6½	5½	
11.	C. M.	12	7½	6	4½	6	4	
12.	B. K.	14½	7½	11½	7	3	9½	Acquired
14.	E. A.	9	9	4	0	5	4½	
17.	B. F.	11½	7¼	7	4¼	4½	7½	
19.	G. G.	5	4¼	4	¾	1	1½	
20.	N. V.	11½	7	4	4½	7½	8	
25.	K. S.	11½	7½	8	4	3½	8¾	Acquired
27.	V. D.	9	8½	7	½	2	6½	
28.	R. A.	9½	5	6	4½	3½	7	Acquired

1. Under thyroid treatment, if begun early, the physical development may reach the normal. This is well illustrated by Case 2, H. G. (Chart 2).

2. When treatment is begun late the physical as well as the mental development may remain much below the normal. Case 20, N. V. (Figs. 3 and 4).

3. The improvement in the mental development is never as great as that in the physical development. Cases 1 and 2.

4. The earlier the treatment is begun the better the result as far as mental development is concerned. If we compare Case 2, H. G., with Case 3, S. G. (Fig. 5), his sister, we note that treatment was begun at fifteen months with a mental retardation of six and a half years in the former, and at one month with a retardation of but two years in the latter.

5. In congenital cases, if the treatment is begun after the first year a marked intellectual retardation persists. The later the treatment is begun the more marked will be the retardation. Cases 2, 5, 9, 10, 20.

6. In order to obtain good results the treatment must be regular and continuous. Cases 3 and 7.

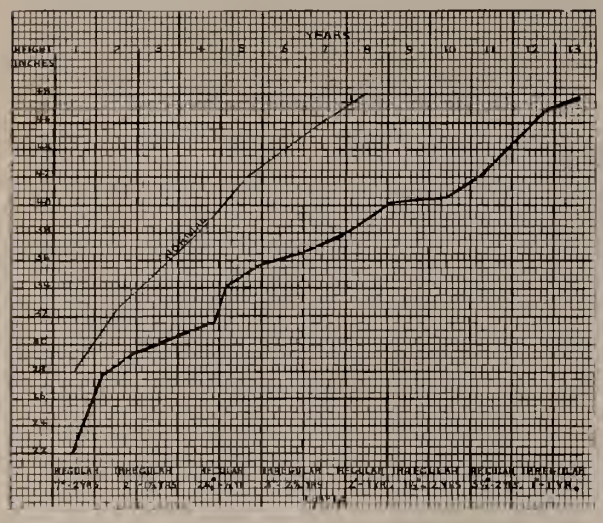


CHART 3.

The unfavorable results of irregular treatment are shown in Case 5, L. C., Chart 3 and Fig. 6 and Fig. 7 The upper line represents the normal increase in height, the lower that of the patient. It will be seen that when the treatment was regular the increase in height was from three and a half to five inches a year, whereas during the periods when it was irregular it was as low as three-quarters of an inch a year.

7. In the acquired, as against the congenital form, the intellectual development is usually less retarded than the physical development. Cases 6, 12 (Fig. 8), 25, 28.

CAVERNOUS SINUS THROMBOSIS—CASE REPORT AND SURGICAL STUDY.*

By T. R. POOLEY, M.D.,
NEW YORK CITY.

WHILE thrombosis of the cavernous sinus lies on the border line of the domain of the oto-rhinologist and ophthalmologist, and is, perhaps, more often found to occur in diseases of the nose and accessory sinuses than in inflammation of the orbit, resulting in thrombosis of the orbital veins and extension from there to the cavernous sinus, on the other hand, the symptoms are more pronounced and distinctive in the eye and consequently fall largely under the observation of the ophthalmic surgeon. It has, therefore, seemed to the writer well to bring the subject before a meeting like this, in which both of these specialties are represented and thus assure a more complete and satisfactory discussion.

I have been led to select this subject by a case which I saw a few years ago which now comes vividly before my mind, and to bring out in the discussion I hope to provoke the surgical aspects of the case and whether any operative procedure can avail to avert the otherwise almost certain fatal issue.

A man between thirty and forty years of age was brought to my hospital late one evening by two attendants from whom I could obtain no history of the case. He was stout, well built, well nourished, and showed no signs of protracted illness. He was profoundly comatose, breathing stertorously and had a rapid pulse. His temperature was not taken. There was extreme exophthalmus and apparently complete ophthalmoplegia. The pupils were wide and immovable and there was chemosis and œdema of the lids extending downward on to the face, temples and mastoid region on both sides. The cornea was slightly hazy, but not enough so to prevent ophthalmoscopic examination, which revealed intense engorgement and tortuosity of the retinal veins. There was neither bruit nor pulsation present. Death ensued within an hour without any return of consciousness. As careful examination as was possible under the circumstances failed to discover any source of infection.

The late Dr. Coburn was the only one of my colleagues in the hospital at the time and concurred with me in the opinion that the case was one of infective thrombosis of both cavernous sinuses and consecutive purulent meningitis. The œdema of the mastoid, which is due to stasis in the emissary vein of Santorini, which in this region empties into the lateral sinus and hence indirectly into the cavernous sinus, when taken in conjunction with the engorgement of the retinal veins, was considered as an important diagnostic sign between thrombosis of the cavernous sinus and retro-bulbar cellulitis, for it is never present

* Read at the Annual Meeting of the Medical Society of the State of New York, at New York, April 28, 1914.

in the latter condition. Clearly, therefore, to my mind we had before us the involvement of first one sinus, rapidly reaching by way of the circular sinus to the other side, whatever may have been the undetermined cause which gave rise to it.

Following now the main object of my paper, to bring out in the discussion what has already been done or attempted in the way of operative procedure to expose the sinus and remove the thrombus, I shall very briefly refer to the etiology, symptoms and diagnosis only in so far as they may bear upon the consideration of operative interference.

Causes.—The triangular shape of the sinus is said to favor the occurrence of thrombosis (*Marfan; Traite maladies de l'enfance*, iv.) by increasing the functional resistance. The walls, constructed of fibrous tissue, are rigid, and the dense bands of fibrous tissue which pass from one wall to the other seems to prevent the collapse of the sinus, and in themselves offer resistance to the blood current. Furthermore, the horizontal decubitus in long-standing diseases, together with depression of the heart action, diminish the force of the blood stream and thus proves an important factor in causing thrombosis. It is desirable to differentiate whether the source of the infection be intra- or extra-cranial, whether from extension from other cerebral sources or by extension from extra-cranial causes. Non-infective thrombosis is rare, but four cases are reported from injury without involving the skull, and one at least from sarcoma, which will be reported in detail.

Septic thrombosis of the cavernous sinus may arise as the result of any infected lesion in the area drained by the ophthalmic vein or its branches, for example, pustules on the face, nostrils or eyelids, and from purulent affections of the accessory sinuses, retro-pharyngitis and from erysipelas and wounds. As to the order in which these causes contribute there is considerable variance of opinion. Dwight and Germain (*Boston Medical and Surgical Journal,* May, 1902) have collected 182 cases reported in literature, to which Jackson (*Ophthalmic Review,* 27, p. 203) has added 28. In this total of 210 cases the source of infection was in the region of the face in thirty-nine instances, approximately 20 per cent, and was second only to sinus disease in the causation of sinus thrombosis.

St. Clair Thomson (*Ophthalmic Review,* 1908, 27, p. 293) thinks that the proximate and much more probable source of sepsis has been overlooked. The source of infection is frequently attributed to some lesion of the upper eyelid, carious tooth or phlegmon of the face and neck, when the much more probable one in the accessory cavities of the nose has been overlooked and the value of the statistics of Dwight and Germain is greatly diminished by the absence in nearly all cases of clinical or post-mortem examination of the accessory nasal sinuses.

Next to diseases in the sphenoidal sinuses Thomson puts pyogenic infection from the ear and places third in frequency the cases where the infection is carried by the ophthalmic vein and its branches; and last infection through the pterygoid plexus. After an anatomical review of the paths which infection can follow, Thomson reaches the conclusion that the most common cause of thrombosis of the cavernous sinus is disease of the sphenoidal sinus. He has given full proof of this in one published case with post-mortem (*Trans. of the Medical Society of London,* 1906, xxix), and has collected particulars of sixteen others with post-mortem confirmation in all instances.

That apparently trivial lesions in the region of the face and eyelids may cause infections of the sinus is amply shown by two recent cases. Dr. A. C. Snell (*Trans. Am. Oph. Soc.,* 1913), reports one from a small lesion of the skin of the temple, and Simeon Snell reports one from a still more trivial lesion caused by the prick of a pin (*Trans. Oph. United Kingdom,* xxvi). In the majority of cases both eyes are affected, the thrombosis extending from one sinus to the other. Dwight and Germain (loc. cit) in 134 autopsies found only thirty in which the thrombosis was limited to one sinus. In sixty-five cases both sides were affected and in twenty-eight other sinuses were also involved.

The symptoms are well known, but nevertheless it may not be out of place to enumerate them as they may serve as a guide to the operation. Needless to say the point from which the infection starts may serve to indicate the part which will be involved, whether it be the anterior or the posterior end, an important point in deciding upon operation. There may be co-existing meningitis, pyogenic temperature, rapid pulse, profuse sweating, rigors, headache, nausea, hebitude, delirium, coma, convulsions, involvement of the cervical glands, swelling of the palate or cheek, but generally the possibility of thrombosis of the cavernous sinus is first suggested by the conditions of the eyes, which are proptosis, œdema of the eyelids, chemosis, haziness and anæsthesia of the cornea, partial or complete ophthalmoplegia (gradual involvement of the third, fourth and sixth nerve), engorgement of the retinal veins, rarely neuroretinitis. There may be, too, as in my case, œdema of the mastoid region.

All of these symptoms may be present, but it will depend largely upon whether the thrombosis extends forward from the posterior part of the sinus or originates in the ophthalmic vein and spreads backward.

Diagnosis.—There are some points to be borne in mind before settling definitely upon the diagnosis of cavernous sinus thrombosis. Frazier (*Posey and Spiller's Diseases of the Eye and Nervous Diseases*) says, first of all, that the obstruction of the circulation in both the cavernous sinuses and ophthalmic vein is not necessarily due to thrombo-phlebitis. The pressure of a

tumor in the orbit or sella-turcia, or artero-venous aneurism of the carotid artery, may so interfere with the venous circulation as to simulate thrombosis. Cellulitis of the orbit and phlebitis of the ophthalmic vein may produce a like result, but in case of tumor, absence of fever and gradual onset serve to form a diagnosis. In the absence of any central phenomena, however, it is almost impossible to differentiate between a true sinus thrombosis and phlebitis of the ophthalmic vein.* (*Mont. f. Ohren.,* December, 1912, p. 1529). According to these authors compression of both jugular veins is followed at once by a dilatation of the veins in the fundus oculi, as a sign of stasis in the intra-cranial venous system. Under normal conditions this dilatation disappears again with considerable rapidity as soon as the compression is interrupted, even on only one side. This observation may be advantageously utilized for the diagnosis of sinus thrombosis or thrombosis of the jugular vein, respectively.

Surgical Aspects.—We come now to the consideration of the surgical aspects of cavernous sinus thrombosis, to which I shall devote the rest of this paper. Says Dr. Frazier in an article on this subject (Posey and Spiller on the Eye and Nervous Diseases): "When we consider that only seven in every hundred cases of infective thrombosis of the cavernous sinus recover it would seem that surgeons would have endeavored to enter this field long ago with the hope of reducing the mortality, and yet until recent years no attempt has been made."

The difficulties that at once arise when we consider seriously the surgical aspects and possibilities become manifest. The diagnosis is difficult and in many cases has not been made until metastases have occurred, or the toxaemia is so profound and the thrombosis so extensive as to cause all hope of recovery to disappear. As all otologists know, the principles to be observed in the treatment are recognized fully, and have been applied with constantly increasing success for the relief of thrombosis of the lateral sinus. If the cavernous sinus could be reached, operated upon and drained with as much ease and safety as the lateral sinus the results would be as good in the one as in the other.

That the pessimistic views regarding any operative interference in thrombosis of the cavernous sinus express to a very wide extent the opinion of most surgeons, I have found to be corroborated by consulting both general and special books on the subject. Dr. Frazier writes to me that so far as he knows, "there have been no operations for the relief of this condition in the surgical clinic of the University Hospital of Pennsylvania, and I do not believe any operations have been done in the department of Otology under Dr. Randall. Such surgical textbooks as I have consulted discountenance the operation."

Even Ballinger (*Diseases of the Nose, Throat, and Ear,* 1911, p. 816), says that "palliative attempts to operate on the sinus usually terminate fatally, although successful cases have been reported."

Gruening (*Am. Opthalmo. Trans.,* 1913, xii, 11), pertinently remarks in the discussion of Dr. Snell's paper: "'Inasmuch as the cases of infective thrombosis of the sinus generally end fatally, the way of reaching the sinus and removing the thrombus should be eagerly sought."

In cases in which the cavernous sinus has been involved by extension from the ear through the lateral sinus, attempts have been made to drain the cavernous sinus by opening and curetting the lateral sinus. This operation has been followed by recovery in three reported cases. Cohen-Tervaert (*Klinker Embolisch Geffass,* Berlin), report a case of extension through the ear in which the middle cerebral fossa was opened and several punctures in the direction of the cavernous sinus were made, but without result. This is only applicable to cases in which the posterior fossa of the sinus is involved.

The sinus may be reached either directly or indirectly, in the latter case, by extending the operation made upon the lateral to the cavernous sinus. Operations upon the lateral sinus have apparently, in a few cases, relieved the cavernous sinus, but generally fail, and must do so if the thrombosis is a primary one or is placed well forward; but in cases where the posterior end of the sinus is primarily and directly infected from the bone disease which has extended to the apex of the petrous portion, and the infective focus in the sinus is directly continuous with that in the bone, or in other cases in which the infection reaches the cavernous sinus by way of a connecting sinus, they may be successful. Bircher (*Centralbl. f. Chir.,* 1893, xxii), reports a successful case.

No doubt, the otologists present will be able to add cases of this kind in the discussion.

Levinger (*Munch. Zeit. f. Ohren.,* 1912, xiv), has recently recommended enucleation of the eye and contents of the orbit, and resection of the posterior bony inner wall of the orbit up to the optic foramen. This method allows of the exposure of the inner and lower wall after a further removal of the bone has been done, *i. e.,* resection of the outer and anterior border of the sphenoidal sinus, but so far as the writer knows it has not been done; and if it were, only the anterior part of the sinus could be reached by such a plan.

The credit for the first attempt to directly expose the sinus cavity and remove the thrombus belongs to Dwight of Boston (Dwight and Germain: "Thrombosis of the Cavernous Sinus; Four Cases, Including One Cranial Operation." *Boston Medical and Surgical Journal,* January, 1900, clvi, No. 18, p. 147). A horseshoe incision, apex upward, was made in the temporal region, including the temporal muscle, which was turned down, its anterior edge being two and a half inches back of the outer canthus. The flap

was carried as low down as possible without removal of the zygoma, being practically the one recommended by Krause in his operation for intracranial resection of the trigeminus. The temporal bone was trephined as low as possible, and the opening enlarged with a rongeur. The dura was opened, the top of the temporal lobe lifted backward and upward, until the cavernous sinus was felt with the tip of the index finger of the left hand. A narrow bistoury with protective edges was carried along the finger, and the cavernous sinus opened by an incision one and a half inches long. This incision was followed by a rush of dark, semi-clotted blood. The knife was then withdrawn, a narrow slip of gauze was introduced along the finger which had been kept in place, and the finger was then withdrawn; the gauze which had been left in place entirely controlled the hemorrhage. The dura was brought together, the edges of the skin approximated by interrupted sutures, and the gauze which had been introduced was carried through the flap. There was temporary improvement after the operation. The temperature dropped from 103 degrees to 101 degrees, and the pulse dropped twenty beats; at the end of half an hour the exophthalmos had also disappeared to a great extent. The chemosis and œdema of the lids remained about the same for six and a half hours, and then the patient died.

One month later, Dr. Frank Hartley operated on a patient of Dr. Knapp's (case of traumatic orbital sarcoma, followed by a septic thrombosis of the cavernous sinus). The operation was done at the request of Dr. Knapp, to clear out a sinus which he supposed to be obliterated by a non-infective thrombosis, and to prevent the thrombus from extending to the sinus of the other side by ligating or compressing with a tampon the circular sinus. The operation was done March 1, 1900, and is thus described by Hartley: "A horse-shoe incision was made over the temporal region and extended as in the operation for extirpating the Gasserian ganglion. The periosteum was divided in the line of the incision, and the bone removed. The osteoplastic flap thus formed was raised and reflected over the zygoma, the dura loosened from the zygoma and petrous portion of the temporal bone sufficiently to recognize the second and third divisions of the fifth nerve, and the middle meningeal artery at its entrance into the middle fossa,—but the artery itself was not divided; its distal end was managed by compression beneath the brain by a retractor, while its proximal end was plugged with catgut in the foramen for its passage through the sphenoidal bone. At this stage, the dura was incised just below the cavity of Meckel's space, enclosing the Gasserian ganglion. (This should not be done in septic cases.) The tip of the temporal lobe was then lifted upwards. The escape of cerebro-spinal fluid allowed a greater field for operation, but made the retraction of the brain more difficult to carry out. The sinus was now located in front of the junction of the second and third division of the fifth nerve, and incised longitudinally. No hemorrhage took place at this time, since the lumen of the vein was occupied by a clot which filled it and which was with difficulty removed. In incising this portion of the sinus wall the division of the third and fourth ophthalmic branch of the fifth nerve was seen. The artery was not regarded, as it had already shown evidences of paralysis. After the removal of the clot in this portion of the sinus a probe was passed into the sinus beneath the fifth nerve toward the petrosal sinus. When this part was located the incision into the cavernous sinus was extended and the remaining clot removed. The entrance of the superior petrosal, which at first did not bleed, was seen. After the entire removal of the clot from the cavernous sinus the circular and petrosal sinuses were carefully probed; from these sinuses blood soon flowed, which was accepted as satisfactory evidence of their permeability. The walls of the sinus were then allowed to drop together, and a small strip of gauze was placed against the entrance of the circular sinus. The end of this piece of gauze was brought out through the lower angle of the wound; there was no hemorrhage. The osteoplastic flap was replaced and sutured, but in such a manner that the gauze could be easily removed without disturbing the flap. The patient died of septicæmia forty-seven days after the operation."

Knapp says that this method can be carried out not only in the rare cases of non-infective thrombosis but also in the cases of infective autogenous thrombosis.

Ballance (*Internat. Cong. Otol.*, Boston, August 12, 1912) reports a case of "Septic thrombosis of the left sigmoid, left cavernous and left petrosal sinuses, with suggestions for treatment in future cases." The patient was a boy upon whom a complete mastoid had been done. The sigmoid sinus was exposed and found to be thrombotic; the jugular and its branches were tied. Eight days later symptoms of thrombosis of the left cavernous sinus developed. At operation on the same day the sinus was exposed by the Hartley-Krause incision. No hemorrhage. Incision into the same of about one inch gave exit to a blood clot, and this was followed by pus from the posterior end of the incision. After irrigating with peroxide a tube was passed into the sinus and fixed there. Attention was then given to the wound made behind the ear at the previous operation. It was found that the dura in front of the vertical portion of sinus was gangrenous throughout its entire thickness, and from the upper inner part a little pus mixed with blood was oozing from an opening in the sloughing dura. This opening was enlarged and dead bone removed when a meningeo-cerebral abscess came

into view. The patient died in the afternoon. Post-mortem showed all the sinuses in the upper segment of the left jugular free from clots, except the left lateral toward the torcular. The left cavernous sinus was empty except in its posterior portion, where a little pus was seen.

For approaching the cavernous sinus in such cases Balance has adopted the Hartley-Krause method, with the addition of a recommendation made by Voss—the cutting away of the zygoma and removal of bone from the basal aspect of the skull for better drainage (*Centralbl. f. Chir.*, 1893, xxii).

Hassler and Burger (*Arch. Otol.*, 1896, p. 365), while recommending that the Krause method of incision be used, say that it has not been followed by success.

Concluding Remarks.—From a resumé of the four cases in which operations for the relief of thrombosis of the cavernous sinus have been reported, the inference to be drawn, in spite of the fact of such poor results, is that there is no need for such a pessimistic view as seems generally entertained. Leaving out the procedures applicable to secondary and direct implication of the sinus that occur in ear disease where there is an extension from diseased bone of the lateral sinus by which the cavernous sinus may be reached, we should attempt as soon as the eye symptoms occur a direct attack upon the sinus by the method recommended by Dwight and Hartley, *i. e.*, the Krause incision. Other methods which have been attempted should be discarded, as they are useless and permit the removal of only an anterior part of the thrombus.

When we consider that in the cases so far reported, with the exception of Knapp's, there was serious involvement of the other sinuses, and that sepsis had already existed the reason for the lack of success is apparent. In Knapp's case, however, that notwithstanding the existence of malignant disease as well as the thrombosis, it is encouraging to remember that the patient lived for six weeks.

The difficulties which environ the operation have already been considered, and we have now only to decide what is the best method of operating, and by cultivating it we shall change the now almost certain mortality to some degree of success. It is true that the operation is more difficult and the conditions which indicate the necessity for it are harder to decide upon than in thrombosis of the lateral sinus, yet the mortality in this latter operation was much greater before it was so uniformly performed and the technique so greatly improved. One of the difficulties in operative procedure on cavernous sinus thrombosis is in making the diagnosis soon enough. The distinctive points, the extreme tortuosity of the retinal vessels and the œdema of the mastoid may be wanting, and consequently it may be impossible to make the diagnosis in time to render the operation successful. One point in diagnosis to which I have alluded under "Diagnosis," the compression of the jugular veins, may here very well come into play. No efforts should be omitted to make an early diagnosis, therefore, for a successful issue will depend upon the performance of the operation before the infection extends to the other sinuses through the circular and transverse sinuses; the meninges also are likely to become affected.

The lessons to be learned from the cases herewith reported are: (1) that the cavernous sinus is not beyond the realm of the surgeon's knife; (2) that an incision on one side will suffice to drain the other, and that although both sinuses may be involved the operation is not contraindicated; (3) all operators are in favor of the osteoplastic method, not only in the rare cases of aseptic thrombosis, but also in the infective, autogenous thromboses.

In describing the technique of the operation three points are to be considered:

1. The sinus will be found to be most approachable from the temporal side, and the opening in the skull may correspond precisely with the one which would be made for the exposure of the Gasserian ganglion.

2. The difference in the two operations consists essentially in this: that in exposing the ganglia the operation is extra-dural; whereas, in the exposure of the sinus it is almost imperative to make a dural incision and to approach the sinus in this space between the base of the brain and the dura. Incision in the dura should be made on a level with the base of the skull, the brain elevated, and once the sinus is reached it should be opened and the thrombus thoroughly removed with a curette.

3. It is most important that the seat of the thrombus should be thoroughly drained. Hartley's operation demonstrated that it may be done without grave danger to the patient, provided he be in fairly good condition, as shown by the fact that the patient lived for several weeks, dying of the original disease, sarcoma.

Dwight showed that an incision in one sinus instantly relieved the circulation in both and that such an operation can be done without much difficulty, is not associated with any degree of shock, can be done under almost primary anæsthesia, finished in a few minutes, and that hemorrhage is easily controlled.

My plea, then, is that these operations justify the belief that thrombosis of the cavernous sinus is distinctly an operable condition, and that it holds out the hope that its acceptance may be followed by a decrease in the present excessive mortality in this serious condition.

In any discussion which may follow it is especially desirable that any one who may have done this operation add his opinion as to whether it is, in his judgment, justifiable.

A PLEA FOR THE DIABETIC.*

By DOUGLAS C. MORIARTA, M.D.,
SARATOGA, N. Y.

IT was only after considerable thought that I decided to present my views on this subject for your consideration today thinking that perhaps my personal experience alone did not justify my conclusions. The more I considered the subject, however, making inquiries among practitioners concerning their advice to their diabetic patients, the more strongly I felt that I am justified in the position I have taken, that the attention given the diabetic patient by the family physician is often of a very low standard. It is not the errors of commission that I would emphasize, but those of omission.

I have made no reference to the theories of the etiology, the pathology, or the treatment of this most complex condition. The last word on the subject has not been written, and I prefer at this time to accept the conclusions which stand out, as we review the literature of the present day.

The all-important fact which we must consider in the care of the diabetic, regardless of the theories of the etiology or pathology, is that a perverted metabolism for carbohydrates exists; and, further, that the relief afforded these cases will be in proportion to our ability to overcome this manifestation of the disease.

I have practiced my profession at Saratoga Springs for many years, and every season see a large number of diabetic patients. The diagnosis I need not discuss, as nearly all the transient cases come to me with the diagnosis having been made. This particular class of cases comes from all over the country, and many of them from your own city; but I have yet to see the first case—the *first* case, mind you,—that has been advised at all definitely concerning their method of living, the danger from complications, or how best to avoid these dangers.

I find them, one and all, totally ignorant concerning both the quantity and quality of their diet, except that sugar has been interdicted, and usually wheat bread as well; though often the bread has been limited to a small indefinite quantity with each meal. Others are living on their regular diet, except that they have been advised to substitute gluten bread for wheat bread. Because of doing this, they apparently feel secure, and that there is little else for them to do. This opinion of the benefit to be secured by the use of gluten flour is as harmful as it is widespread. The flour has been so generally advertised, and so universally accepted, that it is hardly to be wondered at that the patient believes in it, but his physician should know better. It contains, as you know, from forty per cent to fifty per cent of carbohydrates. Instructive information concerning its composition is given in the annual report for 1913 of the Connecticut agricultural experiment station at New Haven.

From my experience I must conclude that very little attention has been given the diabetic in the past by the family physician; that such a thing as individual tolerance has not been considered at all, has not entered as a factor into their treatment, nor in the advice given them by the family physician. Gentlemen, I cannot feel that my experience is a unique one.

As I have said, I see a great many diabetics, but it is only for a brief period, and I would not have you infer that I believe it possible to afford them any lasting benefit in so short a time, for I do not, *unless* they follow the method of living which I have taught them, and *stick to it*. But I do maintain that when they come to me with all the symptoms that diabetics are heir to,—extreme thirst, almost unbearable pruritis, polyuria, neuritis, high blood pressure,—and are relieved of these symptoms, almost at once, by following specific advice as to the quantity and quality of their diet, with some suggestions as to personal hygiene, it is a sad commentary on our profession when this advice is *not* given them by their attending physician. Many, if not the majority, of these patients will get continued relief, and will also escape the complications of boils, carbuncles, and increased blood pressure, if they adhere strictly to the regulations laid down for them; and I most positively assert that many of the symptoms would never have presented themselves had the patients been properly advised.

There are many cases of diabetes, as we all know, that can be spoken of as benign, that is, the symptoms yield readily to a moderately restricted diet, though we do not know for how long, or when the case will become complicated. Consequently, *each* case of diabetes should be considered of moment by the physician, and every patient should be plainly informed of his condition. The probably satisfactory results of a correct manner of living should be set forth; and, on the other hand, the disaster sure to follow indifference to such advice. I am confident that in our routine work, such a course is the only one that a physician can conscientiously pursue. The disease is a chronic one, and an incurable one. The mild cases will always require more or less care, while the more anxious ones demand the constant observation of their physician, who must of necessity formulate all the details of living, if their welfare is to be conserved.

To do diabetic work well one must be a painstaking practitioner, a keen observer of clinical manifestations, having patience with small details. Most fortunate, above all, is it if he be of a convincing personality; one who can inspire his patients with belief in him and willingness to

* Read at the Annual Meeting of the Medical Society of the State of New York, at New York, April 29, 1914.

follow his advice absolutely, as his encouragement and moral support will often help them to do the things needful, which otherwise they would not do.

The physician must control his patients, and if he has their confidence he will be sure of their co-operation, which is absolutely necessary if the treatment is to be successful. If he feels that they cannot or will not follow his advice he must either have them in his hospital or under the care of a competent nurse, as a knowledge of the intake is quite as imperative in determining the diet as the information from the contents of the urinary secretions.

The physician must acquire a knowledge of the idiocyncrasies of each patient in their reaction to the various kinds of foodstuffs, *i. e.,* carbohydrates in their several forms, the proteids and fats and the resulting toxemia when nature fails and a more alarming condition supervenes. To do this he must have some knowledge of physiological chemistry, of laboratory work and of the value of foodstuffs, as to their percentage, composition, and caloric units.

He will find it necessary to educate his diabetic patients. He should tell them plainly that they are living over a volcano, so to speak, and that if they care to live and live in some comfort they *must* accept the situation and endeavor to help. He will teach them that in the diabetic there is a wide difference in individuals in their reaction to food; that there are no two cases alike; that different starches act differently with different people, and even differently in the same individual at different times; and that either a perverted carbohydrate or fat metabolism may prove serious and cause an alarming acidosis without premonitory symptoms. In the severer cases of diabetes, if the physician possesses special information concerning the preparation of food, he can help his patients amazingly, for a restricted diet may, with a knowledge of cooking, be made more varied, appetizing and bearable. In fact, the best assistant a doctor who treats diabetics can have is a good cook.

It might be inferred that I suggest that all diabetic patients should be referred by the family physician to men who specialize in this field. But I do not, nor do I believe it is at all necessary; but I *do* believe that the family physician should be as big as his job. I believe he can easily acquire efficiency in the care of these cases if he will; and if he does, the gain to his practice will be quite as great as that to his patient.

While men doing this work constantly find it convenient to have a physiological chemist and laboratory at their command, I believe any of us can have a corner in our office where we can do this work efficiently, after a little practice, even without a previous laboratory training. I have such a little laboratory and do not find the work particularly burdensome, though it uses up considerable time. It keeps me in immediate touch with the patient's condition, so I feel amply repaid.

My laboratory outfit is simple. I have only a few reagents and little apparatus. I consider it efficient, however, and have confidence in my findings.

My routine in diabetic cases is to determine the sugar, acetone and diacetic acid, qualitatively and quantitatively.

The sugar determination is done with Benedict's tests, which meet all requirements admirably, being accurate, characteristic, delicate and easy to do.

Benedict's formula for qualitative determination of sugar is:

	Grms.
Copper sulphate.....	17.3
Sodium or potas. citrate.....	173.0
Sod. carbonate (crys.).....	200.0
Distilled water to make.....	1000.0

This reagent keeps indefinitely, is ten times as delicate as Fehling's and is reduced by practically only one substance found in urine other than glucose, and that is glycuronic acid. This substance is seldom present, however, and if it is it acts in the same way upon all other tests for the determination of glucose with which I am familiar. If there is any question as to the presence of glycuronic acid, the urine is fermented for twenty-four hours and then tested; if a reaction occurs it is positive.

Benedict calls special attention to the following facts in relation to his qualitive tests: "As there is no dehydrating substance present the reduction product is apt to be red, yellow or greenish, abundant in quantity, appearing throughout the solution, rather than the red suboxide, which is so characteristic of other tests and with which we are familiar. Bulk and not the color of the precipitate is made the basis of the reaction. Thus the test can as easily be made in artificial light as in the daylight."

To test a specimen of urine qualitatively with Benedict's reagent take 5 c.c. of the reagent in a test tube, to which is added not more than eight to ten drops of urine. The mixture is then heated to vigorous boiling, kept at this temperature for one or two minutes and allowed to cool spontaneously. In the presence of glucose the entire body of the solution will be filled with the precipitate. If the quantity of glucose be low the precipitate forms only on cooling. If no sugar be present the solution remains perfectly clear, or it may show a faint turbidity that is blue in color, which is due to the presence of urates.

The formula for this quantitative test is:

	Grms.
Copper sulph. (pure cryst.).....	18.0
Sodium carb. (cryst.).....	200.0
Sod. or potass. citrate.....	200.0
Potassium sulphocyanate.....	125.0
5% solution potass. ferrocyanid...	5.0
Distilled water to make.....	1000.0

Twenty-five c.c. of this reagent are placed in a poreclain evaporation dish over a flame and 10 to 20 grams of crystallized sodium carbonate and a small quantity of powdered pumic stone or talcum are added. This mixture is heated to boiling until the carbonate has entirely dissolved. The urine, which has been diluted to 10 per cent, is then run in rather rapidly until a chalk-white precipitate forms, and then more slowly, a few drops at a time, until the last trace of blue color disappears, which marks the end point of the test. The solution must be kept boiling vigorously throughout the process. If the mixture becomes too concentrated during the process water may be added to replace the volumn lost by evaporation.

The 25 c.c. of copper solution are reduced by exactly 50 grms of glucose.

In the quantitative test the copper is precipitated as a cuprus sulphocyanate, a milk-white compound, which fact is of decided value to the accurate observation of the end point of the reaction.

To qualitatively determine acetone I use Brotherhood's modification of Taylor's test. To 15 c.c. of urine two grains of sodium nitro-prusside is added. Shake and dissolve. Now add a few drops of a solution of glacial acetic acid and stratify with ammonium hydroxide; a magenta color at the point of contact indicates acetone.

To determine diacetic acid, qualitatively, I use Gerhart's test. To five c.c. of urine in a test tube add ferric chloride solution (10%) slowly until no more precipitate forms. A Bordeau red color indicates diacetic acid. *The quantitative determination of these substances is done by estimating the ammonia nitrogen by the Folin method.*

Place 25 c.c. of urine in an aerometer cylinder, add about one gram of dry sodium carbonate and introduce some crude petroleum to prevent foaming. Insert into the neck of the cylinder a rubber stopper provided with two perforations, into each of which passes a glass tube, one of which reaches below the surface of the liquid. The shorter tube is connected with a calcium chloride tube filled with cotton, and this tube is in turn joined to a glass tube extending to the bottom of a 500 c.c. wide-mouthed flask, which is intended to absorb the ammonia, and for this purpose should contain 20 c.c. of distilled water and a few drops of an indicator ("alizarin red"). To insure the complete absorption of the ammonia the absorption flask is provided with a Folin improved absorption tube. In order to exclude any error due to the presence of ammonia in the air a similar absorption apparatus to the one just described is attached to the other side of the acrometer cylinder, thus insuring the passage of ammonia-free air into the cylinder. With an ordinary filter pump and good water pressure the last trace of ammonia should be removed from the cylinder in about one and one-half hours. The number of c.c. of the N/10 sulphuric acid neutralized by the ammonia of the urine may be determined by direct titration with N/10 sodium hydroxide.

Thus I easily and accurately do essentially all the laboratory work necessary in a diabetic case with, as I have said, a few reagents and a small amount of apparatus; and I have had no special laboratory training.

In my early practice carbohydrates were withdrawn from the diet of diabetics until the urine became sugar free; no importance was attached to the rapidity with which they were withdrawn. Acidosis was not associated as a result of so doing. But in recent years much study and experiment on the part of the physiological chemist have given us a mass of clinical information from which the following points stand out.

1. Acidosis is always a menace to the life of the diabetic, and a factor to be considered in the treatment.

2. Ketone bodies, when found in the urine, should always suggest the possibility of a supervening acidosis. These bodies appear when the carbohydrates are diminished to control the secretion of sugar, and are the results of an imperfect oxidation of the fatty acids.

3. The secretion of these bodies in the urine is of more significance, temporarily at least, than that of sugar.

4. It is, therefore, apparent that the intake of carbohydrates should never be abruptly withdrawn; and only markedly so, when the patient is under personal observation.

5. Various carbohydrates, and the alkalies, are the most potent prophylactic remedies as well as the only ones with which to combat acidosis when it appears.

6. Tolerance for carbohydrates varies in different individuals; and may vary in the same individual at different times.

7. The tolerance in *every* case, as well as the intake, should be constantly in mind, for occasionally more sugar is secreted than should result from the carbohydrates taken in; and further, with care and attention, the tolerance is often increased.

8. A diet low in caloric units when not contraindicated, is often helpful in relieving obstinate symptoms.

9. Exercise, massage, and a limited amount of alcohol, assist the oxidation of carbohydrates, except in severe cases, where exercise increases ketone production.

My routine procedure, in a case of diabetes, is as follows. After the history and diagnosis have been made, I direct the patient to follow his usual diet for forty-eight hours. The urine is collected for examination during the last half of this period. For the following forty-eight hours I give the patient a definite diet, carefully directing the quantity. The urine is collected during the last half of this period also. Each specimen is examined for sugar, acetone and diacetic acid.

From this data, the case is temporarily classified, according to the percentage of sugar present, and whether or not this is accompanied by the ketone bodies. The information acquired when the patient is living on an unmodified diet is useful for a comparison as the case proceeds. The case may be considered mild if sugar only is present, and serious if, in addition to the sugar, the ketone bodies are found. The urinary findings suggest the immediate procedure.

I tell the patient very plainly the seriousness of the condition. I seek to impress upon him the necessity of following implicitly the directions given (all of which are carefully written down for him); and I try to enlist his co-operation. I tell him that there is no other way; that he has no option if he wishes to live comfortably while he does live. I also tell him that if he is willing to do as directed and help me, he can probably live many years, though his condition may become anxious at any time.

For the period of a month I examine the urine daily and have the patient keep a record of the food taken. The quantity of food is generally estimated, though in some cases I resort to the scales to determine the quantity which is allowed. I seek to keep the caloric value of the food low when the carbohydrate tolerance is small, unless contraindicated, as in emaciated cases, or young and growing persons. When I find a low carbohydrate tolerance and sugar is present, with or without ketone bodies, I do not reduce the carbohydrates further unless the patient is under my immediate observation or with trained attention.

While all this is simple to describe I assure you the management of these cases is always a source of anxiety After a month of such observation I have a good clinical idea of the individual peculiarities and carbohydrate tolerance. Some cases yield almost at once on a restricted diet; others do not, and require a great deal of thought.

I have little or no occasion to use drugs unless one so characterizes our Saratoga mineral waters; these I have come to believe are valuable synergists in the correcting of some obstinate manifestations in this disease. These patients all seem inclined to a torpid condition of the bowels and a relatively high blood pressure. The first is most satisfactorily treated with our cathartic waters; at the same time the blood pressure is invariably diminished. I also direct the use of the alkaline waters with or without an added alkali, as seems necessary. In those cases where iron is indicated I use the chylebeate water, which we have at Saratoga.

I have my patients walk, when able, to one of our cathartic springs each morning before breakfast and drink a quantity of the mineral water, sufficient to produce one full watery stool. Midway between meals and before retiring I direct the drinking of two glasses of water from one of the alkaline springs. If the urine is plus acid I add bicarbonate of sodium to the spring water, which has proven to be a most palatable method of administering it.

In addition to the morning walk to the spring I have the patient exercise by further walking, directing a definite distance for the day. In the beginning, if the patient is easily fatigued by walking I substitute a full body massage. I increase the amount of exercise taken from day to day as rapidly as is consistent with each individual case, often to four or five miles a day, endeavoring always to avoid fatigue. A mineral bath is also directed daily at a temperature of 100 degrees F., allowing the patient to remain in the tub for a period of ten minutes; this to be followed by a hand rub and a rest of half an hour or more.

When this regimé is followed I have yet to see the first case where there has not been a general amelioration of the pruritis, thirst, polyuria, constipation, blood pressure and fatigue, all of which were distressing symptoms at the commencement of the treatment.

SOME RECENT THOUGHTS ON DIABETES AND METABOLISM.*

By WALDRON B. VANDERPOEL, M.D.,
NEW YORK CITY.

TO the painstaking and widespread labors of the laboratory workers is to be attributed much of the medical progress of the present day. Through their efforts with the intelligent co-operation of clinicians, a firmer and more scientific basis has been established for general etiology, pathology and therapeutics. The result of these labors are manifest in the modern conception of diabetes mellitus, but not in so brilliant a manner as in most other fields of medical research.

Diabetes mellitus is classed by many as a symptom complex and not a distinct disease entity. This is because of the number of types with a differing etiology for each. The phases and problems presented by this morbid condition are of more than ordinary difficulty of interpretation. Glycosuria has commanded the ablest medical thought, and been subjected to the most searching scientific investigation from the earliest records in medicine, yet it remains today an unsolved problem in many details. The appearance of glucose in the urine was formerly considered diagnostic of diabetes in practically all cases. Later research has revealed, however, that glucose is not an infrequent constituent of the urine. Some eminent observers, notably Pavy, Germain See, Moritz, and several others came to regard it as a physiological element of the urine. The majority of authorities never went thus far, but always considered it an abnormal product. In recent years the distinction has been very rigidly drawn, glycosuria be-

* Read at the Annual Meeting of the Medical Society of the State of New York, at New York, April 29, 1914.

ing considered as a local and transient manifestation, while diabetes is a constitutional disease with pathological findings and general symptoms. In accordance with this view a glycosuria alone, even though resistent against the cutting off of carbohydrates, does not constitute necessarily a diabetes; there must be some evidence of disturbance of metabolism typical of that disease, as impaired power to consume sugar or fat. The heat production of the body in diabetes is not less than normal; in fact, it exceeds it by 6-7 per cent, as has been ascertained experimentally and clinically. The power to consume sugar is lessened or lost, but the power to consume protein is retained, as is that for fats, to the full degree mostly. In the final stages of diabetes and in coma heat production may become less than normal. There is, however, in diabetes diminished power to endure physical exertion on account of impaired energy of the heart and nervous system.

Conceptions of the morbid anatomy of diabetes are still in a transition stage. Opinions among pathologists differ so widely that theory must be considered as largely overbalancing actually proven and accepted facts.

As a result of experimental and clinical observations the following tentative propositions may be stated:

(1) The liver is closely identified with the morbid process known as diabetes.

(2) The nervous system is frequently structurally or functionally involved primarily, but may be only made manifest by changes in the hepatic circulation.

(3) The pancreas is undoubtedly concerned in the production or assimilation of glucose. This gland is supposed to supply a hormone or ferment which stimulates glucose conversion in the muscles. The ductless glands have an undeniable influence over carbohydrate metabolism. These glands are the adrenals, thyroid, parathyroids, pituitary, the islands of Langerhans of the pancreas. The later supplying the secretion from the pancreas which affects carbohydrate assimilation. The thymus gland and the ovary may be added to the list later.

To a certain extent confirming the above classification, it is usual to recognize clinically three types of the disease:

(1) An hepatic type.

(2) A nervous one, accompanying lesions of the nervous system.

(3) A pancreatic form.

Some prominent observers discard all forms except the pancreatic one, not recognizing the liver, except as a glycogen storing organ, and considering nervous lesions merely incidental.

As is well known, two opposing factors contribute to produce glycosuria, viz., excessive formation of sugar on the one hand, as against failure of the muscular tissues to burn it up. The latter is considered as the characteristic feature of diabetes, but it also exists to a certain degree in transient glycosurias. In like manner glycolysis may prevail in diabetes. In regard to decreased power to burn up or assimilate glucose, it appears as though certain individuals were born with a weakening of this power. This may remain latent for years and perhaps never develop at all or only as a transient glycosuria. Under the influence of an exciting cause, trivial to a normal individual, a simple alimentary glycosuria may at first result, going on later to diabetes or the latter may be instituted at once.

Diabetes is to be considered as those forms of glycosuria which continue after the elimination of all carbohydrates from the diet. A thorough understanding of the changes and processes is of vast importance in the study of diabetes. Along these lines work of great interest and value has been conducted of late years, and a better insight has been afforded of the changes attending upon diabetes than had ever been obtained before. From these studies it is possible to make the statement that considerations of metabolism and of diabetes are so closely interwoven and their study follows lines so nearly approximated as to make the two terms seem almost interchangeable as far as this disease is concerned. It is not so long ago that the carbohydrates in the dietary were alone considered the producers of glucose. We now know from studies in metabolism that proteins are available for this purpose and also, to a certain extent, the fats. In severe cases the tissues of the body, protein and fat, are seized upon unless the diet can be so regulated as to spare them; this constitutes the so-called "sparing system" of diet. This makes intelligible many failures and peculiarities in the results obtained from the old time rigid non-carbohydrate diet. Many of us years ago found more satisfactory results following a fairly liberal diet, but were unable to give any valid explanation therefor. From impaired carbohydrate conversion the system is deprived of the supply of alcohol which ordinarily comes from their proper metabolism and which is essential for the proper conversion of proteins in the diet into tissue building material. Fat, protein and sugar must all split before they become available for oxidation. The molecule of glucose must be split into two molecules of lactic acid before it can be burned in the animal body. Intermediate stages exist, but they are far from being clearly understood. From the lactic acid stage on through ethyl-alcohol, provided this direction is held in the animal body, the powers of the diabetic are almost normal, but the first steps, from glucose to lactic acid, he cannot perform, but the reverse direction, from lactic acid to glucose, he has the power to perform. When the amount of lactic acid in the body is low the tendency is to split up glucose when high lactic acid is split up. The consumption of glucose is largely in the muscles. The power to consume glucose is rarely if ever entirely lost. The degree of impairment has been

used as an index of the severity of the case. Severe cases can burn only the glucose formed from the proteins of the diet, increase the amount of this substance and glucose appears. In still more severe cases sugar formed from the proteins of the diet is not consumed and glycosuria continues even on a protein diet. On a protein-fat diet some cases, when a definite amount of sugar is given, present the same amount in the urine. Other cases present a less quantity or an increased one; these indicate, respectively, improved or diminished power to consume sugar. Exercise carefully regulated usually improves the power to consume sugar in mild cases; less so as the type becomes more severe. In advanced cases there will not only be no lessening, but an increase, showing that the protein of the diet and that of the tissues is being consumed or acetone bodies appear or their former amount is increased, showing that the fat is being attacked. Protein disintegration is greatly increased in diabetes over the normal ratio. To maintain the nitrogen balance enormous amounts of protein are required. If, however, fat is added to the diet the quantity of protein can remain at an average normal amount. In the normal individual there is the sparing of the protein tissues, as already noted, by disintegration of the protein and fat of the dietary; this becomes lessened in the diabetic. Glucose will be consumed in preference to either protein or fat; by this means acetonemia may be delayed. In severe cases it may become necessary to give enormous quantities of protein to maintain the nitrogen balance; from these the sugar formation is excessive and the tissues become much injured. The amino-acids of the protein molecules when hydrated may undergo one of two chemical changes: they may be deaminated, the nitrogen changed to ammonia (urea) and the fatty acids burned; or the carbonaceous portion of the amino-acids converted into glucose and the nitrogen changed to ammonia (urea), as before.

In diabetes the less reserve of glycogen there is, the nearer is the danger of acidosis. The formation of fat is also, as a rule, diminished in diabetes, but there are exceptions. When a fatty acid is burned normally butyric acid results; in diabetes this is oxidized into oxy-butyric acid, and from this we get diacetic acid and acetone. Acetone appears in the urine when there is interference with the proper combustion of carbohydrates in the body. This condition can be brought about by lessening the amount of carbohydrates administered in the diet. This lessening of the carbohydrate supply may occur in starvation, fevers, etc., or from inability of the tissues to metabolize the glucose in the blood, as occurs in diabetes. Acetonemia may occur in normal individuals if the amount of carbohydrates in the diet is reduced to seventy-five grams per diem, this is about thirty per cent of the average daily intake. There are a few substances, like ethyl-alcohol, citric acid, etc., also including the carbohydrates, which possess an anti-ketogenic function; that is, depress the formation of the acetone bodies, thus partially neutralizing acidosis. In the medium and severe forms of diabetes the urine will always contain glucose and acetone. In these cases it may be possible to free the urine of glucose by regulating the diet, but the acetone will not be entirely removed, this fact may be of service in making a diagnosis where the case has been modified by dieting.

As a result of discarding the rigid non-carbohydrate diet a number of systems of "cure" have been brought forward, the oat-meal cure of von Noorden, rice cure of von Duhring, potato cure of Mosse. Each possess certain merits but none of them must be relied on exclusively. The oatmeal cure has proved the most valuable, but it must be modified, by limiting to certain periods, "carbohydrate days." Whole wheat and barley ground together have been advocated for bread in the diabetic diet.

The studies in metabolism in diabetes here briefly outlined are constantly extending and adding valuable accretions to former conceptions on the subject, old theories are being exploded, etc., all leading to a clearer comprehension of the changes taking place in diabetes, a fuller knowledge of the disease, and supplying valuable data for more satisfactory treatment. For years these cases have been an opprobrium to the medical profession, a routine treatment has prevailed for the most part, with the patient going on from bad to worse, the physician usually feeling he had done all that was possible when he had cut out all carbohydrates and succeeded in reducing the glucose percentage in the urine. The patients were expected to die, and I fear we did little to retard that result, if we did not actually hasten it, at all events it seems questionable whether the patient was not more uncomfortable under the restraints and denials imposed. Under the newer plan more hearty co-operation prevails on the part of the patient, and the results in many cases have far surpassed those known in former days.

Discussion.

Dr. N. B. Foster, New York City: In discussing these two papers relating to the treatment and the pathogenesis of diabetes mellitus I wish to transpose the order of presentation, as what I have to say relating to the metabolism has a bearing upon the treatment.

I believe the Doctor is correct in implying more than a single cause for diabetes. At least there is not a constant pathology. The only organ that is found involved with any degree of constancy is the pancreas; but even here there are exceptions. And it is a striking fact that with young individuals, where the disease runs its most rapid and malignant course, and where the term "pancreatic diabetes" is often used to designate the severity of the disease,

just in these cases we occasionally find at autopsy no significant lesion in the pancreas; no hyalin degeneration of the islets, nor interstitial fibrosis. That the majority of all cases, young or old, do present pancreatic lesions is not disputed; the point is that *all* do not reveal a constant lesion. Our conception that the pancreas is concerned with diabetes derives support not so much from the findings at autopsy as from the experiments on dogs. Removal of the pancreas invariably leads to fatal diabetes. Now if we could learn how this occurs we would doubtless learn something of the pathogenesis of the human disease. We know only that the dog so operated upon can no longer burn sugar; he derives his energy from fat and protein. This is demonstrated by the respiratory quotient which is low. The same is true for severe cases of human diabetes; the quotient shows a fat-protein metabolism. The idea suggested by von Noorden that there is a primary over production of sugar in the body lacks a vestige of evidence. The trouble is fundamentally that sugar can no longer be utilized. It cannot be warehoused as glycogen when it is ingested and the tissues cannot utilize it for energy. In what way the pancreas functions to enable the tissues to use sugar we may only conjecture. We speak of an internal secretion but our evidence is of a very dubious character. An hypothesis is permissible, but let us not forget that it is purely an hypothesis. We must be content with the fact that with human diabetes there is in some degree a failure to utilize glucose. When this function is but slightly impaired the disease is mild or early; when gravely impaired no sugar is burned in the body and death quickly follows. Now one new consideration enters at this point and that is that fats are burned normally only when some sugar is being burned also; or as it has been worded, "fats are burned in the fire of carbohydrates." From this it follows that when the body consumes but little sugar, about fifty grams per day, the fats are not burned to CO_2 and H_2O, but only to the ketone stage; oxybutyric and diacetic acids. This is not peculiar to the diabetic, a healthy man may excrete thirty to forty grams of ketone bodies per day if the diet be suitable for it. Consequently we are confronted therapeutically with this problem—to limit the carbohydrate ingest to the body's capacity, and to increase that capacity to ward off acidosis. Now the principle in treatment is that rest of a diseased function strengthens it and over-use weakens it. It follows that we are not completely successful in treating any case of diabetes so long as glucosuria persists, simply because the function in question is being overtaxed and weakened. On the other hand, we invite disaster if less starch be allowed than can be cared for, because this almost surely results in acidosis. It is in the early stages of this disease that most can be accomplished and where I am afraid I must say that least effort is made. The danger of toxæmia in younger persons and gangrene in older ones are not sufficiently appreciated until it is too late. And am I asserting too much when I say that if careful and intelligent treatment can bridge over these states when already established, then had the same care been exercised earlier the conditions would not have arisen?

CONSERVATISM IN THE OPERATIVE TREATMENT OF SIMPLE FRACTURES.*

By GEORGE WOOLSEY, M.D.,
NEW YORK.

BY conservatism I do not understand the use of those methods only which generations of surgeons have stamped with their approval, the adherence to the established order of things, in opposition to change. By conservatism in the operative treatment of fractures I mean the use of any old or new operative method of treatment which best meets the indications, when operative treatment is decided to be necessary or advisable and safe.

Long after other branches of surgery had undergone a complete revolution, fractures were treated as they had been for generations, except fractures of the patella.

Some years ago, in 1896, before the Surgical Section of the Academy of Medicine, and again in 1900 before the N. Y. Surgical Society,† I read papers on Massage in the Treatment of Recent Fractures, especially periarticular fractures, the method so enthusiastically championed by Lucas Championiere, of Paris. The results obtained, especially in many periarticular fractures, were excellent, far better in point of the time required and the function of the neighboring joint, than by the method of fixation. But surgeons were very slow to adopt this or any new method. Such a hold had the old routine method of treatment obtained that any innovation took slowly. Another potent reason for the ultra-conservative treatment of fractures was the fear of suits for malpractice. Most malpractice suits were based on the results of the treatment of fractures, which deterred surgeons from departing from the long established methods, so they could rely upon one another in the defence of such suits.

The use of the X-ray showed that the old orthodox methods were responsible for many cases of non-union and for many poor results, a considerable number of which could easily be improved. Finally a number of new operative procedures were launched and became popular and the pendulum, as is so often the case, swung to the opposite extreme, and many cases were unnecessarily operated on, sometimes with an unfortunate result. As these procedures combine the good and the bad, the salutary and the

* Read at the annual meeting of the Medical Society of the State of New York, at New York, April 29, 1914.
† *Anns. of Surg.*, September, 1900.

dangerous, it behooves us to select the good and avoid the dangerous by the proper selection of cases to which the newer procedures are to be applied.

This is what I understand by conservatism in the treatment of fractures as opposed to the tendency to apply too enthusiastically new methods not without danger. No one method is suitable for all cases, but each case must be judged by itself. This is the key-note to the correct treatment of fractures. It is time to sound a warning against the indiscriminate and even the frequent use of open operation in the treatment of simple fractures. With few exceptions we should first attempt, with the use of the X-ray and often of anæsthesia, to obtain and maintain a proper position of the fragments, without operation. Not until such earnest efforts, sometimes repeated, have failed should operative treatment be considered, in most cases.

The X-ray is of the greatest service in showing which cases are suitable or unsuitable to the various methods of treatment. It must be interpreted with reference to the clinical symptoms and examination.

The passage of employers liability acts and the use of X-ray plates in medico-legal cases has begun to lead to a closer study of fractures with a view to obtaining more perfect results.

A most important point to remember is that good function is much more important than the position of the fragments, and that it may be obtained when the position is by no means perfect, and that it may not be present when the position is nearly perfect, though it is most likely to be. Both the public and the employer are more alert in regard to the results of the treatment of fractures, demanding primarily the best possible function and secondarily the best position possible.

The first essential then to conservatism in the operative treatment of fractures is a careful clinical diagnosis verified or corrected by an antero posterior and lateral X-ray, whenever it is possible. The latter serves not only to correct the diagnosis but as a means of record and comparison, in case displacement requires reduction. If the fragments are not in good position reduction must be attempted and the result of the attempt disclosed by another X-ray. This attempted reduction must be made early, in the first four or five days if possible, otherwise it is more difficult. This reduction of displacement is the essential thing in the treatment of most fractures, for when a fracture is reduced it is, as a rule, easy to hold it in position by a variety of means. In many cases, more often than is customary, the reduction should be made under an anæsthetic, which relaxes the muscles. This is especially true of many periarticular fractures and most if not all transeverse fractures of the femur and humerus. Adequate reduction is most important in periarticular fractures, for here deformity interferes with free joint function. In transverse fractures end to end replacement of the fragments is essential, otherwise non-union or weak union, easily refractured, is the rule. This is an important class of fractures and the X-ray, in my experience, has shown them to be more common than they were formerly supposed to be.

If end to end apposition is not obtained, what can we do or what happens? The correct practice is to again attempt reduction under anæsthesia, angulating the limb at the fracture, if necessary, until the ends come together and then straightening it. If done in the first five to seven days this should be successful, if done later extension may be required to overcome the overriding. In transverse fractures of the humerus it is quite possible to overcome overriding by traction, if applied early, but there is here little excuse for not reducing the displacement under anæsthesia. In the femur, however, traction applied by adhesive plaster to the skin is not capable of holding a transverse fracture that has not been reduced. Some years ago I operated on an ununited transverse fracture of the femur, ten weeks old, that had been treated by a physician with Buck's extension. At the outset the shortening was only a small fraction of an inch, but when I operated it was three and a half to four inches and fully one and a half inches of bone had to be removed to bring the ends together, on account of the atrophy of the muscles. More recently I have used Martin's method of traction, under anæsthesia, with 75 to 125 pounds applied by a canvas band over the upper end of the exposed lower fragment, with satisfactory results, but the longer and more free exposure increases the risk of infection, which should be avoided before using a bone plate.

Last fall I had a patient, about twenty years old, with a nearly transverse fracture of the femur, with over three and one-half cm. shortening five weeks after the injury. In an effort to avoid the necessity of bone plating I used a Steinmann nail through the lower end of the femur, after breaking up whatever slight union there was. The weight was increased to thirty and thirty-five pounds, which acted directly on the lower fragment. He was discharged with a scant centimeter of shortening and firm union.

Traction applied through the Steinmann nail is the most effective, safe method of reducing the overriding. If applied before the muscles have shortened too much it will be possible to wholly overcome the overriding. In oblique fractures this is all that is required; in transverse fractures end to end alignment must be obtained, under anæsthesia. The alternative is open operation, and when shortening has occurred, preliminary traction by means of the Steinmann nail is the best method of facilitating end to end apposition. In transverse fractures, therefore, the question of open operation not infrequently arises.

The operative treatment of simple fractures

varies according to the bone fractured. We will therefore consider it with reference to several of the more common fractures, and follow this with a few remarks on the operative methods.

In simple depressed fractures of the skull with symptoms we always operate. The same holds in many similar fractures without symptoms, when we can make the diagnosis of depression, on account of the danger of cortical irritation, giving rise to epilepsy, which I have seen in a number of cases. It is questionable how much good this does in preventing epilepsy in such cases. This cortical irritation may be due to the depressed bone, to dural thickening and adhesions, to a cyst resulting from a blood clot, etc. I have operated in several cases of infants who presented marked depression from forceps delivery. One case was that of a baby, twenty-one hours old, who was brought to me thus early, as the previous child of its mother had died in convulsions, with a similar condition of the skull. In these cases it is very easy to elevate the depressed skull with an elevator introduced through a small opening in the skull at the border of the depressed area.

The two other fractures that have been treated for many years by most surgeons by open operation are fractures of the patella and of the olecranon. In the rather rare cases of fracture of the patella by direct violence and without much separation, bony union may be obtained without operation. I have shown one such case before the N. Y. Surgical Society, treated by massage, where there was free motion and firm union at the end of five weeks. The vast majority of indirect fractures of the patella are best treated by open operation, provided the facilities for an aseptic operation are available and there are no complications.

I find that a curved transverse incision crossing the front of the knee joint just below the patella gives the best exposure. The blood clot and the ragged folds of stretched fibrous tissue, lying between the two fragments are removed and trimmed off, the lateral tear in the capsule on either side of the patella is carefully sutured with catgut and the fibrous tissue in front of the two fragments brought together with two or three chromic gut sutures. This brings and holds the two fragments firmly together. In fact the suture of the lateral tears accomplishes this, as in Vallas' operation, but I prefer to reinforce this with two or three chromic sutures in front of the patella. It is unnecessary and therefore unwise to drill the fragments for the passage of absorbable sutures or wire, and the latter is objectionable as it is likely to produce osteoporosis. The operation is done about a week after the injury, after the tissues have had time to recover their normal resistance, which is lowered by the trauma. I have tried Murphy's plan of injecting 2 per cent formalin in glycerine into the joint about five days before operating, in only one case. He claims that it so reduces the danger of joint infection as to relieve one of all worry, but in this case there was an intense post operative reaction, so as to give me more worry than usual.

I have seen only one bad result from operation on a fracture of the patella and that followed a subcutaneous purse string suture, many years ago. One should avoid as far as possible putting anything but perfectly sterile instruments into the joints, even the fingers covered with sterile gloves.

In most cases fracture of the olecranon does not heal by bony union unless treated by open operation and the intervening blood clot, etc., removed. Hence I have treated most of them in this way, using chromic sutures only through the overlying fibrous tissues, as a rule.

This brings us to a consideration of some fractures about which there is not such unanimity of opinion or uniformity of practice. I will consider especially fractures of the femur, forearm and leg.

The use of Lane's, or other forms of metal plates was welcomed by many surgeons in the treatment of fracture of the femur, in many of which extension by a Buck's extension or a Hodgen splint failed to give a satisfactory result. Many cases were operated unnecessarily or without proper selection, and I know of more than one fatality resulting. This led to a more careful use of extension, controlled by repeated X-rays. But the extension was often inadequate, especially in transverse fractures. If these are recognized by the X-ray, as they should be, an early attempt at reduction under anæsthesia is imperative. If reduction is successful retention is easy. If reduction after more than one attempt fails, and it is particularly likely to do so if not attempted early, is open operation and plating the only proper and the necessary treatment? I think not. From my limited experience with nail extension, I think it should first be given a trial. It is far safer. The weight acts directly on the bone and not through the skin and soft parts and it may be increased to thirty-five or forty pounds, or even sixty or more if necessary. This will reduce almost any shortening unless too much atrophy has occurred in late cases, and it often produces lengthening. It is the ideal method of reducing the shortening, previous to the use of a plate, in late cases.

I do not deny that a plate sometimes fulfils the indications better than anything else, but I claim that the use of the safer nail extension will materially reduce the number of cases that require a plate. In every simple fracture of the femur the use of the X-ray, reduction of the displacement under anæsthesia if necessary, traction by a suitable method, of which the Steinmann nail method is the most effective, control by a second X-ray should all be tried before resorting to the use of a Lane plate. The latter should only be used when other methods have been tried and failed, never as a primary procedure. When we

come to the case of old or neglected fractures, with shortening and displacement, or to cases of delayed union or non-union the case is different. Then the Lane plate is often our best resource. But here, too, efficient traction by the use of the Steinmann nail may be sufficient of itself, as I have found during the past winter, or it is the best preparatory treatment to reduce the shortening prior to the application of the plate. A bone plate should never be used in simple fractures unless ideal aseptic conditions prevail.

Fractures of the shaft of the bones of the forearm often furnish special indications for operative treatment, especially if both bones are fractured. The proper use of the hand depends upon the free rotation of the bones of the forearm. This requires the fairly accurate adjustment of the fractured shafts and especially the avoidance of cross union between the two bones and their locking by excessive callus from one or both fractures. It is often difficult, and in the upper and muscular third of the forearm impossible, to reduce the deformity so as to avoid these dangers. Open operation may, therefore, be more often required in the forearm to obtain good function than in any part of the extremities. Plates are not always necessary, especially in cases of more or less serrated transverse fractures, for the unevenness of the ends of the bones hold them firmly together when once adjusted. In other cases it is better to apply a plate to one or both bones. No operation is needed if the bones can be so adjusted under an anæsthetic that the interosseous space is moderately normal and the ends in apposition for at least half their diameter.

In the large number of cases of fracture of one, or especially of both bones of the leg that are treated every year at Bellevue Hospital, we see a few in which, even under anæsthesia, the fragments of the tibia either cannot be properly adjusted, or cannot be held in proper position, even when adjusted by an open operation. Some of these may go on to a firm union with faulty position though with a straight leg. I have an example of this in the wards at present, in an old man with calcareous arteries, beautifully shown by the X-ray plate, who refused operation. But many require operative treatment to avoid mal-union, delayed union or non-union.

I like to avoid metal plates on a bone covered only by skin. They are more apt to become infected or, subsequently, to require removal. In these cases, where there is less strain on the plate and less tendency to shortening, I prefer to hold the fragments together by a bone splint or dowel, taken from the crest of the same or the opposite tibia. This is sunk in a V-shaped groove in the two fragments, after reduction, and fastened by chromic gut passed through two drill holes, one above and the other below the fracture. This does not act as a foreign body, does not delay union and holds the fragments securely in most cases. Occasionally a metal plate seems to be the only thing that will hold the fragments in position.

In some displaced or rotated fragments of the internal malleolus and adjacent tibia I have used a nail to hold them in position with an excellent result. The nail is removed in three or four weeks.

During the last three or four years I have also had three cases of fracture of the internal condyle of the humerus, in which the fragment was rotated in one or more axes through a varying radius, in one case 180 degrees, and could not be reduced. Open reduction was necessary, but one or two periosteal sutures held the fragment when once reduced. No plate was necessary.

In many fractures of the head of the radius open operation is necessary to remove a loose fragment that interferes with the movements of the elbow or rotation of the forearm. I have had a number of such cases and the results are very satisfactory as a rule.

Fractures of the surgical or anatomical neck of the humerus occasionally call for open operation.

The question of open operation for fractures of the spine is one as to which opinions vary widely. But as this is not a question of the fracture proper, but rather of the injury to the cord, I will not consider it here.

By limiting myself to the above fractures I do not mean to imply that operative treatment is not occasionally indicated in other fractures, but merely that these are the more common or important to be considered in connection with conservative operative treatment. In many other fractures operation is at times indicated, when other measures fail, but each case must be judged by itself.

Operative Considerations. The operative treatment of fractures is undertaken to better fulfil two fundamental requirements of fractures, reduction and retention. Many different methods are in use and still more have been proposed.

Reduction is *a* or *the* most important feature and is common to all methods of open treatment. In most cases reduction is made after an open exposure of the fracture, which must be free and yet avoid injury to any motor nerves or large vessels and, as far as possible, to muscles. The strictest asepsis should prevail in this exposure. If there is overriding this is to be overcome by traction, by Lambotte's or other tractors, by Gerster's clamp, by levers or by angulating the fragments with immediate replacement. In addition oblique fractures may require some rotation of the limb to obtain an exact reduction.

In the lower extremity direct traction on the bone through a Steinmann nail or pin passed through the lower end of the femur, the upper end of the tibia or the os calcis, meets most, if not all, of the indications of reduction and retention without the disadvantages of bone plates. It requires only local anæsthesia or, at most, only a short nitrous oxide anæsthesia. Traction, gradually increased up to forty or even sixty pounds,

has been used, but it is rarely necessary to use over thirty-five or forty pounds. In recent fractures this corrects or overcorrects all overriding in a short time, and rotation or angular displacement can be overcome by traction on one or the other end of the nail. After the first two or three days of heavy weights there is little or no pain.

Like all methods of treatment it has objections, especially when not properly used. Death has resulted in one case where the nail was applied too high up in the femur and passed through the fractured zone, converting it into a compound fracture. The nail should be removed by the end of the fourth week or not later than the end of the fifth week, and then cases of bone fistula or abscess would probably not occur. The method avoids converting a simple into a compound fracture and no foreign body is left in, after the nail is withdrawn. In older cases, with shortening, "nail extension" may be used satisfactorily for reduction and retention by itself or as the best way of overcoming the shortening so as to allow reduction by an open operation. The "nail extension" method may seem to some scarcely worthy of the term "operative treatment," but it must be carried out with strict asepsis. It requires only a minute incision on either side, after drawing the skin slightly upwards.

Retention. There is now a large armamentarium for the operative treatment of fractures by plates, including Lane's and Lambotte's instruments, and the various modifications of bone clamps by Bartlett, Gerster, Reder and many others. The chief objection to the use of metal plates is (1) that it makes a simple into a compound fracture for the time being, as do almost all operative methods of treatment; and (2) that it leaves a foreign body in the tissues. Hence extreme care and the most painstaking asepsis must be employed both as to the plate and the wound. This is the reason for many of the special instruments which are devised to avoid the introduction of the hands into the wound. Before operating it is also better to wait eight or ten days after the injury until the patient's tissues have recovered their normal resistance. In spite of great care infection has not infrequently occurred. I have only had occasional late mild infection, ten to fourteen days after operation, not interfering with bony union but requiring the ultimate removal of the plate. But I have known of more than one fatal infection and several are reported in the literature. Metal plates are better borne, with less danger of causing trouble, when applied to bones like the femur, which are well covered by muscles, rather than to bones covered only by skin, like the tibia. Other objections to metal plates are that they cause osteoporosis of the bone and delay in callous formation and ossification. Hence delayed or non-union has not infrequently resulted.

These objections and that of leaving a foreign body in the tissues is met by the use of bone plates, usually taken from the crest of the tibia. I have used these with excellent results in some fractures of the tibia, cutting a V-shaped groove on the inner surface with a Hartley saw. Into this a plate four inches or so long, triangular on sections cut from the crest of the same or the opposite tibia, is fastened by chromic gut passed through drill holes above and below the fracture. This seems to stimulate rather than retard repair, and hence is useful in delayed union. It is especially suited for use in the tibia where there is less strain on the connecting plate and little tendency to shortening. It is not so often suitable for the femur. Here in recent fractures or in old mal- or ununited fractures, where there is shortening of the soft parts, the steel plate is often the only thing that will resist the lateral and longitudinal strain.

Some have used an intramedullary dowel of bone, after reaming out the medullary cavity, but it requires more exposure of the bone at the seat of fracture, inflicts more trauma and is more difficult to apply than Elsberg's cylindrical alumium splints. The latter have proved serviceable in certain cases, but I have had no experience with them.

In some cases I have found that a nail or a screw meets the indications more simply and more effectively than a plate or anything else. Thus in a case of fracture of the external condyle of the humerus, extending into the joint below and some distance up the shaft above, the fragment could not be reduced without open operation and could be best and most simply held in place by a single screw. An excellent result followed.

There are several other methods of fixation in less common use at present which I will only mention, *i. e.*, bone ligatures or hooping, the old fashioned bone sutures, bone pegs, bone ferrules and staples.

An external immobilizing apparatus of plaster of Paris is usually required in addition to the internal retentive devices.

When a serrated transverse fracture is accurately reduced no internal holding device is needed, only the support of a plaster of Paris splint.

For guiding rules in the conservative operative treatment of fractures I would say:

1. In recent simple fractures do not operate unnecessarily only after non-operative treatment has been tried and failed, as no operative treatment is exempt from danger.

2. Be most careful as to asepsis.

3. Use the simplest thing that meets the indications and avoid leaving large foreign bodies in the tissues, when possible.

4. Judge each case by itself.

5. In properly selected cases the operative treatment of fractures greatly improves the results.

NEED OF MORE ACCURATE KNOWLEDGE IN THE DIAGNOSIS OF MASTOIDITIS BY THE GENERAL PRACTITIONER.*

By JAMES FRANCIS McCAW, M.D.,
WATERTOWN, N. Y.

THE subject of this paper has been suggested to the writer by the cases seen from time to time in which the diagnosis and treatment have been matters of indifference and the significance of the symptoms entirely overlooked, until the pathological process has extended beyond the confines of the mastoid and invaded some part of the intracranial contents, the patient's life thus jeopardized by delay, and when they do come to operation, necessitating a very much extensive and prolonged procedure. To illustrate what is meant we will report one case as a type of many: Patient male, forty-seven years of age, was seen in January, 1913, with the following history: Had an attack of la grippe four weeks before, followed by severe pain in right ear three days later and the appearance of a purulent discharge in twenty-four hours, with only slight relief of the pain, which now involved the mastoid area and supra-tympanic region. Tenderness to pressure over same areas was complained of and the temperature ranging from 99 to 101 degrees F. From this time on until we saw him three weeks later he continued to have profuse, creamy, purulent discharge, increasing tenderness and the appearance of redness and œdema over the mastoid with radiating pains over the corresponding side of head. When seen the patient was extremely prostrated, anæmic and had lost much flesh. He was operated upon immediately and the entire mastoid process found disintegrated, the lateral sinus thrombosed with a septic clot, and although the ligation of the internal jugular was done, the sinus opened and the clot removed, this patient died with all the symptoms of cerebral abscess. I think that I may venture the statement that this is a type of case not infrequently seen by men who draw their cases largely from the rural districts. It may be difficult for my conferees in the larger centers to realize that such seeming negligence or lack of knowledge in the diagnosis of mastoiditis, where all the classical symptoms are present, almost from the inception of the middle-ear suppuration, could exist, but the fact remains that in spite of all that has been written on this subject and the widespread discussion of the same there are still physicians who fail to appreciate the importance of aural suppuration in relation to mastoiditis, relying upon opiates to relieve their patient's suffering and giving the virulent infective pathological process all the time needed to progress unhindered with its destruction until the case is far beyond the border line of safety, the intracranial contents invaded and the patient's chances of relief from surgical interference much lessened. In view of these facts it would seem that a paper on this subject again calling the attention of some of our general practitioners to the diagnostic points in acute mastoiditis is timely; therefore this paper is presented in the hope that some good may result. The writer would not have it understood that this is in any wise a general criticism, for the majority of my colleagues understand and fully appreciate the importance of this condition and quickly recognize the clinical picture with its physical signs and lose no time in giving their patients the benefit of appropriate treatment. In our opinion one reason for this long delay by some men in the diagnosis is that they expect to have redness, œdema and swelling over the mastoid in all cases of mastoiditis, failing to realize that an infective process may go on within a bone cavity without giving this external evidence. When these signs do appear during the progress of a mastoiditis in an adult we know that they are the late symptoms and due usually to wide destruction of bone tissue. To wait for such evidence is to endanger the welfare of the patient and many times put him beyond surgical relief. Many physicians, we are sorry to say, regard middle-ear suppuration much too lightly and frequently consider it a mere inconvenience, instead of giving it the proper consideration as a serious condition from which grave complications may arise at any time.

It must be admitted that there are many cases of aural suppuration that recover without apparent inconvenience, except from the presence of the discharge. On the other hand, we must not lose sight of the fact that any case may be a virulent one, impairing the nutrition of the delicate middle-ear structures with an extension to the mastoid antrum and cells, and in neglected cases a serious invasion of the intracranial contents may occur. The family physician being usually the first consulted, the welfare of his patient depends upon his ability to recognize at least the classical symptoms of mastoiditis and appreciate the disastrous results which may follow when not dealt with promptly. He should clearly understand that temporizing methods of treatment in this condition is not only worthless, but actually harmful and the sooner physicians accept the fact that all middle-ear suppuration is an infective process capable of rapid extension and destruction of tissue and give them more careful investigation and study, keeping in mind the clinical symptoms and signs of mastoiditis, the sooner will they be rewarded by finding it not extremely difficult to recognize these cases early, thus adding to their own satisfaction and save many cases from further and dangerous complications. The writer is well aware that there are cases of mastoiditis which baffle the diagnostic ability of our best clinicians, but these are fortunately the exception and have no bearing upon the points brought out in this short paper. My plea here is that every practicing physician should have the

* Read at the Annual Meeting of the Medical Society of the State of New York, at New York, April 30, 1914.

knowledge and diagnostic skill to recognize a typical case of acute mastoiditis, following middle-ear suppuration and be able to recognize it sufficiently early that the patient's life may not be jeopardized by long delay, giving the many factors in each case due consideration to insure timely operation.

What are some of the signs and symptoms which the general practitioner should look for to aid him in suspecting the invasion of the mastoid?

Tenderness.—This sign is elicited by palpation over the mastoid antrum, which lies just behind the superior attachment of the auricle, over the tip or at a point at the posterior border of the mastoid corresponding to the emissary vein. Nearly all cases of acute suppuration of the middle ear will have at its inception a slight amount of tenderness to pressure at some point of the mastoid; this is especially noticeable in children, but as free drainage is established from the middle ear it usually subsides in uncomplicated cases of otitis media.

Persistent tenderness over the mastoid, either over the antrum or tip, is a most significant symptom of mastoid involvement and should always be regarded with suspicion in spite of free drainage from the middle ear. If tenderness has been present early and subsides and reappears again in two to five days it is in the writer's opinion the most reliable symptom in the diagnosis. To determine this tenderness the physician must use judgment, especially in neurotic patients and children, otherwise he may be misled; but a little care in distracting their attention is all that is necessary.

Temperature.—This is one of the most deceptive symptoms in mastoiditis of adults. It has been the writer's experience that a lack of temperature in adults is not unusual, and therefore is of little value as a dependable symptom in the diagnosis of mastoid invasion. When there is a rise or temperature from 100° to 101° F., which remains constant, with the presence of slight tenderness over the mastoid, even in early cases of acute middle-ear suppuration, provided drainage is free, it is confirmatory evidence of mastoid involvement, the significance of which should be heeded and the mastoid opened and drained. Too much reliance then should not be placed upon the absence of temperature in cases of middle-ear suppuration with persistent and increasing tenderness over the mastoid. It is not unusual in operating for mastoiditis to find widespread destruction of tissue, the cavity filled with pus, the lateral sinus exposed and still the patient have practically a normal temperature. A persistent rise of temperature is much more apt to occur in children, where it is the rule rather than the exception, but even here too much reliance must not be placed upon the lack of high elevation of temperature when other signs of mastoid invasion are present.

Redness, swelling and œdema over the mastoid is much more frequent in childhood than in adult life and is the result usually of a subperiosteal infection through the cribiform plate of bone corresponding to the mastoid antrum or necrosis of the external table, forming a subperiosteal mastoid abscess. Such external evidence appearing early in an adult, following pain about the ear, is quite apt to mean a furuncle of the posterior canal wall; but appearing late in the course of a middle-ear trouble is significant of widespread bone destruction, therefore a late sign, whereas in children it may appear very early in the course of the disease.

Pain radiating from the mastoid and extending over the corresponding side of the head is most significant and usually means mastoid involvement. The signs and symptoms mentioned as indicating mastoiditis presupposes, of course, the presence of a middle-ear suppuration or a tympano-mastoiditis, which is almost invariably the case, primary mastoiditis being very rare.

The writer will obviously not go into the treatment farther than to say it is very generally agreed that suppurative mastoiditis is a dangerous condition; therefore, if we feel satisfied that such exists it is our duty to immediately open the mastoid cells and not try to palliate or abort an already dangerous condition. The family physician by keeping clearly before his mind the points in diagnosis and the dangerous nature of this disease will appreciate the necessity of timely operative interference.

In conclusion, we would offer this advice: That all cases of acute middle-ear suppuration should be considered as a virulent infective process until it is proved otherwise; and that free and early incision of the drum membrane should be done to establish thorough drainage. Overflow drainage through a small perforation or puncture will not suffice.

Do not place too much reliance upon the abscence of temperature elevation in adults, or wait for the appearance of redness, œdema or swelling, for in doing so valuable time is lost and the patient's life endangered.

The physical sign upon which the general practitioner can place the greatest reliance in the diagnosis is tenderness upon palpation of the mastoid, for in the presence of a well-drained suppurative otitis media it can mean only mastoid involvement, and an invasion of the mastoid by a suppurative process is dangerous; therefore, when such signs and symptoms appear do not waste time by quieting the patient's suffering with opiates and allowing the process to extend, but an early exenteration of the mastoid should be done to safeguard the patient's welfare.

Discussion.

Dr. Percy Fridenberg, New York City: The subject so well considered in this paper is an important one. It reminds us that the physician of today is not content with diagnosis and treat-

ment, nor even with hygiene and prevention. He now recognizes it as his duty to teach not only the student and the general practitioner, but the patient and community. This missionary work is one of the most important features of present day medicine. Our graduates must have sufficient training in the specialties, particularly otology and ophthalmology, to recognize serious or dangerous conditions and know when to keep their hands off. Dr. Cott has referred to the importance of keeping full and accurate histories and charts. A full and conscientious examination, I would add, is perhaps the most important and oftenest neglected aid to a correct diagnosis. We must insist on the broadening of medical education, and this may mean lengthening the curriculum. Let us impress this on our publicists and legislators and try to show them the criminal folly of legalizing the practice of medicine by those who under some specious trade label take a short cut to a degree. It rests with the medical profession to raise the standard of public opinion, and particularly of legislative opinion, as to the requirements in theoretical and practical training of the candidate for a license to practice.

DR. GEORGE F. COTT, Buffalo: Many cases of mastoiditis are overworked by the physician and often the symptoms are so mild that the amount of destruction is altogether out of proportion to the symptoms. Recently I saw a girl, twenty-one years of age, who had a profuse discharge from one ear for nine weeks. Temperature usually normal, partook of three meals a day, slept good every night and had very little pain on pressure over the mastoid. I found a totally excavated mastoid with epidural abscess, the dura being exposed for three-quarters by one-quarter of an inch.

In one hundred radical operations eighteen had epidural abscess, at least a dozen of which were not diagnosed. In one case the patient was sitting in a chair, temperature 140°, but not feeling bad enough to be in bed. Had chronic suppuration for many years, lately intermittent discharge. I suspected epidural abscess, advised operation, but patient refused; later in the day he consented and I found an abscess under the dura, a thrombus that seemed to extend from the bulb to near the torcular herophyli; the central portion had broken down and contained pus. All was cleared out and the patient made a good recovery. It is of the utmost importance that persistent discharge, acute or chronic, which does not yield to treatment should be referred to the otologist. I have operated several times out of town without a clear history of the case and learned afterwards that the patients died. These cases ought to have been further explored, but for want of a better history I was not justified in doing more than a radical operation. It is all-important that cases should be more thoroughly examined by the attending physician and the danger signs recognized early before it is too late.

DR. S. J. KOPETZKY, New York City: I would not have so timely a paper as that just presented go without saying a word on the topic. What I regret is the fact that this paper does not reach the general men who see the cases described by the reader. Nor must we suppose that it is only in country practice that such failures to diagnose and appreciate the condition of acute mastoiditis happen. What I particularly want to state is that many of those in the practice of pediatrics could, with much profit to themselves and their patients, have listened to this paper. There still are many who think that a mastoid is operable when a subperiosteal abscess is present, otherwise not. I think that as wide a publicity as possible should be given this paper.

DR. LINN EMERSON, Orange, N. J.: My associate, Dr. Tymeson, and I both did general practice in the country, and he recently remarked on the rarity of mastoiditis in country practice.

I contend that it is not as rare as would appear, but that many cases of mastoiditis are treated as typhoid fever, brain fever, meningitis and various other infections, and, furthermore, that many of them die with the condition undiagnosed.

THE NEGLECT OF LABORATORY AIDS TO DIAGNOSIS.*

By DAVID WILSON, M.D.,
AMSTERDAM, N. Y.

WHILE I was considering how I should reply to an invitation to read a paper at this meeting, there were two occurrences which prompted me to accept the invitation and suggested the title for my paper. I saw a uterus which had been removed from a woman, twenty-nine years old, because of a clinical diagnosis of cancer, which showed upon section nothing more than an erosion of the cervix, no pathological examination having been made previous to the operation. An autopsy on a man who had been treated at a tuberculosis sanitarium and who was supposed to have died of tuberculosis showed no tuberculosis, but chronic congestion, due to aortic regurgitation.

The younger members of the profession are sometimes criticised by the older contributors to the medical magazines for placing too much reliance on laboratory methods to the neglect of physical diagnosis. It should be insisted that the use of laboratory aids to diagnosis will not excuse any one for being less careful in physical examination. Some of the best diagnosticians have spoken slightingly of laboratory work. No doubt they, by their superior skill, may make diagnoses in some cases without laboratory aids

* Read at the Annual Meeting of the Fourth District Branch of the Medical Society of the State of New York, at Glens Falls, October 8, 1912.

but those of us less skillful cannot do without such aid. Laboratory tests and physical examination should go hand in hand in all obscure cases. The man who decries laboratory work is making about as big a mistake as the man who is slipshod in physical examination because of his confidence in laboratory work. Since the best diagnosticians make mistakes in diagnosis, nobody can afford to neglect any method, either of physical examination or of the laboratory, which will help to make a diagnosis more certain.

Laboratory work is most valuable to the physician who does his own laboratory work, because he can interpret the results much better when he has seen them himself. The laboratory man cannot always interpret the results well without knowing the clinical history. If the physician is too busy to do his own laboratory work he should know enough about it at least to understand what to expect from the laboratory and how to interpret the laboratory reports. Many times laboratory workers are asked to do the impossible by men who ought to know what is possible. Most of the fault finding with laboratory work is from those who know little or nothing about it. Judgment based upon knowledge is necessary to determine when laboratory tests are indicated. In emergencies do not delay measures to relieve suffering or prolong life while waiting for laboratory reports.

Other instances in which wrong diagnoses were made as the result of neglect of laboratory aid were cases of pyelitis treated for malaria and sepsis treated for typhoid fever; but enough has already been said, I think, to prove that there is a neglect of laboratory work. Let us consider some of the simplest and most useful laboratory tests which many physicians are neglecting, and then consider the reasons for such neglect.

The amount of laboratory work which a majority of physicians perform may be summed up as the examination of urine for albumin and sugar. In urine examination they ought to pay more attention to the amount passed, to the specific gravity and to the miscroscopic examination of the urine. The presence of bile and a rough estimate of the amount of indican are easily determined. Much difference of opinion has existed as to the value of urea determination, and personally I feel that it can be neglected better than many other parts of laboratory work, although it shows whether the amount of urea is proportional to the specific gravity. I still believe in the diazo reaction as an aid in the diagnosis of typhoid fever, although I have found it in other diseases. As a rule there is no difficulty in diagnosing typhoid from other diseases in which the diazo reaction may be found, except in some cases of tuberculosis. In examining for the diazo reaction be sure the urine is fresh. I have found it present in urines just avoided and been unable to find it in the same urines after standing a few hours or over night. No one will find fault with the general practitioner for neglecting the determination of the amount of chlorides, of the total nitrogen or of the ammonia nitrogen. These tests are of more prognostic than diagnostic value. The tests of Roundtree and Gerachty are probably the best renal functional tests, but they are hardly to be considered laboratory tests.

Most of the important facts to be derived from feces examination can be learned in a few minutes and without complicated apparatus. The chief reason for its neglect is the disgust which the thought of it arouses. If the feces are sent to the laboratory in a tightly sealed fruit can and a little 10 per cent formaldehyde solution is mixed with the stool before the examination there is practically no disagreeable odor. The presence of the formaldehyde does not interfere with any of the tests except the search for amebæ coli, which are best recognized alive. The presence of undigested muscle fibers, of starch or fat, fatty acids and soaps is easily determined. The benzidine test for blood is simply and quickly performed. Since so many people are now traveling in tropical and sub-tropical countries the examination of feces for the ova of parasites is becoming more important.

In gastric analysis usually more is to be learned from the examination of fasting contents than from the results of a test meal, although both should be used. Few physicians employ gastric analysis, but I have found it valuable in a number of cases. It should be used in cases which fail to find relief by the usual remedies and whenever dilatation or cancer is suspected. After removal of the test meal and while the tube is still in the stomach the capacity and position of the stomach can be determined, first by filling it with water and then by air and percussing the outlines of the stomach.

While something might be said in regard to the examination of suptum for elastic tissue, influenza bacilli and so forth, we shall only call attention to the neglect of the profession in regard to the examination for tubercle bacilli. It may be admitted that tubercle bacilli may not be found in 50 to 60 per cent of the cases in which a clinical diagnosis of pulmonary tuberculosis is justifiable, but a sputum examination should be made in every case suspected of being tuberculous. Boards of health should require a sputum examination in every case reported as tuberculosis. Very few diagnosticians can be absolutely positive of their diagnosis without finding the tubercle bacilli, since they may mistake an old abscess of the lung, a chronic bronchitis, a neoplasm or even chronic congestion for tuberculosis.

Boards of health everywhere perform sputum examinations, examinations of the throat cultures and Widal tests for typhoid. There is, therefore, less excuse for the neglect of these tests than of others. More throat cultures should be made. Cases of diphtheria pass as tonsillitis, and some families are quarantined for diphtheria which would not be quarantined long if throat cultures

were made. Better provision should be made for the examination of throat cultures in villages and small towns. This can be supplied by the establishment of county laboratories.

The Wassermann test is about the only important laboratory test which the general practitioner and the small laboratory cannot perform. This test is so complicated and requires so much time in the preparation and titrating of reagents that it can be performed profitably and satisfactorily only by the larger laboratories.

Blood counts are most often valuable for the recognition of suppurative inflammatory processes and for the diagnosis of typhoid fever. Many cases of suppurative inflammation, especially pyelitis, are treated as malaria. In this district the rule never to call a case malaria without finding the parasite should be strictly heeded. Blood examinations should also be made to distinguish between leukemias and Hodgkin's disease and for the recognition of primary and secondary anemias. As blood examinations have become more common the diagnosis of pernicious anemia has become more frequent, and no doubt many cases still go unrecognized. Almost any physician can soon become able to make a careful blood examination in half an hour and a useful one in ten minutes. Blood cultures are not made nearly as frequently as they should be.

During the past few years the examination of cerebro-spinal fluid has grown in importance. The amount of albumin in the fluid, its coagulability, the number and kind of cells present and the presence of bacteria prove the existence of meningitis and the type. The cytological examination of cerebro-spinal fluid is also important in syphilitic lesions of the central nervous system, as is also Noguche's butyric acid test.

Even the gonococcus is neglected. Perhaps it is not necessary for a diagnosis to prove its presence in every case. How seldom physicians attempt to prove its absence before they allow a patient to consider himself cured!

The surgeon, if not the general practitioner, might be expected to know how to preserve specimens for histological examination. Unless otherwise directed by your laboratory, place specimens in 10 per cent formalin solution as soon as possible after removal. How often pathologists are asked to make diagnoses on specimens which have dried in the air for a day!

Why is laboratory work neglected by so many physicians? They don't realize that it is worth the effort necessary to overcome the difficulties in its way. Some may think that the physicians who are neglecting it are the men who graduated twenty or thirty years ago, but many men who graduated only five or ten years ago are neglecting it. The difficulties are the time required, the expense and the natural dislike of laboratory work expressed by many physicians. The physicians with large practices do not have time for laboratory work, but as a rule they are not the ones who are neglecting it. They have the work performed for them. Men with small practices ought to do as much laboratory work themselves as possible. Some patients cannot afford to pay the regular prices for laboratory work. Often the satisfaction of making a diagnosis in an obscure case will be pay enough.

In conclusion, let me urge you not to neglect laboratory work, although I realize that the physicians who need this advice most are the ones who don't attend medical meetings. Laboratory work will not always help to make a diagnosis. It may sometimes make a diagnosis more obscure by presenting unusual phenomena, but it will nearly always add interest to the practice of medicine. You should use some of the leisure time the automobile has given you in your own laboratory work.

TUBERCULIN AS A PROPHYLACTIC.

By HORACE GREELEY, M.D.,
BROOKLYN, N. Y.

MANY and widespread are the efforts to control and eradicate tuberculosis, and although general hygiene and care of the child are not forgotten, still, partly because in the crush of great populations, such efforts cannot be expected to radically change habits of life and the demands of poverty and labor, but little seems to have been gained in the line of special immunity to this disease among the population at large. Of course, as we know that all infectious diseases arise as the result of the teetering of the relative powers mustered by the microbic agent and by the body in favor of the former, restriction of the numbers of tubercle bacilli spread about by the diseased may certainly reduce the number reaching the defensive breastworks of the well, and anything that favors the general health can be calculated to favor the mechanism of special immunity. It is well known that certain peoples differ markedly in susceptibility; that, for instance, the Jews have but a mortality from the disease of 67 per 100,000, while the Irish have one-seventh times as great, and that the cause of the first is most certainly racial immunity developed in the last 3,000 to 5,000 years of urban residence during which they have been exposed to the infection, while until recently, not distant more than one-tenth of the Jewish period, the Irish have been protected from such contact by rural isolation. Considering these facts as proving the possibility of developing special racial immunity to the disease by mere exposure to it, we are bound to conclude that apart from any human effort the disease tends to diminish by the operation of biologic laws, which are also known to affect all parasitic conditions. Naturally this generation is not content to patiently suffer that a tittle of immunity may be passed to the next, but may it not learn, as it has all it knows of science, from observation and interpretation of

common natural phenomena? The individual, beginning with the embryologist, passes through all the stages through which the race has passed —single-celled, multiple-celled, specialized-celled and special-specialized—in many multiplications; and even so he develops his individual immunity, first to the present infections of childhood, such as measles, pertussis and varicella, which from their ability to work havoc among the adults of present day not-previously-exposed races probably once so affected our ancestors, but which now, even with the child, are mild in their manifestations owing to inherited special powers of resistance, and later to such diseases as typhoid and tuberculosis.

It is agreed among students of tuberculosis that no one is infected at birth, but that almost 90 per cent develop within a few years enough disease to react specifically with tuberculin, the most delicate and certain test in the diagnosis of the malady. However, since but some 10 per cent die fully 80 per cent overcome the invading army, or at least hold it in check till some other infection, or eventuality lays both host and parasites where at least the latter cease from troubling and the former is at rest.

To-day the profession is well informed as to the workings of vaccine treatment, which, especially as regards typhoid, is actually becoming popular with the community at large, so that all evidently recognize the workings of specific immunity and its advantage when artificially induced in the prevention and in the treatment of disease. It is known that immunity to typhoid after appropriate vaccination lasts at least a year or two, probably in most cases much longer; and, although the proceeding in smallpox prophylaxis is somewhat different, the basic principal being the same, we may add this, as assuring complete protection for at least as long, to our chain of evidence suggestive of possibilities in tuberculosis. I well recognize that the shortcomings of tuberculin in the treatment of the well-developed disease has created prejudice against this agent. But I imagine that if the use of killed typhoid organisms or of vaccinia virus had been introduced through use in the treatment of actual cases of typhoid and of variola that something worse would have been thought of these agents, for if there be a basic principle to vaccine therapy it is that to inject a specific vaccine into a body suffering an acute infection or into one in which the parasites or their products are generalized is to work actual harm thereto.

Another difficulty in the way of the use of tuberculin as a prophylactic would be the probable necessity of at least a yearly dosage to insure continuation of the increased resistance, but this is uncertain, although experience from experimental use of it makes one think it. However, we must recollect how many infectious diseases, when once the body is free from their agent, never return, even after many years and under special exposure, and may reasonably conclude from this that but a very slight, the faintest possible, perhaps, persistence of the acquired immunity agents is all sufficient to prevent a reinfection. To keep out, and to drive out, are very different propositions as applied to microbial infections, as a little reflection will show. In the first instance, we usually have to deal with one or two, or at most very few, individual organisms thrown on or in our bodies under conditions and amid surroundings which are certainly not the most favorable for their survival, while in the second we have to deal with well-established myriads actually growing under at least suitable conditions. Under such circumstances surely less than an ounce of prevention is worth more than a pound of cure!

It is well known that the children of tuberculous parents are more than averagely susceptible to the malady, probably both from inheritance of part of the deficient resistance that made the parent prone and from a subjection to a bombardment with more than the average number of tubercle bacilli to which the generality is exposed. Both from being most subject and most exposed it is with these that prophylactic efforts should be greatest, and from a general insight into the principles governing infectious disease and special experience in tuberculin administration, I am convinced that if such children were rationally treated with tuberculin, from as early an age as possible till adolescence, that the incidence of the great white plague in the next generation would be remarkably reduced. I do not mean that a child already atrophic from incipient tuberculosis, sometimes even called "malnutrition," can be prevented from contracting what he already has, but I insist that any such treatment begun before infection will absolutely protect.

While I can formulate no hard and fast rules based on experience, as hundreds of cases observed for tens of years would have to be considered for real proof, I will suggest a plan which I have been carrying out with three children, aged seven, ten and thirteen, during the past five years, and which, at least, has worked no injury, but has, so far as laboratory tests are concerned, kept their opsonic index constantly above normal.

1st dose, irrespective of age, 1/100 mg. Bacillen emulsion.
2d dose, one month later, 2/100 mg. Bacillen emulsion.
3d dose, one month later, 4/100 mg. Bacillen emulsion.
4th dose, two months later, 1/10 mg. Bacillen emulsion.
5th dose, two months later, 2/10 mg. Bacillen emulsion.
6th dose, three months later, ½ mg. Bacillen emulsion.
7th dose, three months later, 1 mg. Bacillen emulsion.

Every three months after the first year the one milligram dose is repeated. There will be no constitutional reaction, and locally only a slight pin-head point of redness with the slightest swelling, after such injections, provided the child be not infected in advance. Should this be the case it will be shown by a typical reaction to the first one or two doses.

I hope that those in the position to offer such preventive treatment to the susceptible will consider this suggestion on its merits.

Article by Maragliano, Berlin Klin. Wochens., March 16, 1914.

VACCINE THERAPY, THEORY AND APPLICATION.*

By WILLIAM C. THRO, M.D.,
NEW YORK CITY.

THE introduction into the body of dead or attenuated micro-organisms, or their products, as a prophylactic or curative measure was practiced before the publication of Wright's studies on opsonins and vaccines. Vaccination against smallpox, was put into practice by Jenner, which was a form of vaccine therapy, although in his time its rationale was little understood. The great Pasteur, in his experiments in the production of immunity against anthrax and chicken cholera by the injection of bacterial products, did a great deal to advance the knowledge of this means of treatment. Nevertheless, we are indebted to the genius of Wright for the placing of this valuable aid in the prevention and treatment of infections on a practical basis, his work giving the great impetus to the use of vaccines as a means of producing active immunity.

Before proceeding any further it will be well to state just what a vaccine is. *A vaccine is a poison.* This is to be emphasized, not to frighten those who contemplate using them, but to give warning that these substances are not to be used in an indiscriminant manner. In other words, a vaccine consists of normal salt solution containing in suspension the dead bodies of the bacteria in the form of endotoxin, or of a sensitizing protein. Certain bacteria, like B. typhosus and B. tuberculosis, do not excrete an exotoxin, but when they are destroyed in the body the endotoxin is freed. This endotoxin is a complicated proteid.

With other bacteria, of which the diphtheria and tetanus bacteria are types, a soluble substance, called the soluble toxin or exotoxin, is constantly being given off during the life of the organism. When these bacteria are grown in media the toxin is excreted and by filtering out the bodies of the bacteria we have this poison remaining in the filtrate. It is this soluble toxin which is used in injecting horses in which a great excess of immune bodies, called antitoxines, are produced. The antitoxin is present in the horse serum, but at the present time very little antitoxin, as used in the treatment of diphtheria, is composed of the entire serum, because it has been found that the globulins in the serum contain the immune substance, and they are dissolved in normal salt solution, after which they are ready for injection.

To return to the endotoxin, this is the portion of the bacterial body in which we are interested since it is probably due to the curative property of vaccines. The endotoxin is a poison and if any one wishes to learn this from practical experience, take a freshly isolated typhoid culture, make a vaccine, kill the bacteria by heat and inject from three to five hundred millions under the skin. In about three hours the following symptoms will appear: headache, malaise, fever, aching of the muscles and general tenderness of the lymphatic glands. The temperature may rise to even 104 degrees F. At the site of injection there will be all the signs of inflammation; redness, pain and local heat. It is part of my purpose to emphasize the fact that every time a vaccine is injected there is liberated a poison or endotoxin in the body. Bacillus emulsion, the form of tuberculin generally used in the treatment of tuberculosis, is really a vaccine.

Not all the vaccines are so poisonous as the freshly isolated typhoid bacillus vaccine. For example, the strain of typhoid used in the U. S. Army has been cultivated on artificial media for fourteen years and has lost, as we say, a large amount of its virulence. Strains of the same species differ in virulence and also in their power to produce immunity. Also different species differ in virulence. Some streptococci, notably the long chain, hemolysing type, are very virulent, while streptococcus viridans which is found in subacute endocarditis is not very virulent and large doses of it may be given. In general, larger doses of staphlococci than of streptococci may be given.

We hear of the terms autogenous and stock vaccines. By autogenous is meant a vaccine made from bacteria isolated from the patient to be treated. In general they are the most efficacious vaccines. By a stock is meant a vaccine made up from the organisms isolated from a patient other than the one treated. A polyvalent vaccine is one made from several strains of the same species. A mixed vaccine is one made from several species. As is known it is somewhat difficult to isolate the gonococcus, but it has been found that Torrey's strain "A" is very efficacious in the treatment of chronic gonorrhœal infections, especially rheumatism, this strain is used in the preparation of a stock vaccine. Torrey found that this strain produces a high degree of immunity in animals.

In regard to the theory of vaccine therapy it may be mentioned that one investigator has written that the practice is way ahead of the theory. The purpose of vaccination is to raise the immunity of the patient. Remember, then, when you start in to use vaccines in a case of acne that you must keep in mind this principle of immunization, that is, to keep up the injections even after the acne pustules cease forming until you have given at least twelve injections. It may be necessary, too, to give another series and even a third series of injections.

To enter into the theories of immunity is not my purpose, but it may be well to consider, briefly, a few points. The use of vaccines is a form of active immunization so-called; while the use of diphtheria antitoxin is a form of passive immunity. In active immunity we use vaccines to stimulate the centers of production of immune

* Read at the Annual Meeting of the Sixth District Branch of the Medical Society of the State of New York, at Ithaca, October 21, 1913.

bodies. The body has become used to the invading bacteria and tolerates them, making no attempt to overcome them. We inject a fresh lot of endotoxin in a normal part of the body with the result that the body makes fresh efforts to conquer the invaders. Through the efforts of energetic experimenters at least twelve of these immune bodies have been named.

Of all these, we will concern ourselves mainly with opsonins, of which you have probably heard, because of the emphasis laid on them by Wright. By opsonin we mean that substance that makes bacteria more susceptible of engulfment by the phagocytes. For a time we heard much of opsonins as a guide to the use of vaccine injections. But the process of finding the opsinic index was so long, complicated and not easily performed, except by one skilled in laboratory technique, that it has been abandoned, especially as it has been found that certain symptoms are as valuable as guides.

These symptoms may be divided into three groups: local, focal and general. Local, *i. e.*, those at the site of the injection are, marked redness, swelling and pain. Focal symptoms are, pain and swelling at the site of the lesion. General are, sudden rise in temperature, increase in the pulse rate, general muscular pains and painful swollen lymphatic glands. It is our custom to gradually increase the dosage until we get some or all these symptoms and then to keep the dosage at that point or to omit an injection.

We hear of the terms positive and negative phases, but here too there are so many theories that it would be confusing to enumerate them. We begin by giving the injection every four days in chronic infections and, after about twelve injections we lengthen the interval to a week and after four more injections we lengthen the period to ten days. In acute infections we inject the patients every day, but use small doses. In cases of surgical tuberculosis it is necessary to give several series of injections. I mention tuberculosis since, as I have stated, the form of tuberculin we use—Bacillus Emulsion—is really a vaccine.

Sahli states that all the forms of tuberculin are alike in their results and that they differ only in their chemical composition. I have heard that at Saranac they are using in pulmonary cases an autogenous old tuberculin, the form first used by Koch. The mistake with the first injections of this substance was that too large doses were given. I have not had any personal experience in the use of tuberculin in pulmonary cases, but have successfully treated cases of adenitis and of the genito-urinary tract. In using B. E. there is not the slightest danger of producing tuberculosis, since no living bacteria are present in it.

To take up some of the practical points in vaccine therapy. Perhaps the most important thing that may be said is this, learn first of all by cultural methods the type of the infecting organism. It is the failure to do this that has brought out more criticism of the indiscriminate use of vaccines than any other one thing. The example may be cited of the physician who was called to see a case of adenitis of the groin and the physician in charge of the case had injected a vaccine without previously ascertaining the nature of the infection. Now this is criminal vaccine therapy and is what is bringing it into ill repute. Not all boils are caused by staphylococcus aureus and to inject a shot-gun vaccine in such a case reminds one of medical practice of twenty-five years ago.

The tube of media used in throat cultures will grow nearly all the pathogenic bacteria. Cleanse the boil or acne pustule, open it with a sterile needle and smear the pus on the surface with a swab and send it to a bacteriologist for identification. If you cannot have the vaccine made, you at least know the type of bacteria, and you can then use the stock vaccine of any of the reputable drug firms.

In acne, it has been found that many times the acne bacillus is associated with the staphylococcus. This may be ascertained by making a gram stain of the pus. As the acne bacillus is of the anærobic type and very difficult to cultivate it is generally necessary to use a stock vaccine.

In arthritis we have three tests that enable us to ascertain the nature of the infection, *i. e.*, the Wassermann, and the gonococcus and streptococcus complement fixation tests elaborated by Dr. H. J. Schwartz and Dr. T. W. Hastings.

To make a vaccine; after isolating the type or types that seem to be the source of the trouble, a large quantity of the bacteria is grown on again and after adding sterile normal salt solution the bacteria are scraped off with a platinum loop and the mixture is poured into a bottle after which it is thoroughly shaken. There are a number of ways of counting the bacteria, but the one most generally used is that of Wright, in which equal amounts of the mixture and of fresh blood are mixed on a slide, and after staining, a number of fields are counted and the ratio between the red blood cells and the bacteria obtained. This bacterial mixture usually contains too many bacteria per cubic centimeter and in such a case it is necessary to dilute it with normal salt solution. The bacteria are now killed by heating them, generally for one hour at from 56 to 63 degrees centigrade. To be sure that all are dead a small amount of the mixture is placed on culture media which is incubated. Next one-fourth of one per cent of lysol or carbolic is added to prevent the growth of moulds.

The Dosage.—As has been stated bacteria differ in their virulence so that as large a dose cannot be given of one species as of another. Some mixtures are made up so that 1 c. c. = 1,000 millions, or one billion, as with staphylococci and typhoid, while others are made up so that 1 c. c.

= 100 or 500 millions, as with pneumococci, gonococci and streptococci.

In giving vaccines there is one rule to keep in mind, always start with a very small dose, because we do not know how a particular individual is going to react. I have seen some very severe reactions after the injection of as innocuous a bacillus as B. coli. By a small dose is meant 50 to 200 millions of the typhoid-colon group, and 10 to 25 million of the streptococcus group.

Intervals.—In chronic cases it has been found that good results follow when the injections are made every four days. Or inject twice a week—say Tuesdays and Fridays. After about twelve injections lengthen the period to seven days, and after six more injections lengthen the period to every ten days. Keep in mind the purpose of the injections, that is, the raising of the immunity of the patient. In acute infections, in which the use of vaccines is in an experimental stage, it is necessary to inject the vaccines every day for four or five days, then at intervals, but in smaller doses.

The Injection.—In giving the injection the skin of the upper arm is cleansed with alcohol or tincture of iodin and a portion of the skin is pinched between the thumb and forefinger and the needle thrust in at right angles to the skin. Care is taken that the vaccine is injected beneath the skin and not into the muscle.

The type of syringe that a great many prefer is the Sub Q Tuberculin syringe of Tiemann. This syringe is marked in 1/100ths of a c. c. as well as in minims and with it one can easily give 1/20th of a c. c. Of course it must be sterilized before using by boiling or by placing it in 5 per cent carbolic acid. Our vaccines are kept in glass bottles covered with rubber caps which we keep covered with pure lysol and the bottles are kept in the ice chest. The rubber cap enables you to draw out the proper dose easily without contaminating the contents of the bottle.

Types of Infection in which Vaccines may be Used.—It is generally admitted that acne and furunculosis are benefitted by vaccine therapy, and it has been the experience with these that has converted many to the use of vaccines. They have been used in nearly every type of infection, acute and chronic, but it appears that the latter are more amenable to this treatment. Chronic abscesses and tuberculous lesions where a secondary infection has taken place are benefitted. It gives a sense of satisfaction to a practitioner of vaccine therapy to cure a case of chronic acne or furunculosis that has been treated unsuccessfully by every known means.

Colon infections of the urinary tract have been successfully treated. Gonorrhœal infections of the genito-urinary tract have also offered a good field for this therapy and especially good results have been obtained in gonorrhœal rheumatism. In chronic rheumatism the teeth, tonsils, sinuses, genito-urinary tract and the intestines should be examined to see if a bacteriological factor is not the cause of the trouble since it has been found that such types of arthritis are very much improved under a long course of vaccines.

It may even be stated that blood infections by the streptococcus viridans have been very much improved after a long series of injections. As we know nearly all these cases are fatal, and as has been previously stated this streptococcus has been found to be of a low grade of virulence; nevertheless, it is advisable to use vaccines in subacute endocarditis.

In regard to surgical tuberculosis much may be said in favor of the value of tuberculin, especially Bacillus Emulsion, in adenitis and tuberculosis of the bones, joints and of the genito-urinary tract. A case of tuberculosis of the genito-urinary tract has been coming to the laboratory for injections of tuberculin for about five years after he was supposed to have died, at least he was told he would. The surgeon who gave the prognosis has been dead for two years.

We are all familiar with the good results of prophylactic injections of vaccines as a means of prevention in typhoid fever. The army statistics are the best proof of this and more, and more individuals are availing themselves of this means of protecting themselves against this severe illness. This means of prevention is available to nearly all physicians, since it is only necessary to give three injections and there have been no fatalities, since anaphylaxis is not readily produced by bacterial proteins.

The composition of phylacogens is not generally known. It is surmised that they are filtrates of the media and the bacterial products. Certainly it is not advisable to use mixed phylacogens, and their use before ascertaining the etiological factor is contrary to one of the precepts of Wright himself.

It seems then that we really have a valuable addition to our therapy in vaccines. Keep in mind these suggestions: learn the species of micro-organism that is the cause of the trouble, immunize the patient against it, do not inject foreign proteins or poisons in the shape of mixed vaccines, and above all, do not neglect general and local measures.

CORRESPONDENCE.

Dr. John C. MacEvitt, M.D.,
Editor, New York State Journal of Medicine.

Dear Doctor MacEvitt: Your editorial in the June number of the Journal, "A Duty We Neglect" was as timely as interesting. We had a close shave this year on the "Scienceless Science" and Osteopath bills. So close as to turn defeat into a positive encouragement for their sponsors to frame the same or similar measures at the earliest opportunity.

It appears to me our legislative methods are too ethical and refined. Our society representatives seem to feel they are dealing with a set of men who are anxious to pass all and only those measures which are truly good for the people. The character of bills passed or defeated only too well bear mute refutation of this assumption.

We have heretofore waited until a resolution was actually introduced into or perhaps reported out of the committee and then fought along ethical lines of reason to induce the legislators to see its injustice as harmful to the interests of advanced medicine and vote for its defeat. The real facts, however, are that votes are "swapped" when matters have reached this stage and right or wrong, *per se,* have about as much influence on the final vote as a grain of epsom salts on the bowels.

Oliver Wendell Holmes has said, "a man's training should begin with his grandfather." Similarly, a legislator's vote should be influenced before his election. Every candidate after his nomination should be seen personally by members of the State Society residing in his district and made to pledge himself definitely that he will vote against any action favoring Osteopathy, Christian Science or Anti-vivisection in case of his election. If he should refuse, this fact should be made known to every doctor in his election district with the request that everything possible be done to secure his defeat. His stand against these "paths" should likewise be made public and his election secured. After that, if he fail to keep his promise he can be held up as one whose word is valueless; a thing no politician desires to have flaunted about. This is precisely what is done in other lines. Some time ago one of my friends ran for the Assembly and I once accompanied him to his headquarters. Quite unexpectedly two men called representing some liquor interests and demanded to know his position on a measure affecting them and likely to be brought up at the next Legislature. And he was not allowed to go until he had made a definite pledge. Some time after election he told me great pressure had been brought to bear upon him to vote against that bill, but he had to stick to his word.

It is self-evident that more can be accomplished with a man who desires political advancement than with one who already has it. Politics is neither ethical nor reasonable and can be most effectively fought only with its own weapons.

I write this to you as the one best placed to give it the necessary state-wide publicity. Next fall we will vote for all the senators and assemblymen of the state and under a new primary and election law. Undoubtedly many new representatives will be elected. There is no better time possible (nor none too much time left for organization) for making every candidate declare how he stands on those two fundamental questions of vital importance to the medical profession of the state:

1. Are you in favor of allowing Christian Scientists, Osteopaths, Neuropaths, Chiropractics, etc., the same privileges as the Physicians of New York State without fulfilling the requirements of the Board of Regents?
2. Are you in favor of Anti-Vivisection?

Yours fraternally,
ISAAC M. HELLER.

New York City, June 22, 1914.

The Medical Society of the State of New York

MEETING OF THE COUNCIL.

A regular meeting of the Council of the Medical Society of the State of New York was held at the Society Rooms, 17 West 43d Street, New York, May 29, 1914, at 11.15 A. M. Dr. Grover W. Wende, President, in the chair. Dr. Wisner R. Townsend, Secretary.

The meeting was called to order by the President, and on roll call the following answered to their names: Drs. A. G. Bennett, J. S. Cooley, R. M. Elliott, F. H. Flaherty, Alexander Lambert, G. Lenz, A. T. Lytle, T. H. McKee, L. K. Neff, M. B. Palmer, R. Selden, W. T. Shanahan, S. W. S. Toms, W. R. Townsend, F. Van Fleet, J. M. Van Cott, G. W. Wende, H. L. Winter.

Dr. F. F. Manley sent his excuses.

The minutes of the last meeting were approved as read.

Upon motion duly seconded and carried, Mr. A. H. Wicks was reappointed auditor, at $200 a year.

Dr. Winter presented a report from the Committee on District Branch By-Laws. Same accepted, and on motion duly seconded and carried, a committee of five was authorized to prepare suitable By-Laws for adoption by the district branches, with Dr. Winter as Chairman and Mr. Lewis, ex officio member. The Chair appointed Drs. A. G. Bennett, J. S. Cooley, G. Lenz and W. T. Shanahan.

Dr. Van Cott presented the following names as members of the committee authorized by the House of Delegates as a sub-committee on Public Health and Education of the Public Health Committee: Dr. P. Van Voast, Chairman, New York, Drs. M. Allen, Rochester, M. Gage-Day, Kingston, E. R. Hatch, Buffalo, E. L. Jefferis, New York, J. K. Qua, Amsterdam, S. Radcliff, Yonkers.

Dr. Van Fleet nominated as members of his committee the following, stating that the remaining vacancies would be filled at the December meeting: First District—Drs. B. F. Curtis Scarborough-on-Hudson, S. Flexner, New York, A. F. Hess, New York, S. W. Lambert, New York, W. H. Park, New York, W. M. Polk, New York, H. E. Schmid, White Plains, J. S. Thacher, New York, W. R. Townsend, New York, J. E. Sadlier, Poughkeepsie. Second District—Drs. E. H. Bartley, Brooklyn, W. F. Campbell, Brooklyn, J. R. Kevin, Brooklyn, J. C. MacEvitt, Brooklyn, F. Overton, Patchogue, J. M. Van Cott, Brooklyn. Third District—Drs. J. D. Craig, Albany, A. Vander Veer, Albany. Fourth District—Drs. G. F. Comstock, Saratoga, G. C. Madill, Ogdensburg, C. Stover, Amsterdam. Fifth District—Drs. T. W. Clarke, Utica, C. B. Forsyth, Alexandria Bay, H. G. Locke, Syracuse. Sixth District—Drs. R. P. Higgins, Cortland, B. W. Stearns, Unadilla. Seventh District—Drs. W. T. Mulligan, Rochester, J. F. W. Whitbeck, Rochester. Eighth District—Drs. N. G. Richmond, Fredonia, G. W. Cottis, Jamestown, V. M. Rice, Batavia, J. L. Butsch, Buffalo, B. F. Schreiner, Buffalo, H. U. Williams, Buffalo. Moved, seconded and carried that the names be confirmed.

Dr. Van Cott presented a report as to the disposition of books and periodicals in the Kings County Library. Same ordered accepted and placed on file.

It was moved, seconded and carried that the President select one district branch councilor to act as chairman in getting the Red Cross Committee in operation in this state. The President appointed Dr. Frederick H. Flaherty of Syracuse.

Moved, seconded and carried that the President sign the new contract with Mr. Lewis authorized at the last meeting.

Dr. McKee, Chairman of the Committee on Scientific Work, moved that the sections in existence at the last meeting be continued and that a section on Syphilis be appointed for one year. Motion seconded and carried.

The Treasurer reported a bank balance on hand of $8,452.43 and the receipt of the sum of $676.26 from the Committee on Arrangements as a surplus after paying expenses.

Moved, seconded and carried that the report of Dr. Richardson, Chairman of the Committee on Arrangements, be accepted, and that the Secretary extend the thanks of the Council to the Committee for the capable management and satisfactory results.

Moved, seconded and carried that the next meeting be held in Buffalo and last three days.

The following committees were announced:

On Workmen's Compensation—Dr. Alexander Lambert, New York, Chairman; Drs. J. S. Cooley, Mineola, F. H. Flaherty, Syracuse, T. H. McKee, Buffalo, J. J. Moorhead, New York, F. Van Fleet, New York. (For

Resolutions see *New York State Journal of Medicine*, Vol. 14, No. 5, pages 256 and 277.)

On Medical Education—Dr. W. F. Campbell, Brooklyn, Chairman; Drs. G. R. Critchlow, Buffalo, W. P. Healy, New York, J. L. Heffron, Syracuse, J. D. Craig, Albany, A. T. Kerr, Ithaca, S. W. Lambert, New York, R. S. Morton, New York, W. H. Park, New York, H. U. Williams, Buffalo. (For Resolutions see *New York State Journal of Medicine*, Vol. 14, No. 5, page 278.)

On Midwives—Dr. J. Van Doren Young, New York, Chairman; Drs. O. P. Humpstone, Brooklyn, J. A. Sampson, Albany, F. W. Sears, Syracuse, P. W. van Peyma, Buffalo. (For Resolutions see *New York State Journal of Medicine*, Vol. 14, No. 5, page 279.)

The following committee was appointed to represent the State Society at the Constitutional Convention: Dr. J. B. Ransom, Dannemora, Chairman; Drs. W. F. Campbell, Brooklyn, F. C. Curtis, Albany, H. L. Elsner, Syracuse, W. C. Phillips, New York, C. G. Stockton, Buffalo, C. Stover, Amsterdam, J. F. W. Whitbeck, Rochester.

There being no further business the minutes were read and approved, and the meeting adjourned at 2.15 P. M.

WISNER R. TOWNSEND, *Secretary.*

DISTRICT BRANCHES.

ANNUAL MEETINGS FOR 1914.

First District Branch—Thursday, October 8th, in New York City.

Second District Branch—Thursday, October 29th, in Mineola.

Third District Branch—Tuesday, September 15th, in Albany.

Fourth District Branch—Tuesday, October 13th, in Gloversville.

Fifth District Branch—Thursday, October 1st, in Syracuse.

Sixth District Branch—Tuesday, October 6th, in Norwich.

Seventh District Branch—Tuesday, September 22d, in Newark.

Eighth District Branch—Wednesday and Thursday, September 23d to 24th in Niagara Falls.

EIGHTH DISTRICT BRANCH OF THE MEDICAL SOCIETY OF THE STATE OF NEW YORK.

Annual meeting, Niagara Falls, N. Y., Wednesday and Thursday, September 23-24, 1914.

PRELIMINARY PROGRAM.

Afternoon Session 2 P. M.

Business meeting.

President's address, Arthur G. Bennett, M.D., F.A.C.S., Buffalo.

"Half a Century of Medicine and Surgery: A Retrospect," George E. Blackham, M.D., Dunkirk.

"Some Observations, Therapeutic and Otherwise, from a General Practitioner," M. Jean Wilson, Warsaw.

"Spasmophilia," Carl G. Leo-Wolf, M.D., Buffalo.

"Eiweiss Milk as used in Finkelstein's Clinic, Berlin," Douglas P. Arnold, M.D., Buffalo.

Dinner, 7 P. M.

THURSDAY, SEPTEMBER, 24, 1914.

Morning Session, 10 A. M.

Address, by the President of the Medical Society of the State of New York, Grover W. Wende, M.D., Buffalo.

"Newer Researches in Regard to Cause, Origin and Significance of Abdominal Pain," R. J. Behan, M.D. (by invitation), Pittsburgh, Pa.

"Surgical Diagnosis," William D. Johnson, M.D., Batavia.

"Abdominal Cæsarean Section: Indications for Operation, Technic and Report of Cases," Irving W. Potter, M.D., Buffalo.

"Functional Conditions," J. Henry Dowd, M.D., Buffalo.

"Ethics, Medical and Otherwise," Edward Munson, M.D., Medina.

"Contract Practice: An Economic Problem," Albert T. Lytle, M.D., Buffalo.

SEVENTH DISTRICT BRANCH OF THE MEDICAL SOCIETY OF THE STATE OF NEW YORK.

ANNUAL MEETING, NEWARK, N. Y., TUESDAY, SEPTEMBER, 22, 1914.

Meeting called to order at 10 A. M.; Wm. T. Shanahan, M.D., President Seventh District Branch, Sonyea, N. Y.

PRELIMINARY PROGRAM.

"The State Society," Grover W. Wende, M.D., President Medical Society, State of New York, Buffalo.

"Prophylactic Treatment Against Scarlet Fever," F. M. Meader, M.D., State Dept. of Health, Albany.

"Quarantine Fumigation and Disinfection in Contagious Disorders," A. A. Young, M.D., Newark.

Discussion of two preceding papers.

"Some Phases of the Cancer Problem," Worthington S. Russell, M.D., Tarrytown.

"Cancer, A New Theory with a Hopeful Outlook," S. W. Little, M.D., Rochester.

Discussion of two preceding papers.

"Blood Vessel Changes with Special Reference to Various Forms of Autointoxication," Albert C. Snell, M.D., Rochester.

Luncheon at Newark State Custodial Asylum at 1 P. M., upon invitation of Supt. E. A. Nevin, M.D.

Directly after luncheon a business session of the district branch will be held.

"A Brief Review of the Rules and Diagnostic Procedures Applicable to the Diagnosis of Early Pulmonary Tuberculosis," A. H. Garvin, M.D., Supt. State Hospital for Tuberculosis, Raybrook.

"Syphilis and the Nervous System," William H. Montgomery, M.D., Willard.

"The Management of Acute Perforations of the Stomach," Thomas Jameson, M.D., Rochester.

"Acute Intestinal Obstruction, Some Factors in Diagnosis and Treatment," Ledra Heazlitt, M.D., Auburn.

Discussion of two preceding papers.

"Further Report of a Case of Acromegaly with Autopsy Findings," A. L. Shaw, M.D., Sonyca.

"Glandular Fever," A. W. Armstrong, M.D., Canandaigua.

"Ectopic Pregnancy," C. C. Lytle, M.D., Geneva.

Newark may be easily reached by Rochester, Syracuse and Eastern Electric Railway from Rochester or from points east. Cars stop near Custodial Asylum.

PRELIMINARY REPORT OF THE WORKMEN'S COMPENSATION COMMITTEE.

Dr. Grover W. Wende, President: The Committee on the Workmen's Compensation Law desires to submit to you the following report:

In the report of the Secretary, presented to the House of Delegates at the Annual Meeting of the State Society held in New York on April 27, 1914, the following appears:

"The Workmen's Compensation Committee will be appointed early in the year before the meeting of the State Organization, and it would seem desirable to the Society at this meeting to appoint a committee of not less than five members representing different parts of the State to appear before this Commission from time to time to present the views of the profession on the questions that will come up for solution, especially those that will affect medical men.

The recommendation was approved by the House and the President appointed the following committee: Chairman, Dr. Alexander Lambert; Dr. James S. Cooley, Frederick H. Flaherty, Thomas H. McKee, John J. Moorhead, Frank Van Fleet.

At the meeting of the Council in New York City on May 29th, Dr. Darlington, of the Commission, Mr. Archer, Secretary of the Ohio Industrial Board, and several representatives of the insurance companies, including Mr. Taft, President of the Claim Association, appeared before the Council and a full and free discussion was had on the subject of fees. At a subsequent meeting of the Committee circular letters were sent to the Secretary of every County Society in the state asking that a fee bill of the County Society be forwarded to the Committee so that it could begin its work. These various items were tabulated and meetings of the Committee held to investigate the subject and compare the fee bills of the County Societies with the fee bills proposed by the insurance companies.

The Committee held subsequent meetings and the new Chief Medical Adviser of the Commission, Dr. Frederic W. Loughran, a member of the Society, appeared and expressed his willingness to co-operate in every way to assure the harmonious working of the plan proposed. At this meeting Dr. Archer, representing the Ætna Insurance Company and the Travelers' Insurance Company, also appeared and expressed his willingness and desire to co-operate. At a subsequent meeting, the Committee, after having gone over the subject very carefully, decided that the profession would ask all the insurance companies and the Commission that the following terms be granted:

First—That there should be no fee less than $1.00.

Second—That the fee for office visits should be $1.00, for hospital visits $1.00, day visits at home of patient $2.00, night visits at home of patient $3.00.

Third—That this fee bill should be given one year's trial.

Various conferences were held which resulted in the adjustment of other differences in a satisfactory manner to the insurance companies and the Compensation Committee. Dr. W. L. Gahagan, Chairman of the Executive Committee of the New York Claim Association, agreed to these terms, as also did Dr. Archer, representing the companies heretofore named.

On the 23d of July the Committee, consisting of Dr. Alexander Lambert, Chairman, Drs. James S. Cooley, Frederick H. Flaherty and Frank Van Fleet, and Dr. Wisner R. Townsend, Secretary of the Society, appeared before the Compensation Commission at their headquarters in New York City and submitted the accompanying fee bill, requesting that the Commission use the same as a standard.

This fee bill is not one which will supersede any county fee bill already in existence as far as the general public is concerned. It is a fee bill only for use in the adjustment of the claims arising under the Workmen's Compensation Act and refers only to the accidents and operations and treatment resulting therefrom. It is, therefore, a fee bill for all laborers, artisans and workmen, except agricultural laborers and household servants, and only for their care when they are injured during their working hours at their trade or occupation. These patients have formerly gone to the hospitals and received free treatment, or when treated outside they have been often too poor to pay even the fees of this fee bill. Under the Workmen's Compensation law the insurance company or the state insurance fund pays these medical fees. Thus, although the items may seem low, the payment is certain.

It affords the Committee great pleasure to acknowledge the many courtesies extended by the various members of the insurance companies with whom they have met in conference, and to Drs. Darlington and Loughran for their assistance. The results achieved seem to the Committee to be most satisfactory, and they earnestly urge upon the profession of the state that they do all in their power to give this most beneficent law a thorough and cordial trial.

ALEXANDER LAMBERT, M.D.,
July 24, 1914. Chairman.

MEDICAL AND SURGICAL FEE BILL

(SCHEDULE OF RATES)

SPECIFIC INJURIES

	A	B	C	D	
	Flat rate, including first aid, operation and full treatment.	Operation only.	Total limit for full subsequent treatment.	Separate charges for all subsequent treatment, not to exceed total in Column "C."	
AMPUTATIONS:—				Home	Office
Hip	$75.00	$50.00	$25.00	$1.50	$1.00
Thigh	50.00	35.00	15.00	1.50	1.00
Foot	50.00	35.00	15.00	1.50	1.00
Leg	40.00	25.00	15.00	1.50	1.00
Shoulder joint	55.00	40.00	15.00	1.50	1.00
Arm, forearm or hand	40.00	25.00	15.00	1.50	1.00
Metatarsal or metacarpal—one	20.00	10.00	10.00	....	1.00
Metatarsal or metacarpal—two or more	25.00	15.00	10.00	....	1.00
Finger or toe	15.00	5.00	10.00	....	1.00
Fingers or toes—two or more	20.00	10.00	10.00	....	1.00
Ankle joint	40.00	25.00	15.00	1.50	1.00
Knee "	50.00	35.00	15.00	1.50	1.00
Elbow "	40.00	25.00	15.00	1.50	1.00
Wrist "	40.00	25.00	15.00	1.50	1.00
FRACTURES:—					
Upper arm	20.00	15.00	5.00	1.50	1.00
Forearm—one bone (shaft)	15.00	10.00	5.00	1.50	1.00
" both bones (shaft)	20.00	10.00	10.00	1.50	1.00
" Colles'	25.00	15.00	10.00	1.50	1.00
Femur	30.00	20.00	10.00	1.50	1.00
Lower leg—one bone	20.00	10.00	10.00	1.50	1.00
" " both bones	25.00	15.00	10.00	1.50	1.00
Jaw	20.00	10.00	10.00	1.50	1.00
Ribs—one or more	10.00	5.00	5.00	1.50	1.00
Patella	30.00	20.00	10.00	1.50	1.00
Pubic bone	15.00	2.00	13.00	1.50	1.00
Acetabulum	50.00	30.00	20.00	1.50	1.00
Metatarsal or metacarpal	5.00	2.00	3.00	1.50	1.00
Fingers—one or more	5.00	2.00	3.00	1.50	1.00
Toes—one or more	10.00	5.00	5.00	1.50	1.00
Coccyx	15.00	2.00	13.00	1.50	1.00
Sacrum	15.00	2.00	13.00	1.50	1.00
Sternum	10.00	5.00	5.00	1.50	1.00
Spine	30.00	10.00	20.00	1.50	1.00
Lachrymal bone	10.00	5.00	5.00	1.50	1.00
Malar bone	10.00	5.00	5.00	1.50	1.00
Scapula	20.00	10.00	10.00	1.50	1.00
Clavicle	15.00	5.00	10.00	1.50	1.00
Nasal bones	10.00	5.00	5.00	1.50	1.00
Compound fracture	25% extra.				
Operation for wiring of bones or plating	50% extra.				

	A	B	C	D	
	Flat rate including first aid, operation and full treatment.	Operation only.	Total limit for full subsequent treatment.	Separate charges for all subsequent treatment, not to exceed total in Column "C."	
DISLOCATIONS:—				Home	Office
Shoulder	$15.00	$5.00	$10.00	$1.50	$1.00
Elbow	10.00	5.00	5.00	1.50	1.00
Wrist	10.00	5.00	5.00	1.50	1.00
Hip	25.00	10.00	15.00	1.50	1.00
Knee	20.00	5.00	15.00	1.50	1.00
Patella	10.00	5.00	5.00	1.50	1.00
Ankle	20.00	5.00	15.00	1.50	1.00
Clavicle	15.00	5.00	10.00	1.50	1.00
Fingers—one or more	3.50	1.50	2.00	1.50	1.00
Toes—one or more	5.00	2.00	3.00	1.50	1.00
Jaw	5.00	3.00	2.00	1.50	1.00
Ribs—one or more	5.00	3.00	2.00	1.50	1.00
Spine	25.00	15.00	10.00	1.50	1.00
Sternum	5.00	3.00	2.00	1.50	1.00
Coccyx	10.00	5.00	5.00	1.50	1.00
Metacarpal—one or more	5.00	3.00	2.00	1.50	1.00
Metatarsal—one or more	10.00	5.00	5.00	1.50	1.00
Carpal—one or more	5.00	3.00	2.00	1.50	1.00
Tarsal—one or more	10.00	5.00	5.00	1.50	1.00
Scapula	15.00	5.00	10.00	1.50	1.00
Pelvis	10.00	5.00	5.00	1.50	1.00
SPECIAL OPERATIONS:—					
Trephining of skull	50.00	40.00	10.00	1.50	1.00
Laparotomy for traumatic peritonitis	50.00	40.00	10.00	1.50	1.00
Fixation or suturing of kidney	75.00	50.00	25.00	1.50	1.00
Laparotomy for rupture or wound of bladder	50.00	40.00	10.00	1.50	1.00
" " " " " " liver	50.00	40.00	10.00	1.50	1.00
" " " " " " spleen	50.00	40.00	10.00	1.50	1.00
" " " " " " stomach	50.00	40.00	10.00	1.50	1.00
" " circumscribed aneurism	50.00	40.00	10.00	1.50	1.00
Trephining bone abscess	10.00	5.00	5.00	1.50	1.00
Caries or necrosis—removal of	15.00	10.00	5.00	1.50	1.00
Tracheotomy	40.00	25.00	15.00	1.50	1.00
Intubation	10.00	5.00	5.00	1.50	1.00
Rupture of abdominal wall	25.00	10.00	15.00	1.50	1.00
Nerve—section or suturing of	10.00	5.00	5.00	1.50	1.00
Injection of antitoxin for tetanus or hydrophobia—each treatment $5.00, total not to exceed $25.00.					
Anthrax—cauterization or excision	25.00	10.00	15.00	1.50	1.00
Ligating important arteries (separate operation)	10.00	5.00	5.00	1.50	1.00
Ligating small arteries (separate operation)	5.00	3.00	2.00	1.50	1.00
Hernia—reduction by taxis and applying truss (subsequent treatment none)	5.00	....	....	....	....
Herniotomy	50.00	35.00	15.00	1.50	1.00
Enucleation of eyeball	40.00	25.00	15.00	1.50	1.00

	A	B	C	D	
	Flat rate, including first aid, operation and full treatment.	Operation only.	Total limit for full subsequent treatment.	Separate charges for all subsequent treatment, not to exceed total in Column "C."	
SPRAINS:					
Shoulder	$5.00	$2.00	$3.00	$1.50	$1.00
Elbow	5.00	2.00	3.00	1.50	1.00
Wrist	5.00	2.00	3.00	1.50	1.00
Hip	5.00	2.00	3.00	1.50	1.00
Knee	5.00	2.00	3.00	1.50	1.00
Ankle	5.00	2.00	3.00	1.50	1.00
All other joints	3.00	1.00	2.00	1.50	1.00
SPECIAL ITEMS:—					
Minor operations—repair of small wounds, including suturing and dressing	5.00	2.00	3.00	1.50	1.00
Repair of large wounds requiring extensive suturing and dressing	7.50	3.00	4.50	1.50	1.00
Abscess—incision	4.00	2.00	2.00	1.50	1.00
Laminectomy (special operation)	75.00	50.00	25.00	1.50	1.00
Paracentesis, thoracicis or pericardii (special operation)	15.00	10.00	5.00	1.50	1.00
Rupture of tendon—large	10.00	5.00	5.00	1.50	1.00
" " " small	5.00	2.50	2.50	1.50	1.00
GENERAL ITEMS:—					
Assisting at operation—major	10.00				
Assisting at operation—minor	2.00 to 5.00				
Mileage beyond city limits—per mile one way only	.50				
Examination in lunacy—including written report and one days' attendance in Court or before Commission	50.00				
Subsequent Court or Commission attendance —per day	25.00				
Urinalysis—when specially requested	2.00				
Complete physical examination and report by other than attending physician	3.00				
Autopsy—complete with written report	50.00				
" attending but not performing	10.00				
Microscopical and chemical analysis of organs.	25.00 extra				
Testimony in Court or before Commission as to simple fact of injury	10.00				
Testimony at Coroner's Inquest	5.00				
Expert testimony—per day	15.00 to 25.00				
Introducing catheter	2.00				
X-ray picture—including plate	5.00				
Subsequent pictures—including plates	3.00 each				
General anæsthetic—administration of	5.00				

ORDINARY ITEMS:—	First aid	Subsequent treatment—office
Ordinary day visit at house, including antiseptic dressing when necessary	$2.00	$1.00
Ordinary day visit at hospital, including antiseptic dressing when necessary	1.00	1.00
Ordinary office treatment, including antiseptic dressing when necessary	1.00	1.00
Visit—including antiseptic dressing and necessary operative procedures in ordinary cases of incisions, punctures, lacerations or contusions	2.00	1.00
Night visit—9 P. M. to 7 A. M	3.00	
Formal detailed report by attending physician at special request of insurance carrier	1.00	
First attention at office—including operative procedure and dressing of ordinary wounds	1.50	1.00
Removal of ordinary foreign body from conjunctiva, at office	1.00	
Removal of foreign body from cornea	1.50	1.00

Cases not specifically included in this schedule are to be treated on basis of day and night visits, except where special treatment is necessary. In that event, the facts (if not an emergency case) are to be submitted to the insurance carrier and arrangements made with it for such additional or special treatment.

Treatments shall not exceed sixty days (as provided by the law, section 13) from date of injury, except upon special arrangement with insurance carrier.

These fees have been established with the understanding that they include, in all cases, ordinary dressings and anæsthetics, etc., for the proper treatment of each case, and that they will be supplied by the attending physician. It is also understood that the strictest aseptic precautions will be observed in accordance with approved methods of surgery.

It is understood that itemized bills shall be rendered immediately after treatment ceases, or in any event, at the expiration of sixty days from date of injury. Such bills are to be itemized, showing date of each visit, dressing or operation, and charge for same.

Reports relative to condition of injured employees under treatment shall be made when requested, without extra charge.

This Schedule, except as to general items, contains three systems, any one of which may be followed by the physician according to circumstances.

I. Column A shall apply when the same physician operates and also gives subsequent treatment.

II. Columns B and C when one physician operates and another gives subsequent treatment.

III. Columns B, C and D when one physician operates and another gives subsequent treatment. Charges for each visit to be on the basis of column D, total not to exceed column C.

NEW YORK STATE JOURNAL OF MEDICINE

A Journal Devoted to the Interests of the Medical Society of the State of New York

JOHN COWELL MAC EVITT, M.D., Editor

Business and Editorial Offices: 17 West 43d Street, New York, U. S. A.
Address Journals sent in Exchange to 1313 Bedford Avenue, Brooklyn, N. Y., U. S. A.

Vol. XIV. SEPTEMBER, 1914 No. 9

EDITORIAL DEPARTMENT

AN EXCERPT FROM THE REPORT OF THE JUDICIAL COUNCIL OF THE AMERICAN MEDICAL ASSOCIATION TO THE HOUSE OF DELEGATES, ASSEMBLED AT ATLANTIC CITY, JUNE 22, 1914.

THE report of the Judicial Council contained many valuable recommendations, but none of more practical personal application to members of the medical profession than the one on "Advertising in the Public Press." In the belief that you are particularly interested in this phase of medical life we present the following excerpt from the report as it deserves a position of marked prominence.

"In pursuance of its duty to investigate general professional conditions and all matters pertaining to the relations of physicians to one another and to the public, the Judicial Council calls the attention of the House of Delegates to the subject of advertising in the public press by physicians. The Judicial Council finds that the profession is restive under the flagrant misuse of the public press by certain members of the profession and certain prominent and non-prominent Fellows of the American Medical Association itself.

"The Principles of Ethics of the American Medical Association define clearly the methods which are objectionable for physicians to use to bring themselves into the public notice in their endeavor to gain a livelihood. They state clearly the methods by which a man may rise by honorable endeavor to the fame of a well-earned reputation, and suggest the different methods by which a man may gain an unsavory notoriety. The standards of the medical profession have always demanded that physicians shall not exploit their ability or achievements to the laity. The medical profession condemns such advertising as quackery. The refraining from or the employment of advertising is the clearly defined difference between a reputable physician and a quack—the physician, one who quietly, through his professional work and attainments, seeks by daily honorable dealing to spread the truth among his patients; the quack, one who endeavors to obtain his livelihood by playing on the credulity of the ignorant and the timid, imposing on the public statements known to be false, stopping at nothing in his effort to enhance his notoriety or fill his pocket.

Popular Writeups of Scientific Subjects.

"Of late years the American Medical Association, through its Council on Health and Public Instruction, has endeavored to spread broadcast knowledge of preventive medicine and public hygiene. It has endeavored to educate the public to an appreciation of what the physicians and surgeons are doing and what are their aims and ideals in medicine. This has aroused a widespread interest in the public mind, and the public press has eagerly seized on this propaganda as news which interests its readers and which is, therefore, something to be sought and published. This has been legitimate work of public benefit and for the public good, and no one questions that

it should be highly commended. It has, however, produced the following situation: The public is eager to hear and learn all it can of the most recent advances in the cure of diseases that so far have baffled the efforts of men to cure, such as cancer and tuberculosis; it is eager to hear of the brilliant operations by which men have seemingly been saved from certain destruction and brought back to useful existence. It is anxious to learn and put in practice the best methods of public hygiene and of preventive medicine. The daily press has correctly considered such subjects as news, as that is what interests its daily readers, but the medical profession has been placed at a disadvantage. The members of the profession who value the kind of reputation which they may bear before the public and from whom the most accurate information could be obtained, have been forced to see the most garbled statements published as medical facts, or have been refused opportunities to have the truth published unless they were willing to put themselves in the false position of self-exploitation. Certain other members of the profession, however, with a very wide-awake commercial spirit, have quickly seen the means by which they may appear in the press as doing extraordinary things above their fellows, as being the ones to whom all men refer when new discoveries are to be discussed and considered, and have eagerly seized on the opportunity, which the situation has offered, to have their pictures, their honors and their doings put in the public press. They invited reporters to be present at their clinics that these surely may be reported, and have used various other methods that have appealed to their spirit of commercialism that they might increase their passing notoriety and their incomes. While this may not be quackery, it must be acknowledged to be advertising. It is frequently difficult to decide where one ends and the other begins. Certain newspapers have heralded this stepping over the limits of the former strict adherence of the profession to its non-advertising principles as something laudatory and much to be desired. They seemingly fail to understand and to appreciate that if the barriers which the medical profession has held up, and still holds up, are broken down, quackery will become more and more rampant, and although the ease with which the press will obtain the sensations it desires will increase, the accuracy and the truth and the value of the news which they so eagerly seek will soon be ruined.

"The lay press has often done injustice and unconscious injury to the physicians it was endeavoring to aid. In the smaller communities a physician or surgeon may do some act, perform some operation or bring about the cure of some patient in whom the editor of a local paper is greatly interested. This editor appreciates the value of keeping a person's name before the public, and hoping to give the physician help and assistance in establishing his reputation begins to mention the doctor's daily comings and goings or operations. Before long the doctor is suspected of deliberately trying to advertise himself by means of newspaper writeups and his reputation as an upright physician suffers, while he himself may be blameless in the whole matter. In the larger communities, among the men holding appointments on the staffs of hospitals, it is not unusual, when some well-known individual is being treated at such a hospital, for the press eagerly to seek for knowledge of his condition, and many a reputable physician has squirmed to see his name and his work flaunted before the public, to his detriment, as he well knows, and for which injury there is no possible redress. This situation is not localized in any one place. It is universal.

Publicity Committees Recommended.

"To all questions there are two sides, and we must realize that if the American Medical Association endeavors to arouse in the public an interest in medical matters and increase their knowledge of public health and hygiene, with this increased knowledge will come a demand for more knowledge concerning the various diseases which may be acquired by any individual. The daily press has a right to publish that which is of interest to its readers; hence it has a right to a knowledge of medical matters that shall be accurate and given by honorable men. On the other hand, there is every reason why the medical profession shall keep up its barriers against the self-advertising of individuals for selfish purposes, and no adequate reason why these barriers should be let down.

"The Judicial Council, appreciating this situation, recommends the following plan, which has already been tried and which has

met the conditions presenting in a manner satisfactory to all concerned—the public, the press and the medical profession.

"A few years ago the conditions which are referred to above were very acute and very flagrant in Kings County, New York, and the County Society undertook the solution of the problem. At its April meeting, in 1913, this Society appointed a Publicity Committee consisting of three members, which sought to cooperate with the editors of the public press in order to devise a plan by which articles and interviews on medical topics by members of the Society, published in the daily papers, should be truthfully and correctly reported. It was decided that this committee should undertake:

"1. To prevent the publication in the daily press of misleading and erroneous statements on medical topics.

"2. To prevent the publication of cures and surgical operations so exaggerated and false that mental anguish, physical suffering and expense would be imposed upon the sick and afflicted.

"3. To prevent the reporting of ordinary medical cases and surgical operations of no interest to the medical profession which are misunderstood by the public and serve but to exploit the narrator.

"4. To act as an advisory committee, if so desired, to members of the Society who contemplate publishing medical articles in the newspapers and who desire to conform to the Principles of Ethics.

"5. To further the publication of scientific articles on medical subjects relative to the public health.

"6. To seek the co-operation of the editors of the public press to accomplish these purposes.

"The Committee added that it desired it to be understood that it did not discourage publicity, but on the contrary advocated the greatest publicity possible on the liberal ethical lines of the American Medical Association, which encourages members of the medical profession to give as wide publicity as possible to all matters pertaining to hygiene, sanitation and public health, but discourages all direct or indirect self-advertising. That the Committee recognized the futility of any attempt on its part to dictate to the press what it should or what it should not publish. It was thought by the Committee that the adoption of these suggestions would relieve members of the Society of any fear of criticism and aid representatives of the press in securing interviews without difficulty. The Committee wished it thoroughly understood that it would in no sense act as a complainant body against offenders, but would willingly extend its advice to those who sought its aid.

"As is apparent, this Committee acts as a means by which, without mentioning any names and without the exploitation of any individual, the daily press can obtain accurate knowledge of all matters in medicine it desires to publish. The public can obtain through the daily press accurate information on medical matters that are of interest to it, and the names of the individuals giving the opinion remain unpublished. It is worthy of note that the Publicity Committee of Kings County, in its last annual meeting, after a year of trial of this method, reported that since the appointment of the Committee the daily press in Brooklyn had been singularly free from self-exploitative articles by physicians, and that the newspapers, to an encouraging extent, had availed themselves of the advice that the Committee was able to give them, and, further, that the Committee had been able to be of use to various members of the Kings County Society in its advice regarding the wisdom of publishing or not publishing certain articles.

"Members of the Judicial Council have consulted with representatives of several of the large daily newspapers in the country, and in discussing the above plan they have met with every encouragement to believe that this plan could be followed and would be fair and just to the public, the press and the profession. The Judicial Council therefore recommends to the House of Delegates the following resolution:

"*Resolved,* That it is the sense of the House of Delegates of the American Medical Association that each County Society should constitute a Publicity Committee whose duties shall be to give to the daily press accurate information on all medical matters of interest to the public, that this shall be freely given without the mentioning of names or from whence the information comes, and that this Committee shall further act in an advisory capacity to all physicians of its Society in questions relating to publications other than in the medical press. Be it further

"*Resolved,* That the Secretary of the American Medical Association be instructed to forward this resolution, with the reasons calling it forth, to the Secretary of each constituent State Association, with the request that it be transmitted to each component Society of that constituent association."

Report adopted.

Respectfully submitted,

Alexander Lambert, Chairman.
A. B. Cooke,
James E. Moore,
Hubert Work,
George W. Guthrie,
Alexander R. Craig, Secretary.

Original Articles

METRORRHAGIA AT PUBERTY.*

By HENRY C. COE, M.D.,
NEW YORK CITY.

THE ambition of gynecologists to vie with general surgeons in the development of operative technic has led to the neglect of of what may be termed the "scientific" side of our specialty. The operating table has always been more popular in this country than the dead house and the laboratory, a fact to be deplored when we consider the numerous unsolved problems with regard to some of the most familiar clinical symptoms in pelvic disease. This is unquestionably the explanation of the general tendency among the profession to consider gynecology as in a condition of permanent crystallization, presenting little attraction for the research worker in comparison with other fields.

Such general deduction as we have hitherto made have been based on data insufficient and too often inaccurately recorded, so that our foreign confrères, while admitting the boldness and originality of our surgical work, have had less respect for our scientific observations in the direction of pelvic pathology. Uterine hemorrhage is the most familiar symptom of all and the most significant—even more than pain, which is purely subjective, and often vague and indeterminate—since it may be the only indication of the most serious pelvic disease. Its ordinary etiology is familiar to the tyro, but the more occult causes have hitherto baffled the most experienced observers. The writer has no intention of dealing with the gross pathological conditions of which it is the sign, but desires to confine himself to a limited class of cases, of peculiar interest to the family physician, as well as to the specialist, since the former is in a position to study and to treat them more intelligently because his viewpoint is less contracted.

Strange to say, the important subject of menorrhagia and metrorrhagia at puberty has attracted little attention among us, though it has been carefully studied abroad, especially in France. Those who desire to enlarge their knowledge in this direction will be interested in a Paris thesis (Hours, 1906), with its copious bibliography. This was published eight years ago, yet it does not appear that Americans have made many scientific contributions to existing knowledge along this line—an index of our intellectual impatience and lack of interest in *causes* rather than *effects*. Many unreported cases must have been observed, especially by practitioners, which have not been carefully studied, probably because the phenomena were regarded as ordinary disturbances attending the establishment of menstruation. The writer will be gratified if this brief paper awakens a more general interest in this subject.

In this connection it is a pleasure to call attention to the original work in hæmatology of Dr. Arnold Sturmdorf, of this city, for a full description of which we refer to his paper and also to a recent one by Dr. J. Riddle Goffe. These will be considered later.

The physiology and pathology of this condition are separated by a border line so ill-defined that it is often impossible to tell where one ceases and the other begins. Much light has been thrown upon this question by careful microscopical studies of the endometrium before, during and after the monthly flow. The variations in blood pressure and in the amount of blood in the uterine circulation are often dependent upon psychical, as well as physical influences, unaccompanied by any evidence of local morbid changes.

French writers have described various morbid changes in the uterus and ovaries of young girls at puberty, which suggest the study rather than the post-mortem table, such as "metritis," due to "irritation," the result of uncleanliness, infection, traumatism, "taking cold," psychical causes, etc. Secondary to the so-called metritis is "sclerocystic degeneration of the ovaries," which is also supposed to be due to an obscure condition termed *"l'ovarite menstruelle"* (Hours, *loc, cit*).

On the other hand, all gynecologists have met with neoplasms in children—ovarian cysts, intrauterine polypi—with congenital displacements and erosions of the portio vaginalis, all of which are the direct cause of atypical bleeding at puberty. The writer has had occasion to operate in several cases of this character and in one girl of twelve to perform hysteropexy for complete procidentia. All these conditions cause irregular uterine hemorrhages in older patients, so that their disturbing influence upon what has been called *"la crise pubérale"* is readily explained.

But with these obvious etiological facts we are less concerned, being interested here in cases in which no discoverable cause, either local or general, can be discovered.

The following cases are cited as typical:

CASE I.—J. B., æt. 13, a little girl whom I had known from infancy. Her parents and younger brother were absolutely sound and she had never been ill, except with the minor ailments of childhood. She developed early, her first periods being irregular and painless, in fact, she never complained of any discomfort referable to the pelvis. Later the flow became more profuse, but not excessive for a strong, healthy girl. After a few months she began to have a more or less constant bloody discharge, never profuse, which persisted for several months in spite of medication and astringent douches at home and in Europe. Abdomino-rectal examination negative.

Finally a thorough examination was made under anesthesia. The uterus was small, in normal position, and the ovaries could not be palpated.

* Read at the Annual Meeting of the Medical Society of the State of New York, April 28, 1914.

Through the speculum a marked erosion of the os was noted. The curette brought away a few fragments of mucosa, without attendant hemorrhage. The uterus measured 2½ inches.

The condition was improved for several months, when the metrorrhagia returned, but did not trouble the little patient, who indulged in all athletic sports and could not be kept quiet at the time of menstruation, as she was so free from discomfort. I advised against further treatment, local or general. A week later the child died suddenly under distressing circumstances. An autopsy was held, at which the pelvic organs were carefully examined. I was told that "cystic degeneration" of the ovaries was present, though to what extent I was not informed. At any rate, no symptoms were noted referable to them, unless the metrorrhagia was due to this condition.

Case II.—F. L. Of strong, healthy parents. Grew rapidly and matured at 11½ years, being unusually well developed, physically and mentally, for her age. The first menstruation was painless and lasted four days. Four months later the flow reappeared and lasted four weeks, then stopped for ten days and began again, being quite profuse. Many large clots were passed. At this time I examined her per rectum and could find nothing abnormal within the pelvis. She was quite anemic, but the heart action was good. She had been out of school for several weeks and in bed for a week under medicinal treatment and astringent douches. I advised styptol and adrenalin chloride, which checked the bleeding for eight days, when it again became so profuse that she soaked a dozen napkins in twenty-four hours and was almost exsanguinated.

January 26, 1914.—Examination under anesthesia negative. Uterus 2½ inches in depth. The curette removed a few small bits of mucosa. Uterine cavity swabbed with pure tincture of iodine. No reaction after the operation. The flow ceased entirely for twenty-eight days, then she had a slight show and had had no return of the menses when she came to my office two months later in perfect health. Since then she has had a normal, though somewhat profuse, period without a return of the metrorrhagia.

These cases are practically identical as regards the absence of any definite explanation for the metrorrhagia, since the presence of cystic ovaries in the first can fairly be regarded as the result, rather than the cause, of the prolonged pelvic congestion.

In both instances the child had an excellent family history and no evidence of any hereditary taint or congenital anomaly. They were both carefully brought up and their environment was excellent. So far as could be ascertained there was no sexual or psychical element in either case, though both children were fully developed at a tender age. It should be added that no abnormality of the ductless glands was discoverable.

There would seem to be two different theories to account for these obscure cases of metrorrhagia, the anatomical and what may be called the bio-chemical. Unfortunately, we have no reliable studies of serial sections of uteri from young girls upon which to support the view that (as French writers affirm), in consequence of some inflammatory process, the normal epithelium of the capillaries is replaced by embryonic tissue, which yields easily on increase of blood pressure with resulting hemorrhage. It is equally difficult to demonstrate anatomically that the musculature of the uterus is so affected that it loses its normal tonicity and ceases to oppose the physiological hyperemia, which thus becomes abnormal.

In his suggestive monograph on *Infantilismus*, Mathes called attention to the fact that normal menstruation is controlled by the contraction of the muscle-fibers of the uterus, and quotes Theilhaber to the effect that when, in consequence of some pathological process (or congenital defect), the smooth muscle is replaced by connective tissue, the vessels are not subject to this control and metrorrhagia follows the regular period. Mathes himself prefers to explain this phenomenon as due to the weakened influence (or non-development) of the sympathetic ganglia in hypoplasic subjects. It seems to the writer as if these inferences were either purely theoretical, or were based on observation of older patients with actual pelvic disease.

With regard to the influence of the ductless glands upon menstruation, we naturally think of the thyroid, the secretion of which seems to be opposed to the ovarian, since experiments in animals have shown that suppression of the former seems to hasten the maturity of the Graafian follicles and hence the menstrual congestion. Thisa also seems to be too theoretical to bear the clinical test, as well as the statement of Klein, that hormones from the internal secretion of the ovary act directly upon the vaso-dilators in the uterine mucosa, causing the menstrual flow. The latter theory is more plausible as an explanation of amenorrhœa in poorly-developed young girls, in whom the ovaries are "hypoplastic."

Mathes (*loc. cit.*) applies the general term "asthenia" to subjects whose pelvic (as well as other organs) are not only mal-developed, but do not respond to those stimuli of the sympathetic system which keep them in a state of normal tonicity, hence he despairs of the value of local treatment of metrorrhagia in such patients. It is all very well to talk learnedly about defective or excessive internal secretion of the ovaries, when we do not as yet understand either its nature or normal amount, except by inference. Certainly no exact knowledge can be claimed as to its influence on metrorrhagia at puberty.

It has seemed to the writer that too little attention has been paid to the well-known intense pelvic congestion accompanying early menstruation in perfectly healthy subjects in our search for unusual and hypothetical explanations.

Every surgeon who is familiar with the appearance of the pelvic viscera during the height of the menstrual wave, as well as every physiologist who has studied sphymographic tracings, will admit that this condition borders closely on the pathological. The idea that the mucosa of the tubes shared in the menstrual flow seemed natural to those who noted its intense hyperemia at this time. Lawson Tait early called attention clinically to the congestion of the normal ovary which may precede and accompany the flow, a congestion often so intense that it has been known to result in ovarian apoplexy, fatal in a few instances. It requires, then, no stretch of the imagination to conceive of such a pathological degree of pelvic congestion in children who develop rapidly and beyond their years, which (through some impalpable and unnoted cause)—anatomical or psychical—expresses itself only in profuse menstrual flow, but in a more or less constant metrorrhagia, the degree and persistence of which is determined by the presence or absence of some local factor.

Sturmdorf shows by a series of careful clinical observations that the known incoagulability of menstrual blood is "due to the presence of an inhibiting substance that is periodically secreted by the corporeal endometrium." "The endometrium," he adds, "is activated to the secretion of this inhibiting substance by a hormone generated in the Graafian follicles." (Functional Metrorrhagia, *Jour. Am. Med. Assn.,* February 14, 1914.)

Goffe's interesting paper (Biochemical Function of the Endometrium in the Etiology of Menorrhagia and Metrorrhagia, *Trans. Int. Cong. Med.,* 1914), deals with the same subject and repays careful reading. The recent literature is appended.

The writer stated at the outset that the class of cases briefly considered is of especial interest to the general practitioner. In order to commend the subject to him, this communication has been condensed as much as possible, many interesting points of purely academic interest not being discussed.

It is evident that every physician may, and does, meet with these little patients, whose prolonged flow causes great alarm to anxious mothers. It is important that he should not make the less serious (but no less reprehensible) mistake of dismissing the metrorrhagia of puberty, as he too often does the atypical bleeding of the menopause to the "care of nature."

While the writer is far from viewing such cases purely from a gynecological standpoint, and urging early resort to the physical examinations of young girls, he does insist that while amenorrhea at (and for two or three years after) puberty may be treated expectantly, persistent metrorrhagia is an indication for careful recto-abdominal palpation. It is assumed that the family physician who has known the little patient since birth has excluded all the hereditary or acquired dyscrasiæ which might account for the bleeding.

Such an examination, in the case of a sensible child, with thin, relaxed abdominal walls, is quite satisfactory to the expert, especially as regards negative evidence. The gynecologist should not claim to detect minor abnormalities in this way. A better way is to examine under anesthesia, when of course he may, with the previous consent of the parents or friends, be prepared to perform any operation which may be necessary. If the hymen is injured it should be repaired at once with a fine catgut suture. It is revolting to think of the rough and inhuman methods which prevailed twenty or more years ago, when the hymen was frequently dissected out entirely in order that local treatment might be carried on more easily. Certain symptoms suggest to the experienced observer a more early resort to local examination than might otherwise be advisable. For example, marked pressure symptoms, especially obstinate rectal hemorrhoids in young girls, suggest the presence of a tumor (such as a dermoid cyst) impacted in the cul de sac, and a profuse and offensive leucorrheal discharge, the presence of infection that has extended to the uterus, to be confirmed bacteriologically.

Just what may be significance of an extensive erosion of the portio in a virgin uterus, without accompanying cystic degeneration or endometritis, the writer is unable to state. Although he has observed it in young girls, who presented no local symptoms, he cannot believe that it is congenital, but must result from some local irritation, possibly uncleanliness or mild infection. In the absence of any discovered cause for the hemorrhage, local or general, the practitioner is thrown back upon the doubtful aid of experimental medicine and must interrogate rigidly the ductless glands, with more or less doubtful results. Organo-therapy must be regarded as both the test and curative agent along this line.

The prognosis, as before indicated, naturally depends upon the actual or supposed cause of the condition. One need not add that this can only be stated intelligently when all the modern aids to diagnosis have been exhausted. Hematology is directly concerned with our subject, and the gastro-enterologist can throw considerable light upon it. We purposely omit further reference to the fascinating field of investigation alluded to in connection with infantilism and asthenia, merely calling attention to the new light thus thrown upon chlorosis, long ago recognized by Virchow as an indication of hypoplasia. To a future generation of medical men these things, now so obscure, will be clearly revealed.

In cases such as the writer cited the prognosis is good as regards the eventual cessation of the metrorrhagia, provided that proper hygienic conditions and environment are maintained, and actual etiological factors are removed. It may seem incredible to this audience, but cases are

recorded in which young girls have actually been allowed to bleed to death and the autopsy has revealed simple intrauterine polypi! Certainly in Case II the little patient was in a critical condition (hemoglobin 40 per cent), when operated upon, so that the family physician feared to give an anesthetic. Why she was cured by the operation is not clear, since the condition of the endometrium alone did not explain the bleeding.

The attendant must accept the responsibility for the lamentable results of "watchful waiting," hence he should not be unduly influenced by nervous and prudish mothers and daughters.

In general the family physician should wisely regulate the entire life of the young girl at the time which Dalché calls *"l'Eruption des premières régles"*—not alone her physical but her psychical hygiene. Unfortunately, at the present day the old-fashioned family doctor who (as Dr. Holmes aptly stated), was intimately acquainted with three generations, has practically disappeared, having become in our large cities a sort of medical purveyor. The pediatrist has taken his place as an adviser in the upbringing of children.

Waiving any desire to enter upon a discussion of the much-vexed question of "sex-talks," "problem-plays," etc., in the education of young girls, the writer would simply state his opinion that this begins with the mothers. It is not for the lecturer to "rob the bloom from the peach" by well-meant but premature advice. It *is* important that every agent calculated to stimulate sexual excitement at the time of puberty, whether the modern dance, improper companions, erotic literature or plays, should be eliminated. Life in the open air, athletic sports, if not too violent, regulation of diet, the care of the bowels, hours of sleep, etc., are all important. The writer has seen too often the evils of forcing girls (especially when they are ambitious) in their studies at a time when this is the worst course that could be pursued. The family physician is in a position to control these matters.

Medication during the establishment of the menses, if indicated at all, will not include any of the drugs which might disturb the equilibrium of the pelvic circulation.

When the metrorrhagia assumes pathological importance hydrastin and stypticin, or better, styptol, in larger doses than are usually given (gr. ii t. i. d.), may control the hemorrhage. Astringent douches (alum) are sometimes beneficial, but there are anatomical reasons why they are both exceedingly distasteful and difficult of use effectively. A combination with strychnine would suggest itself when muscular atony is present. Ergot would hardly seem to be indicated in the presence of the undeveloped uterus of early puberty. At best its use (and that applies to all drugs) is empirical.

While the writer agrees with Sturmdorf that vaso-dilators (especially nitroglycerin) are useful where there is a high blood pressure, he does not feel that they are as useful in the metrorrhagia of puberty as in adults, especially in the preclimateric stage. In the cases reported styptol, always an uncertain drug, seemed to be of least temporary benefit, and in one (with a low pressure) the use of adrenalin chloride was also followed by distinct improvement.

As already advised, an examination of the pelvic organs (preferably under anesthesia) should not be unduly delayed, and this includes diagnostic curettement in most instances in order to clear up the diagnosis. The choice of operation will depend on the severity of the symptoms and the local condition. The writer has not found it necessary to do more than curette. Care should be exercised in making caustic applications to the endometrium, which (like atmocausis) are not absolutely controllable and may cause irreparable injury to the delicate organ in subjects of tender years.

A colleague has met with success in the treatment of obstinate hemorrhage in young women by ligation of the uterine arteries per vaginum, which is practically out of the question in children. The writer can conceive of cases in which explorative abdominal section might be elected (even when the pelvic examination was negative), but it would be a desperate case indeed in which both ovaries would be removed, not to speak of supra-vaginal amputation of the uterus.

SPLENECTOMY FOR SPLENIC ANEMIA.*

Further Remarks Upon a Second Case in a Child.

By RUSSELL S. FOWLER, M.D., F.A.C.S.
BROOKLYN-NEW YORK.

THE patient we have for operation today is a little girl but fourteen months old, weight 14 lbs., 2 ozs. It is unusual to find an enlarged spleen in a child of this age, and still more unusual to have had two cases in such quick succession of this rather rare disease. The first case† in a child of five and one-half years was operated upon April 18. The present case has the following history: For the past two months the baby has been restless and irritable; there is loss of appetite and weight. She has been very constipated. Blood examination, April 23, 1914: Red cells, 3,316,000; color index, 9 per cent; hemoglobin 50 per cent; leucocytes, 30,000; polymorphonuclears, 40 per cent; large mononuclears, 12 per cent; small mononuclears, 38 per cent; many normoblasts and an occasional megaloblast; marked variations in size and staining qualities of red blood cells; moderate variation in shape of cells.

* Clinical Lecture at the Methodist Episcopal Hospital, April 28, 1914.

† Since reported this case has succumbed to a recurrence of the intestinal hemorrhage

FIG. 1.

This case differs from the previous one in that the anemia is not so marked and has not affected the coagubility of the blood. The spleen (Fig. 1) is enlarged to about six times its normal size; the liver is not enlarged; there is some slight evidence of fluid in the peritoneal cavity. Two notches can be felt on the spleen and the spleen is more movable than usual. An incision is made in the outer edge of the left rectus and below the umbilicus up to the costal arch. On account of the age of this patient the diaphragmatic vault is quite shallow, so it is not necessary to extend the incision across the costal cartilages. All bleeding points are secured. It is noted the blood coagulates readily and there is little oozing. The spleen is readily delivered through the abdominal wound, there being no adhesions; the only part of its attachment which is tense is the phreno-splenic ligament. This contains no blood vessels and is snipped with the scissors, thus allowing of ready manipulation of the spleen. The tail of the pancreas, part of the colon and part of the stomach emerge into the wound with the splenic pedicle. A gastroenterostomy clamp is applied to the pedicle at a distance of two inches from the spleen. It is seen there is a small accessory spleen with a very small pedicle arising from the main pedicle (Fig. 2). The clamp is seen to include the tail of the pancreas and part of the stomach. The pedicle is so short it is not possible to ligate it without including some of the tail of the pancreas; it is ligated in sections and cut close to the spleen itself. It is seen that one of the ligatures has included a half inch of the tail of the pancreas; this ligature was only pulled snug enough to control hemorrhage, not to strangulate. The spleen is now cut away. The gastroenterostomy clamp is loosened but left *in situ*. The raw surface of the pedicle is inspected and it is seen there has been an injury to the tail of the pancreas by the scissors in cutting away the spleen. This, as well as the raw surface of the pedicle, is covered over with a bit of omentum lying conveniently in the neighborhood. The diaphragmatic dome is inspected and no bleeding points are found, there having been no adhesions in this region. The wound is closed in layers without drainage, and a tight binder applied. The reason for not using drainage in spite of the injury to the pancreas is that this injury was slight and was almost immediately covered with omentum. The pancreatic duct was not exposed. In this connection Coffey has demonstrated experimentally that ligature of the pancreatic duct with or without surrounding pancreatic tissue did not result in permanently occluding the pancreatic duct, but that regeneration occurred, the duct reuniting in a few days.

Subsequent course: The patient was in the hospital from April 18 to May 27, 1914, making a good recovery. The temperature was irregular for twenty days, then remained normal. The baby was irritable and gave evidence of some pain and difficulty in breathing the first ten days post operative. The condition on discharge was much improved. Blood picture, May 25, 1914: Red cells, 3,430,000; hemoglobin, 65 per cent;

FIG. 2.

leucocytes, 15,000; polymorphonuclears, 20 per cent; small mononuclears, 78 per cent; transitional cells, 2 per cent; considerable polychromasia and poikilocytosis. Occasional monoblasts, megaloblasts, microcytes and macrocytes.

Pathological report: *Gross specimen,* weight 150 grams, symmetrically enlarged, capsule smooth, splenic pulp more firm than normal. There is an attempt at lobulation. A small accessory spleen accompanies the specimen. The microscopic picture is that of splenic anemia. This is a distinct increase of fibrous tissue through the organ with atrophy of the malpighian bodies. White cells in pulp are scanty, lymphocytes preponderate.

SOME THOUGHTS ON THE ATYPICAL PNEUMONIAS OF INFANCY AND CHILDHOOD.*

By EDWARD J. WYNKOOP, M.D.,
SYRACUSE, N. Y.

IN approaching a topic of this kind one always does so with a feeling of hesitancy, as a realization is at once present that no matter how much is attempted there is always a great deal left unsaid or unwritten that is worthy of our careful consideration.

However, occurrences happen in all our lives that bring home to us certain conditions that emphasize diagnostic points. That is, in seeing various types of cases oftentimes unusual symptoms stand out clearly before us and meaning the probable advent of a certain disease.

This is usually so in some atypical forms when the regulation symptoms are not so prominent, but some unusual symptoms predominate and bring emphatically before us the thought that the atypical signs are often a sure indication of some well-known disease.

That is, in clinical work we group some of these unusual symptoms as meaning a certain disease, in which, as a rule, we have been led by text book and journal to believe to be most unusual.

It may be, however, that in the busy rounds of practice our attention has not been called to the unusual features of the disease or we have attached little or no significance to them, but we have waited for the cardinal signs to appear before making a diagnosis, while a careful recording of the unusual manifestations might have led us to a much earlier diagnosis by making us realize the importance of these unusual symptoms and saved us the necessity of completely changing the original diagnosis when the true nature of the disease was determined and when the importance of these unusual symptoms were realized.

There is no disease of infancy and childhood capable of more vagaries than pneumonia, and for that reason I have chosen a few words, dealing with the atypical form.

At this period of life pneumonia presents wide difference in the onset and development of symptoms, and at times the entire course of the disease is the most unusual.

On infectious nature its usual sudden onset is marked by many untoward symptoms. While recognizing the two varieties of pneumonia, broncho and lobar, they are often associated and the border line between them is often difficult to determine.

The object of this short paper is not to go into all the symptoms that might occur in any unusual form of pneumonia, but rather to emphasize two symptoms that are sometimes present, but when present in pronounced form often lead to mistakes in diagnosis; and especially is this true in the atypical varieties of the disease. I refer to vomiting and abdominal pain.

Gastro-intestinal disturbance with pneumonia is oftentimes misleading, and in many cases this symptom so predominates that the chest lesion is easily overlooked in a hurried physical examination.

Vomiting with or without diarrhœa occurs early in many diseases of childhood, and its presence should make us realize that when it occurs we should not content ourselves with assuming that it shows a beginning of simple gastro-intestinal disease.

The presence of vomiting, whether occurring once or repeated, in a child showing symptoms of illness, such as fever, prostration, hurried respiration and pulse, should make us feel that these symptoms may be due to other than a gastro-intestinal upset and that these gastro-intestinal symptoms may signify some other disease.

At the beginning of many of the infectious diseases of childhood we have symptoms to deal with that might be significant of the onset of many diseases, and to ascribe a pronounced symptom as being the sole indication of one disease is a mistake, until by care in history and accuracy in physical examination we are ready to prove our ground.

Persistent or repeated vomiting should always put us on our guard, especially when occurring for more than twenty-four hours and when proper precautions have been taken relating to diet.

There is nothing more distressing than to have a child sick with persistant and repeated vomiting, fever, rapid pulse, little or no cough, possibly diarrhœa ,but everything indicating a gastro-intestinal irritation, fail to respond to ordinary remedies and diet and show, after a few days sickness, the signs of an overlooked pneumonic process.

Sometimes the children do not seem to be stricken suddenly, but gradually develop temperature, fever, vomiting, prostration, little or no increase in respiration and pulse rate; and while the child does not appear to be very sick

* Read at the Annual Meeting of the Fifth District Branch of the Medical Society of the State of New York, at Oneida, October 2, 1913.

all food is vomited for several days, and the gastro-intestinal symptoms are so pronounced that pneumonia, even when cough is present, is easily overlooked.

Then, too, negative chest findings may be persisted in for several days, so that only by rigid exclusion of ordinary gastro-intestinal and other diseases is the true nature of the disease arrived at.

Persistent vomiting may occur not only in a true gastro-intestinal upset or pneumonia, but may be an early symptom of tubercular meningitis, and this should again make us watch out, especially as tubercular meningitis is apt to be acute in children under two years of age.

Otitis media, pneumonia, typhoid, pyelitis, tubercular meningitis often occur with persistent and early vomiting and the child appears sick, and yet in the onset the physical findings are often negative.

It is not that I wish to have the idea go forth that gastro-intestinal symptoms are not be to found due, as a rule, to a true gastro-intestinal disturbance, but the point I wish to emphasize is this: in young children, irritable stomach, vomiting, whether moderate or persistent, with possibly diarrhœa accompanied by other symptoms of illness, and when physical signs are difficult to find, should sharpen our diagnostic faculties and make us more careful not to overlook conditions that could be detected with average care.

It may be that time is necessary for the development of the symptoms, but by being persistent and thorough in a physical examination many mistakes could be avoided.

Many times in cases dragging along in an uncertain manner the true nature is discovered only after valuable time has been wasted.

In these cases of pneumonia showing atypical forms when gastro-intestinal symptoms are marked, experience has taught me that very often some complication, as an empyema, is quite apt to develop.

Abdominal pain in the pneumonias of infancy and childhood has not received a great deal of attention, and in searching many text books quite a few have failed to note its existence.

Most authors refer to it, but only a few emphasize its significance.

Herrick reviewed the literature very thoroughly, and in his article gave the probable reason why abdominal pain exists.

He says: "The lower six intercostal nerves—the anterior division of the dorsal nerves—supply the abdominal wall as well as a part of the parietal and diaphragmatic pleura.

An irritation from inflammation or pressure in the course of one of these nerves might readily cause a pain that would be referred to the distribution of this nerve, *i. e.,* to the abdominal wall.

In cases of pleurisy how much of the irritation is produced by true neuritis is perhaps uncertain. By many intercostal neuritis is regarded as of common occurrence in pneumonia and pleurisy.

The eleventh nerve is distributed over the iliac region. Pain here would easily make one think of the appendix if on the right side, or if on the left perhaps of the rarer left-sided appendicular pains.

This close anatomic nerve connection between the abdominal wall, the pleura and the intercostal muscles is indicative of a physiologically intimate relationship.

Hilton's well-known law declares that the interior of a joint, the muscles moving it and the skin over the muscular insertions are supplied by the same nerve trunks.

This law also applies to the pleura, which, he says, can be compared to a joint.

And the muscles to be regarded as moving the joint are not alone the intercostals, but the abdominal as well.

Not only may pain of pleural origin be referred to the abdomen, but in their effort to lessen pain and to give the joint, *i. e.,* the pleura rest, the muscles remain quiet and may even be tense.

One can readily understand how the tenseness of abdominal muscles, added to pain, may be deceptive because of the close resemblance to the phenomena of abdominal disease.

And how strikingly like the picture of addominal inflammation may be the combination of pain and rigidity when chilliness, fever, rapid pulse, etc., are also present.

There is still another possible explanation of some of the abdominal disturbances that are seen in pleurisy and pneumonia.

The phrenic nerve in its course through the chest lays itself open to the attack of a pleurisy, involving the pericardial, diaphragmatic or costal surfaces.

This nerve is not solely motor.

Irritation or inflammation of this nerve, as in pleurisy, may perhaps be an explanation of some of the cardiac and gastric disturbances, the collapse and meteorism because the phrenic has communication with the vagus and the splanchinics.

The halting movement of the diaphragm as well as pain referred to the epigastrium and hypochondium may likewise be due to phrenic disturbance.

It is not necessary to assume in cases of this sort that the inflammation is in the diaphragmatic pleura, *i. e.,* in the part of the pleura anatomically nearest to the abdomen, though undoubtedly this part of the pleura is often inflamed.

Rohrer calls attention to the frequent occurrence of inflammation of the diaphragm itself, and believes that to this is due in part the stitch pain, as well as the pain in the abdomen often complained of, especially in children.

Head, who has done so much to explain visceral pain, believes that in certain cases there may be abdominal pain when the lung alone is involved without the pleura, *e. g.,* in bronchitis, tuberculosis or broncho-pneumonia.

He says that through the communicating branches of the seventh, eight and ninth dorsal nerves, which branches supply the lungs, impulses originating perhaps in a small inflammatory pulmonary focus may be carried up to the posterior root ganglia.

From the abdominal wall normal impulses pass from the epigastric and hypochondriac regions to these same ganglia.

If, through the abnormal impulse coming from the lung, the ganglia have become disturbed in their function, the normal impulses from the abdomen may be disturbed, *i. e.,* misinterpreted, into painful expressions.

Whatever may be the correct explanation of this abdominal reference of the pain in thoracic disease, the fact that such pain may occur should be clearly recognized by both physician and surgeon.

While infrequent it is more than a curiosity, and it is not so rare that does not deserve a place in the symptomatology of these diseases."*

It is not an unusual feature of pediatric practice to see the children taken sick with temperature, rapid respiration and pulse with or without cough, vomiting or diarrhœa, showing such severe abdominal pain that a diagnosis of appendicitis, peritonitis or some other abdominal complication is frequently made.

The abdominal pain is intense and frequently of such severe quality as to be very misleading.

The clinical picture oftentimes resembles peritoneal irritation, and in little children who cannot describe their feelings the abdominal signs are difficult to fathom.

These cases are not always easy to diagnose, but abdominal pain does not mean by a long way abdominal disease.

As knee joint pain is present in hip joint disease, so is abdominal pain sometimes present due to an inflammed lung or pleura.

The abdomen in pneumonia may show a tenderness to touch, but is not resistant to the firm pressure that is found in appendicitis or peritonitis.

The abdominal pain is more frequent between the ages of three and seven, but may occur in much younger children.

Take, for instance, the picture of a child suddenly stricken with vomiting, fever, abdominal pain, rapid pulse and respiration with the absence of any positive signs in the chest a diagnosis may be a difficult matter.

However, fortunately signs of chest involvement can be discovered by a careful physical examination in many of these cases and the real cause of the trouble is located.

In these cases, too, when the pneumonic process is less marked and slow in developing, it has always seemed to me that complications were to be looked for and in the majority of cases an empyema has occurred.

To many of you this paper seems rather commonplace, and I realize nothing new has been presented.

It has been my desire to call attention to the fact that vomiting and diarrhœa or vomiting alone occur frequently as an early symptom of other diseases than the gastro-intestinal, and that oftentimes the symptoms are very persistent in atypical pneumonias.

Abdominal pain is present in a good many disturbances, but its advent should make us look elsewhere besides the abdomen for the cause.

We find severe abdominal pain in peritonitis, appendicitis, intussusception and sometimes in ordinary colic, but like vomiting we should be most thorough in the physical examination before arriving at our conclusion.

There is often great difficulty in obtaining from the parents of sick children an accurate history.

The distressed mother, frequently overworked, often hates to admit that the child has been ailing a few days before the physician was called in, or many times owing to her manifold duties she has no idea of the time when the first symptoms began to appear.

Then, too, on account of seeming neglect the parents may not give the true length of time the child has been sick or the advent of the symptoms.

The dread of expense, too, may be another reason why the doctor has been called late, and the history that is then obtained may be very inaccurate.

For this reason the physical examination of the child must be carried out with the greatest care and accuracy.

Too much emphasis cannot be placed on a careful, accurate, painstaking, physical examination, and this means patience as well as time.

Even then an accurate diagnosis may be extremely difficult and sometimes almost impossible.

The caution I wish noted is, not to be led astray by any group of symptoms, typical or atypical, but to have the physical examination thoroughly carried out in every detail in every case.

There is nothing more startling than to be called in to see a child with a history giving evidence of some abdominal condition with a continued vomiting, diarrhœa, abdominal pain, no cough, but fever, etc., and then on physical examination find an inflammation in the lung, while everything pointed before the physical examination to some abdominal disease.

Then as we sift things out, go back over our history, pick out the golden thread here and there of accuracy, we see plainly enough, if we had only seen, where we have been misled.

After all it is the constant hammering away that counts.

The constant attention to small details in diagnosis, the taking of proper time to make the physical examination; one that will stand the test.

The fight against hurry, carelessness and inaccuracy must be constant and never wavering.

* Herrick,, *Journ. A. M. A.*, August 29, 1913.

Then and only then can we hope to correct errors in diagnosis.

Discussion.

Dr. T. Wood Clarke, of Utica: I am especially pleased to have been asked to open the discussion on this paper of Dr. Wynkoop's, because in writing this paper Dr. Wynkoop has mounted a favorite hobby of my own.

I am quite sure that if I had been invited to present a paper on atypical pneumonia in childhood I should have devoted my entire time to reversing the well-known maxim of Sir William Osers, "When a man complains of his heart look first at his stomach." I should have made as my text, "When a child complains of a pain in his stomach be sure to look at his right lower back."

The duties of the consulting pediatrist may be grouped under three heads, and under one or other of these will be found the considerable part of his consulting work. In summer he tries to prevent the babies with summer complaint receiving milk. In the fall he tries to get these same babies back on milk and away from the multitude of nefarious patent poisons which they have been given during the summer. In the winter and spring he diagnoses pneumonia.

I do not think there is any one acute disease of childhood in which the general practitioner so often feels at a loss, loses his confidence in himself and calls for help from the pediatric specialist as in undiagnosed atypical pneumonias. In the adult the diagnosis of pneumonia is, as a rule, a comparatively simple matter. There is usually something about the grown man with pneumonia which tells you from across the room what his trouble is. In childhood, on the other hand, the onset is often so insidious and the initial symptoms so often point so directly toward some other disease that it is only by the exertion of the greatest care, by careful routine examination and by going on the principle that every child with a fever must be considered to be guilty of pneumonia until an absolute alabi can be proved, that mistakes are avoided.

Possibly the most common form of atypical pneumonia is the pneumonia pseudo-meningitis. Certainly next in frequency is the pneumonia pseudo-appendicitis. But whether the symptoms of onset resemble those of meningitis, appendicitis or gastroenteritis it must always be remembered that they very frequently in no way resemble the text book symptoms of pneumonia.

It is exceptional for a child with pneumonia to complain of pain in the chest during the first few days. The temperature is usually high, but generally has much more marked variations than one expects in pneumonia in the adult. I have seen cases of frank lobar pneumonia in the child in which the family have assured me on the fourth or fifth day that the child had not coughed once since he had been ill. The respiratory rate may be little, if any, increased.

What then are the symptoms of onset of pneumonia in infancy? Fever, always; flushed face, usually; restlessness, excitability and talkativeness; usually a slight expiratory catch in the respiration, hardly worthy the name of an expiratory grunt; and perhaps most significant of all, a suggestion of dilation of the alae nasae There may be all the symptoms of meningeal irritation and there is most apt to be abdominal pain.

My attention to abdominal symptoms in pneumonia in children was first attracted by the coincidence that when resident physician in a hospital, in the course of six weeks four children were sent to the wards with the diagnosis of appendicitis, in all of which in the course of an examination of the chest preliminary to operation I discovered consolidation at the right base of the lung. Since then I have naturally had my ears and mind wide open for signs of pulmonary lesions in all cases showing symptoms toward appendical or peritoneal inflammation, and this watchfulness has stood me in good stead. About a year ago I was called to the home of a member of our Jewish population, and found a child sick, with high fever, abdominal pain and a markedly distended abdomen. The child screamed if the abdomen was touched and the walls were as hard as boards. At first glance it was a classical case of peritonitis, and I was informed by the distracted parents that five different doctors, naming among them two of our very best surgeons, had seen the child and insisted on immediate operation as the only hope of saving the child's life. While talking to the parents I kept my hand lightly on the abdomen and noticed that when the attention was distracted the walls softened considerably. When I turned the baby over to examine the back the family assured me that the trouble was all in front and volunteered the information that none of the other doctors had disturbed the child enough to turn him off his back. At the right base of the lungs was a consolidation as large as a silver dollar. By a little patience, a good deal of distraction and a great deal of soothing I so quieted the child that before I left, the palpating hand on the abdomen could be pressed firmly against the spinal column. The recommendation to the family physician that the operation be deferred was accepted and the next night the child recovered by crisis. The only sign from the front to suggest pneumonia in this case was a tiny trembling of the alae nasae.

More recently I was called to see a boy of eight who had been treated for three days by a good man for intestinal autointoxication with oil and high colonic irrigations. The symptoms here were fever, flushing, abdominal pain and nervous excitability. A few crepitant rales and a minute area of very distant blowing breathing at the right back made me suspicious. I gave a guarded diagnosis and the next morning, though the temperature had fallen to normal during the night, there was a good-sized area of loud tubular breathing.

The diagnosis, however, is not always as simple as in the cases I have cited, for the simple reason that, though one may suspect pneumonia, it some-

imes happens that the most painstaking physical examination fails completely to show the location of the lesion. I have seen cases in which nothing more than an indefinite impairment of the percussion note, not in itself marked enough to be dependable, was all that could be found until after the temperature had fallen to normal, when finally the areas of consolidation appeared. When there are no signs in the lungs and all symptoms point to the abdomen the diagnosis is far from simple. In such cases a leucocyte count and an urine examination may give great aid. A leucocyte count of over thirty thousand in a child, in the absence of a leukemia, is most suggestive of pneumonia, as an abdominal lesion rarely carries the count above that figure, and a pneumonia usually does. If added to the high leucocytes one finds that the urine shows a marked reduction in the chloride content one can be almost positive in one's diagnosis of pneumonia. In one case a few years ago in which I was called in consultation in a suspected case of meningitis I made the diagnosis on fever, leucocytes and absence of chlorides, without a sign in the lung. The diagnosis was confirmed by the subsequent development of an area of consolidation and recovery by crisis.

I wish to thank Dr. Wynkoop for bringing this important subject of the abdominal symptoms of pneumonia in children to our attention. It is a trap lying in wait for every practitioner every day of his practice. It is a trap which may be avoided only by considering the possibility of penumonia in every febrile attack in children, especially when the symptoms point to the abdomen and by careful, painstaking daily examination of the chest in every febrile case, no matter to what part of the body the symptoms point.

THE PLEURAL LYMPH FLOW; CAUSES OF ITS INCREASE AND DECREASE.*

By ALBERT H. GARVIN, M.D.,
RAY BROOK, N. Y.

THE accumulation of fluid within the pleural space is of interest to the clinican in a pathological sense only as an occurrence and complication in the course of an underlying major illness or a collection of fluid caused by a mechanical obstruction or occurring apparently as an independent local infective manifestation, the portal of the infection not being in evidence at the time.

Varying modifications to the standard therapy of pleurisy with effusion arise periodically to be added to the time-honored effective procedures. These modifications run their course, add a little to the knowledge of the underlying physiology and are then dropped, to be again revived and modified and perhaps perfected. Artificial pneumothorax has gone through such a cycle and is now laboring under the probable handicap of an insufficient knowledge of the actual physiology involved. It is to be supposed that within the pleural space there is a constant lymph flow; that the fluid, as in the lesser lymph spaces, has a definite portal of entry and a fixed way of exit, or that Nature by a well balanced hit or miss method has arranged an inflow and an outlet so perfect that no detectable stream flow can be determined.

The accumulation of fluid within the pleural space means the certainty that the secretion of the fluid into the pleural cavity is increased or that the elimination is diminished, the one as compared to the other, and further that the increase and the outflow may both be relatively increased above or decreased below the normal rate, or that the outflow may be stopped for all practical purposes for the time being.

It is relatively simple to give a correct guess as to which of these factors predominates in a clinical case, but it seems at present impossible to say where it occurs or to more than explain a given therapy, except by the simple statement "it works."

A review of the experimental work upon the pleura to enlighten this question might explain the effectiveness of our clinical course and further might explain the failure at times when the procedure seems to be the approximate same. The same thing done in two apparently parallel clinical cases giving diametrically opposite results may be not so much the error of the technique of the doing of the thing as the unconscious disobedience of an unknown physiological law which has never been emphasized in the application of the treatment. Further, the repetition of a procedure in the same patient in apparently the same condition and in exactly the same way may bring this disappointing experience.

The following review has the purpose of presenting the direction of the pleural lymph flow and an emphasis upon some of the factors that vary it as an explanation to this physiological law.

Anatomically the entire wall of the pleural cavity (the serous covering of the lungs, the mediastinum, the breast wall and the diaphragm) is covered with endothelium, which consists of polyhedral formed cells more or less regularly arranged. In occasional places the endothelium is radially or concentrically arranged. Within such places there are gaps or stomata which are in connection with the lymph streams (von Recklinghausen). Below the loosely resting endothelium there is a stroma, which consists of a thin layer of elastic and connective tissue and supports the numerous blood capillaries and lymph vessels. The lymph vessels empty themselves into the thoracic duct or the right lymph duct, coursing with the blood vessels which supply the parietal pleura in the outer wall and with the bronchial vessels from the pulmonary pleuritic area to the region of the bronchial artery.

Below the diaphragmatic pleura are found lymphatic sinus spaces, which communicate on the right side with the right lymphatic duct and on the left side ultimately into the thoracic duct.

* Read at the Annual Meeting of the Medical Society of the State of New York, April 28, 1914.

The parietal lymph vessels course with the intercostal blood vessels in greater part and empty into the thoracic duct or the right lymphatic duct, as the case may be. The superficial placing of the azygous vein on the right side, has been emphasized as offering an opportunity for mechanical pressure. Hence, delayed absorption from the parietal pleura in the area drained by this azygous.

In passing it may be mentioned that the parietal pleura is the sensitive zone, being intimately supplied with sensory nerves. The pulmonic pleura is practically insensitive and very sparsely innervated. Within the lung bronchial lymph glands are projected to the fourth bifurcation of the bronchus, where macroscopic lymph glands cease and the lymph vessels course with the corresponding bronchial vessels.

It is quite probable that the outer centimeter of the lung drains in greater part to the pulmonic pleura and that only a minimum resorption from the pulmonic pleura takes place through the pulmonic interlobular stomata.

The essential stream flow of lymph is from the lung to the parietal wall. The rate of this lymph flow under normal conditions is exceedingly hard to determine, as we have only the momentary glances at pleural resorption that animal experiment gives us, and which is necessarily complicated by all of the factors of selective cellular activity when foreign bodies or foreign salts are introduced to thus measure the flow. The flow must be very slight under normal conditions. The lymph flow from the major lymph vessel of a leg at rest is practically nothing. The flow occurs only on exertion or on exercise. As the lung is always under periodic exercise the flow is continuous, though slight.

Experiments that determine the rate of the flow have the objection of the introduction of some foreign substances whose periodic disappearance is measured, and thereby the rate of the flow determined.

Such experiments introduce factors that are not physiological. The varying rate and volume of the flow in a pathological condition are well known. The parietal pleura resorbs foreign bodies and fluids with a certain regularity and amount in a definite time corresponding to the size of the animal. Diffusion and osmosis are brought into consideration as casual factors. Hamburger has especially studied and emphasized this. As a further factor of resorption the mechanical breathing movements are important. Through these movements fluid is constantly pumped into the expanding and contracting intercostal lymph streams and the pressure of the evolving lung assists as a factor. Further, through the continual shoving of the pleural leaves upon one another the entrance of the pleural content is assisted into the stomata. The rapidity of the blood and lymph streams in the thoracic wall are also factors that must exercise an influence upon the rapidity of absorption.

The inside of the pleura contains a clear, light, opalescent, lymph-like fluid, which spreads itself as a capillary layer between the parietal and visceral pleural leaves. It is a small but always measurable quantity, varying with the size of the animal. The pleural fluid has essentially two important functions. It prevents the endothelium of both surfaces from constantly rubbing upon one another during respiration, preventing thus the intimate adhesive friction, and it gives further, as Brauer has emphasized, a definite adhesive power between the two pleural leaves so that the concentric pulling effect of the lung elasticity is overcome and the lungs remain held to the pleural wall.

"So-called negative pressure (Donders) presents no real aspiration effect upon the surfaces and is only brought to light when the two serous surfaces are separated."

The introduction of definite substances—milk blood, coloring material, india ink—are very soon demonstrated in the lymph vessels of the pleural walls (von Recklinghausen, Dybowski, Klein, Fleiner and others). Grawitz was able to demonstrate particles of india ink which were introduced into the finest bronchi in the intercostal pleura, and Grober demonstrated that india ink introduced into the pleural cavity was found in the lymph streams of the whole pleural equipment with the single exception of the pulmonic pleura. We have, therefore, the presentation that in the pleural cavity there is a fluid stream which is directed from the lungs to the outer parietal walls.

If it is so that the major lymph stream of the pleural space is directed from the pulmonic to the parietal pleura, in what manner and for what reasons is the flow increased or decreased? To illustrate these points Meyerstein has attempted to separate the various factors by the experimental introduction of artificial pneumothorax. He attempted to explain the favorable effect of a pneumothorax on a physiological basis, and his experiments support the previous mentioned experimental data.

The direction of the lymph flow may be accepted as proven. Meyerstein further attempted to determine the rate and volume and the factors affecting the rate and volume.

The absorption time rate for foreign salts introduced into the pleural cavity is 20 to 27 minutes for their urine elimination and equals subcutaneous injection, but is not as quick as pulmonic or intravenous, parallels the peritoneal injection and is naturally quicker than stomach introduction. In artificial pneumothorax, which occupies no more than half the pleural volume, or where normal serum is introduced to no greater extent than half of the pleural volume, the pleural rate of absorption remains approximately the same as normal. When an approximately full pleural volume is introduced, however, by any method, whether by fluid or air or open pneumothorax, a very different change

takes place, in that the elimination or the absorption time is more than doubled or absorption is very much delayed. The explanation of this delayed resorption time must rest upon the varying vital and physical factors caused by this alteration, but it is very interesting to note that the complete separation of the pulmonic pleura from the parietal immediately doubles the absorption time. Therefore the mere approximation of the pulmonic pleura to the parietal is a very important factor in absorption. Numerous experiments have been done to show that absorption is not dependent solely upon mere physical phenomena, such as osmosis and diffusion, which play a minor part. Hamburger, Heidenhain, His and others have expressed themselves that selective cellular activity or other factors than simple physics enter into the explanation of absorption.

In the introduction of air to the extent of half volume, the parietal and visceral pleura remain in contact to a greater than half their area. With the introduction of the same volume of fluid (normal serum) the pleural separation is much greater.

With the approximate introduction of normal serum to the full pleural capacity, as compared with the full capacity introduction of air or gas, the amount of pleural separation is approximately the same, although perhaps slightly greater in the case of fluid. What result then has the forced entrance of air or fluid on the mechanical factors of absorption, on the breathing mechanism and on the circulation in general, and in particular on the circulation of the lung. There are numerous investigations regarding the circulation of the lung itself in this condition, but no uniformity of opinion.

There is a difference between partial collapse, collapse and compression.

The circulation rate and volume has a very intimate relation to the lymph rate and volume. In very large pneumothorax or large fluid collection within the thorax, the general body arterial pressure remains the same, whereas the body venous pressure increases. This quite probably is a factor in delayed resorption.

The introduction of fluid as compared with air damages the mechanical factors of resorption relatively more, in that the pleural surfaces are separated to a greater extent and the mechanical assistance that the contact of the two pleural surfaces gives is thereby to a greater extent removed.

Meyerstein used potassium iodide per mouth to determine the rate of inflow into the pleural cavity in varying states of lung collapse or compression, and the rate of elimination under the same states of collapse or compression when introduced into the pleural cavity.

The rapidity with which iodine presents itself in the pleural cavity can be employed as a measure of the secretion speed. His experiments show that the iodine appeared in the pleural cavity quite as promptly as in the urine. That the introduction or insufflation of the pleural surfaces to the extent of half their volume had little or no effect, whereas the introduction of a greater quantity, approximately the full capacity, progressively delayed the elimination.

Therefore, the relative quantity of secretion is correspondingly diminished, the smaller the lung volume; but it is very hard to gauge the mathematically against the decreased parietal absorption. He attempted to further measure the secretion activity by the hypertonic solution method, using grape sugar as a reagent.

In such a method the osmotic factors are naturally much exaggerated. One may measure the extent of the exudation that is caused thereby, and further determine the amount and rapidity of the removal of the foreign substance.

Briefly, the accumulation of the fluid is approximately the same, due probably to the osmotic irritation and remains approximately the same, short of a complete lung compression. At this point, the osmotic laws are apparently quite suspended, and the fluid volume does not increase, but rather tends to remain stationary or decrease and further the diminution in the foreign substance is progressive, probably depending upon the osmotic factors in all of the varying states of compression. This, therefore, weaves into the previous experiment evidence supporting the fact that the greatest secretion is from the pulmonic area; the greatest absorption from the pleural area. The circulation factors in complete compression are probably very imporant.

Briefly summarizing, it appears safe in a purely physiological sense to interfere with the pleural surfaces to the extent of half their volume without apparently disturbing the normal lymph stream to any appreciable extent; that a separation of the pleural surfaces to an extent greater than this by whatever method is apt to throw out of balance some of the factors that regulate stream flow; that the relatively same volume of fluid separates the pleural surfaces to a greater extent than the same volume of air or gas, and that the reduction of the fluid content within the pleural space may bring about the readjustment of the two pleural surfaces in such a way that their normal physiology again operates effectively.

This explains the rapid disappearance of fluid in some pleurisies with effusion after needle puncture and slight aspiration.

The chief present interest in physiology of the pleura exists in the application of lung collapse or compression in the treatment of pulmonary tuberculosis. Here the so frequent pleuritic inflammatory involvement complicates the clinical picture, and so can interfere frequently with the normal physiology, but in cases where it does not, this factor should be considered.

The size of the compression, the extent of the separation of the two pleural surfaces beyond the safe limit may in itself throw out of balance the mechanical factors that regulate and balance the stream flow.

BIBLIOGRAPHY.

1. Grober, Die Resorptionskraft der Pleura. Zieglers Beiträge 1901, Bd 30, S. 267.
2. Dybkowski, Uber die Aufsaugung und Absonderung der Pleura. Abhandl. der sachs. Gesellschaft der Wissenschaften, math.-physikal. Klasse. Leipzig, 1866, cit. nach Grober (cf. 19).
3. Fleiner, Resorption korpuskularer Elemente durch Lungen und Pleura. Virchows Arch. 1880, Bd 112.
4. Grawitz, Zur Physiologie und Pathologie der Pleura. Berl. Klin. Woch. 1897, Nr 29, S 621.
5. His, D. Arch. f. klin. Med. 1906, Bd 85, S. 169.
6. Meyerstein: Experimentelle Untersuchungen über die Resorption und Exudation bei kunstlichem pneumothorax. Beiträge zur Klinik der Tuberculose, Bd 24, Heft 1, S 19.

SURGICAL DIAGNOSIS AND AUTOPSY FINDINGS.*

By H. G. WEISKOTTEN, M.D.,

(From the Department of Pathology, Syracuse Medical School.)

SYRACUSE, N. Y.

MANY general practitioners feel that the pathologist carries on his work behind a heavy veil as it were, closeted by himself and beyond the reach of the rest of the profession. There is, perhaps, some justification for this feeling inasmuch as the work of the pathologist is of a very technical nature, and his work with which the general practitioner has practically nothing to do after his graduation from medical college. It will, perhaps, be of some interest to speak rather briefly of this work; to take up the various steps taken in making diagnoses from tissue removed at operation.

In some of our hospitals there are pathological internes whose duty it is to care for specimens immediately after removal. In the other hospitals and in cases outside the hospitals tissue for examination should be wrapped in sterile gauze wrung out of sterile water and sent to the pathologist within an hour. Many specimens are received at the pathological laboratory which are so much dried that they are unfit for pathological examination. This as a rule is due to carelessness on the part of nurses or internes. If it is impossible to get the specimen to the laboratory in a fresh condition it should be placed in 10 per cent formalin and sent to the pathologist as soon as possible.

If formalin is not available 95 per cent alcohol may be used. Upon being received in the laboratory a careful microscopic examination is made of the specimen and a description of it written. Blocks are cut which to the mind of the pathologist will show best the pathological condition present. These blocks of tissue are first placed in a fixative.

Fixatives are substances which will faithfully preserve the tissue elements and pathological products and the chemical properties peculiar to those elements or products. There are a large number of fixing reagents, many with special advantages but for routine work alcohol, formalin and Zenker's fluid have been found to be the most practical.

With alcohol and formalin fixation the tissue is fixed for four to six hours. It is then dehydrated, being placed in two changes of 95 per cent alcohol for two hours each, then in absolute alcohol for two hours to complete dehydration, after which it is placed in a solution made up of equal parts of absolute alcohol and ether for two hours. The tissue now being thoroughly infiltrated with absolute alcohol and ether takes up rapidly a 6 per cent solution of celloidin in absolute alcohol and ether in which it is left for twelve to twenty-four hours, after which it is placed in a 12 per cent solution of the celloidin for two to four hours. This process is termed embedding. Embedding consists in employing a substance to infiltrate the tissue thoroughly and to hold the different parts in proper relative position even when cut in the thinnest sections possible. The two embedding substances used are celloidin and paraffin, celloidin being used for routine diagnostic purposes. The blocks of tissue are now mounted on vulcanized fiber blocks and covered with the 12 per cent of celloidin and exposed to the air until the surface hardens a little. The fiber block to which is now firmly fixed the embedded block of tissue is placed in 80 per cent alcohol for a number of hours which hardens the celloidin so that sections six to eight microns thick can be cut without tearing.

The sections are cut from the block of tissue by fixing the vulcanized fiber block in the clamp of a celloidin microtome. In the microtome which we use in the laboratory the knife in a fixed position is drawn across the surface of the block of tissue; the block of tissue being raised by a very fine adjustment each time a section is cut. The sections are lifted from the microtome knife with a camel's-hair brush and placed in 80 per cent alcohol. The sections are now ready for staining. Many different stains, each with special advantages are used in the pathological laboratory, but for routine work hematoxylin and eosin have been found to be the most practical. It would not be worth while to take up here the various steps taken in the staining process. After staining the sections are mounted in xylol balsam on a slide, covered with a coverslip, labelled and are then ready for microscopic examination. Thus the entire process consumes twenty-four to thirty-six hours. If the tissue to be examined consists of bone or calcified tissue it must be decalcified before cutting by placing in 5 per cent nitric acid for several days. The diagnosis is therefore delayed in these cases as it is in cases of Zenker fixed-tissue, owing to the longer time required for fixation and subsequent washing in running water.

In arriving at a correct pathological diagnosis one of the most important aids is a clinical history of the case. Important also is the relation of the specimen in the body, condition of the

* Read before the Syracuse Academy of Medicine on January 21, 1913.

regional lymph nodes and any other unusual conditions noticed at operation. Were a pathologist simply a microscopist, simply a histologist, this information might not be essential, but a pathologist, as a diagnostician, should have all available information before making a diagnosis. It is of the utmost importance that any specimen removed for diagnosis should come from the diseased part: if a sinus, a block taken from the wall of the sinus; if an ulcer, a block taken from the edge of the ulcer, including the floor; if cervix, a block from the affected portion; if curettings from the uterus, they should include curettings from all portions of the uterine cavity. Many times the pathologist has been charged with a faulty diagnosis when the specimen did not include tissue from the lesion itself. If the object of pathological examination is the advancement of medical science and the benefitting of the patients, that end can only be reached by the hearty co-operation of the general practitioner and the laboratory man; if the object is other than this the examinations are not worth while.

Autopsy Findings.

The result of autopsies performed by the pathologist are often more or less unsatisfactory to the general practitioner. There are several reasons for this:

First.—Many times no pathological condition is revealed as a result of the autopsy. Yet the patient with or without preceding clinical symptoms died and certainly something caused death, something which the pathologist is unable to reveal in the autopsy room or even after microscopic examination of the tissues. The number of these cases is decreasing somewhat, and will, undoubtedly, continue to decrease as our knowledge of pathology increases. For the present it must be admitted as a fact that it is possible for changes to take place in cells which can be recognized by abnormal functions and reactions only, there being no apparent change which can be discovered by either microscopical or chemical investigation. The red blood corpuscles of an animal which are immunized against the hemolytic action of a foreign serum show no morphological change and yet they are so altered as to resist the disintegration which under the same conditions takes place in the corpuscles of a non-immune animal.

Secondly.—The cause of death or the various pathological conditions present in many cases cannot be elucidated until after the microscopic examination of the tissues which takes place at a latter date. This is especially true in lesions of the nervous and renal tissues. The pathologist alone, as a rule, profits by this microscopic examination, yet we would gladly have the general practitioner follow the investigation in the laboratory. In these two classes of cases the doctors leave the autopsy room dissatisfied with the work of the pathologist, and naturally so. In the first class of cases the pathologist is certainly incompetent to cope with the situation, but in the second class, if the cases are followed to the laboratory, both the general practitioner and laboratory man will profit thereby.

Thirdly.—There is a class of cases in which conditions diagnosticated antemortem are not found at autopsy and fourthly cases in which pathological conditions not diagnosticated antemortem are found at autopsy.

I will not endeavor to take up in this paper any of these mistaken diagnoses. Many of the physicians are unjustly ashamed of their mistakes and there is a sentiment amongst some of the men that there is a tendency for the pathologist in his autopsy report to belittle them in the eyes of their fellow practitioners or their students. This feeling should not prevail. It is too narrow an attitude for a medical man to assume. In Boston, Dr. Cabot tells them that 16 per cent of their diagnoses of acute nephritis are correct, 52 per cent of their diagnoses of miliary tuberculosis, 39 per cent of their diagnoses of acute endocarditis and the men invite these criticisms, if you will call them such. In these attempted correlations of clinical symptoms and autopsy findings the most of the benefit is to the general practitioner, not to the pathologist. Here again I would say that if the object of autopsies on our hospital patients is the advance of medical science and the salvation of mankind let us enter into them with enthusiasm, and if their object is not this then they are not worth while.

INTRA-OCULAR SARCOMA.*

By WALTER BAER WEIDLER, M.D.,
NEW YORK CITY.

SARCOMA of the uveal tract is the most common form of tumor growth found in the eye, and grows as a rule without any apparent cause or reason. From the collected studies of this form of tumor, by such men as Fuch's, Collins and Lawford, Wood and Pusey, Kerschbaumer, Knapp and Oatman it may be said to occur about once in 1,700 patients.

This, however, must be considered only in the light of an estimate because it is impossible to determine exactly the frequency of its occurrence.

In this brief paper we will consider only one phase of the question of intra-ocular sarcomata and that is "its course."

This has been divided into four different stages:

I.	Preglaucomatous,	Optic nerve or orbit
II.	Glaucomatous,	
III.	Etra-ocular extension.	
IV.	Metastasis,	Vicera. or brain.

In the earliest or *preglaucomatous stage* there

* Read at the Annual Meeting of the Medical Society of the State of New York, April 28, 1914.

are usually no symptoms of irritation or pain, and upon the location and size of the growth will the amount of visual defect depend.

If the growth is posterior to the median line of the globe, it is usually possible for one to mark out an area of scotoma corresponding to the size of the tumor.

When the tumor is anterior to the median line of the globe, there is usually no defect of vision demonstrable and not until the tumor grows to a considerable size, or a detachment of the retina has taken place, will the patient be aware of the presence of any ocular trouble.

The preglaucomatous stage may extend over a period of months, rarely lasting over a period of a year.

Second Stage.—The stage of *glaucomatous* symptoms is quite frequently accompanied with signs of inflammation. A great many of these eyes having sarcomatous growths never develop glaucomatous symptoms. If, however, the growth sets up inflammatory symptoms, glaucomatous tension usually accompanies the onset of the inflammation or follows very soon after.

It seems safe for one to say, in regards to the etiology of the increase of tension in the eyes with sarcomata, that it is not always due to the same cause in each case.

In some of the eyes in this series, there were no symptoms of inflammation present but the location of the growth was a sufficient cause to explain the presence of increased intra-ocular tension.

The cause of the increase of tension in many of the cases was purely mechanical. Being due either to direct pressure upon the angle of the anterior chamber or the pushing forwards of the vitreous, lens and iris and thus causing a blockage of the angle and the canal of Schlemm.

A certain number of the cases presented a fairly large sized tumor in the vitreous chamber without any apparent increase in tension as far as could be determined by a microscopic examination. Unfortunately no tensions were recorded in any of the cases in this series. This is a very valuable point in making a differential diagnosis in an obscure case with a circumscribed detachment of the retina. The use of the tonometer may often be the means of settling a disputed point in the diagnosis. It has been suggested that the increase of tension was due to pressure of the tumor upon one of the vena vorticosi, and thus preventing the outflow of venous blood from the eye, but to compensate for this obstruction a collateral circulation is established through the anterior ciliary vessels.

In a certain number of cases of sarcoma we find a cellular, fibrinous and sometimes a pigmentary deposit in the angle of the anterior chamber and also in the pectinate ligament. This condition has not been sufficiently constant and therefore too much importance cannot be attached to the presence of these deposits.

A very rare complication that is sometimes seen in eyes with sarcomatous growths is spontaneous rupture of the globe, with extrusion of the contents of the eye.

The rupture usually takes place through the center of the cornea in eyes with sarcomata instead of at the cornea-scleral margin, which is the most usual place for rupture of the globe to occur.

Just what is the actual cause of the rupture is still in doubt, as only a very few cases of this sort are on record. It seems rather doubtful that the gradual increase in the size of the tumor is sufficient to rupture the globe, what seems more reasonable is that there has been a sudden rupture of some of the intra-ocular blood vessels with sufficient hemorrhage to raise the tension of the eye to the point of rupture. This is the reason given by Voerhoff (Archiv. Ophth. XXXIII, 1904) for three of his cases reported at that time and is the explanation advanced for the case reported in this paper.

Voerhoff reports four cases of spontaneous rupture of the globe from intra-ocular sarcomata and from a very careful study of the literature finds it an extremely rare accident. He calls attention to the fact that this condition may be very easily overlooked and eyes of this kind may be diagnosed as hemorrhagic glaucoma or glaucoma with hemorrhage.

The case report is a patient from the service of Dr. Wootton, and when the eye was sectioned, in the laboratory ten days after its removal, it was diagnosed as glaucoma with hemorrhage causing the spontaneous rupture of the cornea and upon more careful study of the specimen at the request of Dr. Wootton the presence of a neoplasm was demonstrated. When the eye was sectioned it was found that there was present a rupture of the cornea, with some of the intra-ocular contents of the eye in the lips of the wound. The lens was extruded and the anterior chamber and the vitreous chamber filled with what appeared to be a hemorrhagic mass.

Laboratory Report in Full.—Gross pathology (hardening in 10 per cent formalin). The eyeball was completely stained with blood. There was a large ragged wound near the center of the cornea about 8 mm. long, and the edges of the wound were gaping and filled with blood-stained tissue.

Section: Microscopic Examination.—The globe was slightly misshapen and measured 21 by 23 mm. and a goodly portion of the optic nerve was obtained at time of enucleation for study. The wound of cornea was entirely filled with hemorrhagic mass, the anterior chamber partially obliterated, the iris prolapsed forward against the cornea, and the lens was completely extruded from the eye. The ciliary body was

pushed forward and there was a large mass which entirely filled the vitreous chamber that looked like an organized blood clot. The retina was completely detached and the choroid only partially. The optic nerve did not show any changes.

Microscopic Examination (celloidin, van Geisen hematoxylin and eosin).—The mass that was found on the cornea at the site of rupture consisted of broken-down fibres of the lense and remnants of its capsule. There is considerable free hemorrhage and fibrin seen, and part of the iris and retina more or less disorganized, help to form this mass. There is a free leucocytic invasion and purulent material about the corneal edges of the wound, and near the limbus of the cornea. Some pigment granules are to be seen which, no doubt, owe their origin to the iris.

Cornea.—The rupture is very readily seen and the edges of the cornea wound are reflected out and back towards the limbus. The edges of the wound are rough and uneven. The epithelial layer and Bowman's membrane are entirely missing and on the most superficial layers of the corneal stroma is seen a rapid invasion and disintegration by pus cells which also are producing necrosis of this portion of the cornea. The corneal stroma shows a splitting up of the separate layers of this tissue with cloudy swelling. There is to be seen remnants of Descemet's membrane in fairly good condition, showing its highly resistive properties.

Anterior Chamber.—This is entirely obliterated and some parts of the ciliary body and its process are seen adhering to the posterior surface of the cornea. The detached retina helps to fill up the anterior chamber with the hemorrhage.

Iris.—There are no traces of the iris to be seen inside of the eye, and this is also true of the crystalline lens, as both of these tissues were completely extruded from the eye at the time of rupture.

Ciliary Body.—There is almost a complete detachment of the ciliary body on both sides and is only retained to the sclera at the point of attachment of the ciliary ligament. The ciliary body is pretty well disorganized and swollen, so that it is most difficult to make any sort of a study of them.

Retina.—This has been partly extruded from the globe and the portion that remains is pushed up to the inner part of the wound. Down and out there is still some partly degenerated retina attached to the surface of the tumor.

Choriod.—This is detached to a slight degree in about one-half of its area, and shows tremendous engorgement of its vessels. The tumor seems to have had its origin in the posterior third of the eye, quite near the optic nerve.

There are several large sub-choroid hemorrhages which are pushing the tumor mass outwards and forwards. The largest one is in the anterior third of the eyeball reaching clear up to the ciliary body and pushing it forward and literally tearing it from its base. There are several smaller hemorrhages near the middle third and still others seen between the choroid and the body of the tumor.

In the sarcoma itself there are a number of smaller sized hemorrhages and with all of this free bleeding it is easy to understand the occurrence of rupture of the globe.

Optic Nerve.—This was very carefully studied in the longitudinal and transverse sections, and we were unable to find any extension of the tumor cells along this pathway.

Sclera.—It does not show any erosion of the tumor, nor is there the slightest tendency shown towards extension of the sarcoma along this channel.

Relation of the Tumor to Eye.—As has been stated the tumor has taken its origin from the posterior third of the choroid, and there is a small portion of this membrane that shows a point of origin of the sarcoma, but the real base of the tumor is not seen in any of the microscopic sections. At this point the tumor is torn away from the choroid and no direct point of contact can be found, but this portion of the choroid is without the retinal pigment layer which is found at all other parts of the choroid.

Principal (Essential Tumor) Cells.—The sarcoma is made up of the small spindle and the small round cell. There seems to be a fairly even distribution of these two forms of cells throughout the tumor. The spindle cell does not show the characteristic tendency to form themselves into whorls, but assume with the round cell a rather free and open formation. The two variety of cells show a tendency to rapid cell division and the nucleus is rather small in both type of cells.

The Blood Vessels.—This is an extremely vascular tumor and presents a great number of bloodvessels the same as one usually sees in sarcoma. The great majority of these vessels being without the regular vessels' wall and with a marked tendency to bleed into the tumor. There has been considerable free bleeding into the sarcoma with no secondary degeneration of the growth which would seem to prove that these hemorrhages had been quite recent. There is a very large sub-choroidal hemorrhage which has been already mentioned, occurring on the one side and forcing the tumor and the ciliary body forward together with a large hemorrhage lying between the sarcoma and the choroid on the opposite side of the globe, and it is these two hemorrhages which were the direct cause of the corneal rupture.

The Pigment.—There is only one small portion of the tumor where any pigment is seen and its origin is undoubtedly from the ciliary body and its processes. It is broken up into fine granules and does not show any tendency to hyperplasia. This is one of the purest type of a leuco-sarcoma that we find. Leuco-sarcomata are very rare and many of the cases so recorded have not been

sufficiently studied and the diagnosis is often made from a microscopic examination alone.

All of the specimens of intra-ocular sarcomata, that have been shown here this afternoon are from the Laboratory of the Manhattan Eye, Ear and Throat Hospital, and from the clinical services of Drs. Webster, Thomson, Van Fleet, Wootton, Irwin, Kinney, Valk, Giles and the late Dr. Oatman, and to these gentlemen I wish to express my thanks.

SOME SOCIOLOGICAL ASPECTS OF OPHTHALMOLOGY.*

By ELLICE M. ALGER, M.D.,
NEW YORK CITY.

THE past decade, remarkable in many ways for the wonderful progress in medicine and surgery, has been no less remarkable for the public interest taken in that progress. Our great newspapers and magazines which cater carefully to the wants of their readers are giving enormous amounts of space to the problems of tuberculosis and cancer. Our great men are eager to lend their names and give their means to hospitals and dispensaries and campaigns. We, as ophthalmologists, seem to have played rather a small part in this propaganda. There have been no epoch-making discoveries in our field in many years, nor do we seem to be on the threshold of any today. Our field. though important, is not in the center of things, and our practice has not been revolutionized by the overturning which has taken place in medicine and surgery. We have been busy over our own individual problems, realizing all the time that they were special problems. Society has reciprocated our attitude exactly, and shows not the slightest apparent consciousness that ophthalmology as a specialty has any great social importance. In a day of tremendous liberality to hospitals and colleges, there has been little or no giving to institutions for the eyes. Even our own profession is coming more and more to consider that though ophthalmology may be a part of medicine, it is an isolated part with few points of contact or community with the rest. In reality there are many of our problems which are particularly social problems on which we should make our collective influence felt.

Many people seem to think that the public function of ophthalmology is practically limited to contagious diseases like ophthalmia neonatorum and trachoma. I shall say very little about the first, which has, in the opinion of many observers, been over-emphasized to the neglect of other conditions, socially more important.

It is certainly less common than it was, doubtless largely owing to the prophylaxis of Credé, but I cannot help suspecting that the fountain syringe and the general improvement in personal hygiene have been just as important factors. It is certainly much less dangerous that it was, for which we may thank milder methods of treatment and the introduction of the newer silver preparations. But whatever we may think of its relative importance, we must wake up to the fact that studies made in several parts of the country show conclusively that the disease is rather more likely to occur in the practice of physicians than in that of the ignorant and dirty midwife.

We ophthalmologists are particularly responsible for the belief that ophthalmia is always a gonococcus infection, which leads the general practitioner to omit prophylactic measures in his good patients. We, as ophthalmologists, are responsible for the belief that it is an extremely dangerous disease for the general practitioner to meddle with, which leads to neglect of cases in their beginning and to the laws passed in so many states requiring the physician as well as the midwife to report cases within twenty-four hours. As a matter of fact, ophthalmia neonatorum should not be the ophthalmologist's problem at all. It occurs in obstetric practice. The possibility of successful prophylaxis was proven by an obstetrician and can be practiced only by him. He should be the one to treat the disease, first, because it has been occasioned by his neglect, and second, because he is on the ground at the beginning, when timely treatment may check the whole process. There is nothing about the ordinary case which the obstetrician could not treat with perfect success. The midwife should, of course, report cases at once, but the physician should not be allowed to wash his hands of responsibility by any such means. If he is not competent to treat the condition, he ought to be, and if it is logical for the local board of health to take the case off his hands, it ought to relieve him by that same logic of most of the other details of his practice. Ophthalmia neonatorum is still more the problem of the general practitioner and the obstetrician because its occasional occurrence is one of the chief arguments for hospital training and state licensing of midwives, and marks another step in the advance of the trained nurse into the field of medical practice.

Trachoma is another disease which is becoming less common and less dangerous; not because of any methods of prevention by health boards, or skill in treatment by physicians, but by the general improvement in standards of cleanliness and personal hygiene. We feel sure that many conditions were formerly mistakenly diagnosed as trachoma, but certainly none of us see today anything like as many or as severe cases of the real disease as we used to years ago.

Very much more important from the sociological point of view are the corneal diseases of children which result in scarring and consequent impairment of vision. These conditions, whether they are dependent on disease, malnutrition, or accident, are invariably tedious in recovery and subject to exacerbation and relapse. Even the physician does not appreciate their gravity nor

* Read at the Annual Meeting of the Medical Society of the State of New York, April 29, 1914.

their enormous frequency. Every opthalmologist knows how often these children are neglected. Every one of us has had occasion to note how rapidly obstinate cases clear up in the hospital on exactly the same medication because of the trained attention and the better nutrition. But where is the hospital that will take or can offer to take the multitudes of patients with chronic keratitis when they are filled already with acute surgical conditions? Ophthalmologists can hardly perform a greater social service than to make the public realize the permanent loss both to patient and community by this neglect. One of the next phases of the conservation of vision will be in the treatment of these patients. Society cannot afford to have children half blinded in such large numbers. They will not be allowed to straggle from one dispensary to another. They will either be taken into a hospital and kept until cured, or followed up day after day by the social service nurse. One of the most promising methods was that outlined by De Schweinitz before this society two years ago, for the gathering of these children together into special classes where they can be collectively under the care of the ophthalmologist and the nurse.

The daily total of preventable accidents is something enormous. It is probable that even the accidents due to childish carelessness may be greatly reduced, but those occurring in work are undoubtedly undergoing a steady reduction as a result of movements like the "safety first" campaign. It is becoming a business truism that it does not pay to train a skilled workman through a period of years and then have him spoiled by a preventable accident. In many industries it has been proven conclusively that the time lost through the multiplicity of small mishaps costs more than the safeguards that would prevent them. The designing of safety devices has become a specialty of itself and the doctor, the nurse and the social service worker are now employed by most of the great industrial corporations, not as a philanthropy but as an economy. Many of them are already employing ophthalmologists as well, for in the prevention and treatment of accidents the function of the ophthalmologist is not by any means limited to eye accidents, though in some industries these are said to be thirty-five per cent of the total.

The relation between accidents and bad lighting, between accidents and poor vision, between accidents and fatigue, is today universally admitted, and these are all more or less within our field. But the greatest factor in accident prevention will be the principle of accident and industrial insurance just coming into legal use in our state. Both employer and employee have a direct financial interest in providing and using every possible safeguard, and the insurance companies will put all possible pressure on them both.

There is another side to industrial compensation interesting to us, which has not been greatly considered. It is false economy to employ in dangerous trades men who are especially liable to accident, and in this category come especially men with one eye, men with poor vision or with limited fields, or even men with refractive errors predisposing to fatigue.

The special accidents which are likely to follow the employment of men with defective vision, as engineers, pilots and the like, have long been recognized and provided for by eye examinations, though the necessity of conciliating unions has made them far from what they should be. But if it is essential to examine the eyes of engineers who run on steel rails, often at moderate speed, what shall we say of the men who regularly guide gasoline cars on the public roads at speeds quite as high? Such a man consulted me some time ago. He had perfectly normal vision in each eye, but for some weeks every approaching car had appeared double, and his great fear was that some time he would dodge the wrong car. I recently saw a young lady who had periodic attacks of hemianopsia, which she remarked incidentally had embarrassed her very much in driving her auto. Every automobile owner or user should be obliged to furnish evidence of normal eyesight, or better still, to be tested officially every time his license is renewed.

We have an increasing list of occupational diseases which affect the eyes. Workers in lead, arsenic and rubber become poisoned and lose their sight. There are probably many cases of blindness which from lack of facilities are not traced back to their real cause in some occupation. As ophthalmologists we can take pride particularly in the progress that has been made since Wood and Buller first called attention to wood alcohol blindness. Though in this state a bill recently failed to become a law, in many other states laws have been passed restricting its use and prescribing conditions for its sale, and without doubt the extensive publicity has taught people the dangers in its use. Probably here, too, the introduction of industrial insurance will act as a powerful influence for good.

There is one feature about all this social legislation that is of interest to all physicians including ophthalmologists. In handling matters of health and disease and accident, the various state and city bureaus are commonly dealing with subjects on which there is very little exact statistical information. In default of public funds to make the investigation demanded, there has arisen what might be termed the "let George do it" doctrine, by which it is made the legal duty of the physician to report in such detail as departmental statistics require on a multitude of conditions, simply because they are likely to come under his observation from time to time. Now no one objects to furnishing all possible information, but the number of subjects is becoming larger and larger, the detail is in many cases more minute than one would make in the examination of private patients, while the information is to be sent to one or half a dozen addresses. Some

simpler and more uniform scheme would not only remove a burden from the conscientious physician, but would secure a much more complete collection of reports from physicians as a whole.

But the ophthalmologist can quite possibly render greater social service in the field of efficiency than in that of disease. In greater New York alone there are 700,000 school children. Medical inspection is designed chiefly for the detection of contagious diseases, certainly so far as the eyes are concerned, and even that is falling more and more into the hands of the cheaper and more docile school nurse. And yet, from the standpoint of learning, vision is the most important of the senses, and if we can judge from the experience of other communities, in at least 150,000 of these children it is defective. It is probably impracticable at present to have the eyes of every school child examined by an ophthalmologist, but it ought to be perfectly feasible to devise tests to be carried out by the teachers or nurses which would sift out for more careful examination those children who need help the most. But the problem of securing this more careful examination is not so easy. It is not right that these hordes of children should be dumped into the existing clinics, either for the sake of the children themselves or of the overworked junior assistants who have to look after them.

Within the past few years there has developed a system of so-called scientific shop management. It consists in selecting carefully the workmen especially adapted to a particular kind of work, training them in methods which avoid waste motion and unnecessary fatigue, and finally making it worth their while to work at top speed. The same idea is being applied in many department stores, commercial establishments and offices, and even in our public schools. But in many occupations no scientific management is possible without the aid of the ophthalmologist. The physical limitations of bad eyes have been generally entirely overlooked or misunderstood. No one would think of educating a cripple for the army or a deaf mute for the orchestra, but we see every day children with myopia being hurried into blindness by the pressure of an ill-considered education, and innumerable people, young and old, struggling through life at tasks which a ten-minute eye examination would have shown them totally unfitted for. What is the sense, for instance, of training a man as a policeman or a locomotive engineer and then retiring him in full vigor on a pension because his latent hyperopia has become manifest? Probably a third of the employees in the clothing industry could work longer and with less fatigue and fewer mistakes if they wore suitable glasses, and yet in many shops a man will not wear glasses because he fears discharge. The same thing applies in all industries calling for close, fine work.

There are numerous other sociological topics on which I should like to touch if time permitted, such as the very important subject of illumination, the heredity of blindness and its relation to the social diseases, the educational standards of our own specialty over which we have no control, the new idea of municipal pay dispensaries, the optometrist masquerading as a doctor and the general practitioner masquerading as an ophthalmologist. Most of these problems are social ones, which can be settled rightly not by the passing of laws, but by the development of intelligent public sentiment. We have in the state and the nation a number of voluntary lay organizations with which we can work in entire harmony toward this end. But they do not represent us; they are not responsible to us or for us; they do not entirely meet our need. We have even some problems in which our interests, though not opposed, are different from those of other physicians. We need in each state a body on the lines of the Committee on Conservation of Vision of the American Medical Association, a body which, without exploiting its individual members, shall collaborate with other similar bodies to develop an intelligent public sentiment and at the same time open avenues for the younger men for greater public service if not for private opportunity.

Discussion.

DR. F. PARK LEWIS, Buffalo: The physician whether in general or special practice occupies a dual position in his relationship to the community; primarily his responsibility is to the individual for whom he cares, and secondarily to the general public. That this double responsibility is being more generally recognized is shown in the multiplication of measures and organizations for the preservation of sight. In 1903 and again in 1906 commissions for the prevention of blindness were instituted by the legislature of the State of New York. The recommendations made by these commissions were adopted in 1913 by the creation of a permanent commission endowed with large powers for the study of existing conditions detrimental to the eyes, and with authority to take such measures as might prevent blindness. This Commission is now organized and prepared to co-operate with the medical profession and all other forms of corporate and individual effort along like lines within the limits of this State. The Secretary, Mr. Clarence M. Abbott is here today. In 1906 a committee was appointed with the authority of the House of Delegates of the A.M.A., for the prevention of ophthalmia neonatorum. Later, the importance of this work being more fully recognized its scope was broadened, its membership increased, and it was made the Committee on the Prevention of Blindness. Still later it was still further enlarged in its scope and in its membership and it became under the direction of the Council on Health and Public Instruction, the Committee on the Conservation of Vision. Besides reports which have been issued from year to year and measures which have been inaugurated in almost all of the states for the prevention of ophthalmia neonatorum, the Committee during the past year has established

courses of public lectures upon the care of the eyes and it is hoped that during the coming year at least one lecture will be given in every county in the state of New York upon this subject. To aid in carrying out these lectures a series of twenty pamphlets has been already published in popular language and these may be obtained for a nominal sum, which is actually the cost of their publication, by addressing the Secretary of the Council on Health and Public Instruction in care of the Journal of the A. M. A. A series of lantern slides of very excellent quality has also been prepared and a set of these are now in my charge to be loaned to those caring to give public lectures. I will be glad to send the slides to any physician who cares to use them, the only requirement being that the individual to whom they are sent shall assume responsibility for their safe return and shall pay express charges both ways. Five years ago, under the auspices of, and with the financial support of the Russell Sage Foundation the Committee on the Prevention of Blindness was formed and many thousands of pamphlets, leaflets and other educational material have been distributed by this committee. An annual appropriation of $5,000 is made for the maintenance of this work, and an office with a secretary and all the necessary assistance has been provided. It is evident therefore, that there has been up to the present time adequate educational provision for this important work. The danger now is in an excessive and an unwarrantable multiplication of organizations thereby causing an overlapping of the spheres of influences. That which has not been done is to obtain the essential facts concerning preventable blindness. Our statistics are lamentably defective. We do not yet accurately know the causes of blindness in the State of New York in any large proportion of cases. This can only be obtained by individual physicians, hospitals and dispensaries working in cooperation with the State Commission for the Blind. A proposed chart for the purpose of obtaining such data was suggested by the Committee on the Prevention of Blindness in its last report to the A. M. A. If such a chart were universally used and the facts correlated it would give the exact statistical knowledge which is essential before effective steps can be taken for the prevention of like conditions.

SURGERY OF THE MAXILLARY ANTRUM; EXTERNAL ROUTE.*

By STEPHEN H. LUTZ, M.D.,
BROOKLYN-NEW YORK.

WHEN, in 1651, Highmore observed the free flow of pus following the extraction of an upper back tooth and found he could enter a cavity in the superior maxilla, the first opening of the maxillary antrum was recorded.

Fifty years later, Cowper, an English surgeon, put into effect what he remembered of Highmore's work. He had a patient with toothache and a free flow of pus from one side of the nose. He extracted the first upper molar, but found the alveolus intact. He then bored a hole upward through the alveolar process and opened into the antrum of Highmore, thus the first operation for empyema of the maxillary antrum was accomplished. Highmore found it could be done, Cowper did the first operation and it remained for Ziem, one hundred and seventy years later, to describe the symptomatology and treatment. He operated a number of cases after Cowper's method, thus making the opening of the Maxillary antrum a definite surgical procedure.

In 1743 Lamoirier opened the anterior wall of the antrum solely for discharge of pus from the nose without reference to aching teeth. Bodenave, 1768, and Desault in 1798, left records of their success and were followed one hundred years later by Küster who, by a description of his own work, established this operation as a definite surgical procedure.

One of our own countrymen, Caldwell, in 1893, was the first to combine the opening of the facial wall of the antrum with a counter opening into the nose done from within the antrum, and to him belongs the honor of the operation as we know it today.

He was followed by Gerber, in 1893; Boenninghaus, 1896; Luc, 1897; Moure, 1899; Lermoyez, 1902; Killian, 1904; Denker, 1905, and Tilly, in 1906, each putting forth claims of originality or adding modifications.

When to open from the antrum into the nose and how large an opening to make, when to open from the nose into the antrum, whether to curette and the degree of curettage, whether to pack or not, how much of the lower turbinate to sacrifice or to sacrifice none at all, to turn down a flap or not, how much of the bone between the nose and the antrum to take away, to suture the wound in the mouth or not, to irrigate or not, are all questions which have advocates and adversaries. This is not the time nor the place for me to discuss these various claims nor is it necessary to describe the anatomy in detail.

When the intranasal treatment has been faithfully carried out and a cure is not forthcoming, or by probing through the puncture, or enlarged puncture opening, necrotic bone can be detected there is but one thing left to do, a combined external and internal operation. The external opening to give a clear view and a clear field for whatever work is necessary, be it removal of polypi or necrotic bone by curettage, and the internal opening to establish a permanent communication with the nose for drainage and after treatment.

The facial wall is easily accessible as it extends laterally outward from the nose to the maler promontary. The parts to be kept in

* Read at the Annual Meeting of the Medical Society of the State of New York, April 29, 1914.

mind are the roof of the antrum which is also the floor of the orbit, the naso-antral wall, the floor where septa may be and irregularities are always found. Free access to and a good view of all these parts must be had. The first and second molars and rarely the second bicuspid may penetrate the floor of the antrum and become factors in the operation. Access must be obtained to the anterior angle where floor, naso-antral wall and facial wall meet, even though the possibility of the lachrymal duct opening into the antrum makes this step difficult.

Previous to the operation the patient should be instructed to keep the mouth and teeth as clean as possible.

The operation can be done under local anesthesia, but to my mind the result is not so good, for the field cannot be as thoroughly gone over as is possible under a general anesthetic.

After tamponing the post-nasal space, to prevent blood flowing into the trachea, and properly protecting with gauze the space between the cheek and the teeth, the angle of the mouth is drawn outward and upward widely exposing the upper teeth and the gum. An incision one-half inch above the free border of the gum is made from the canine tooth backward to a point above the first molar. This incision is best made down to and through the periosteum to the bone in the shape of a shallow crescent, the points reaching upward. Due allowance must be made for retraction and subsequent suturing. With a periosteal elevator this flap is freed from the bone beneath and held by a retractor, then a trephine or chisel opening made into the antrum. The opening is enlarged by rongeur or curette forward to the anterior angle of the antrum and upward keeping away from the infraorbital nerve directly above the last bicuspid tooth, and then outward and backward toward the malar bone. All the bone so far removed is rather thin. With good light and careful sponging the whole interior of the antrum can be inspected and examined with a probe. Necrotic bone is removed with curette and forceps, polypi can be removed with biting forceps or snare or curette; if a carious tooth is found protruding into the floor of the antrum, remove the tooth or the antrum will become reinfected no matter what care is taken in the after-treatment.

The communication with the nose is best made in my judgment with a large oval double-punch forceps, No. 7108, Pfau's catalogue, Gavello's punch forceps. One blade is introduced into the nose and the other blade into the antrum through the external wound, the forceps is rocked down to the floor of the nose, the handles brought together and a piece punched out of the naso-antral wall. This answers particularly well in those cases where the internal operation has been unsuccessfully done before the radical external one is undertaken. The ridge separating antrum and nasal cavity is lowered with a chisel or my ridge forceps described some years ago.

If the lower turbinate is still in place the punch will cut through turbinate and antral wall together without injuring the lachymal duct and still leave a small portion of the lower turbinate in place if care is taken in introducing and placing the blade within the nose at the time the cut is made. This method of removal by one operative procedure is most satisfactory. If the forceps can be introduced underneath the inferior turbinate it need not be sacrificed at all. The opening can be enlarged as much as desired from the antrum. There is no flap to curl up and cause trouble in the after-treatment. The result in my experience is as good in every way as when a flap is made.

If a flap is desired it is necessary to remove the naso-antral wall, from within the antrum, leaving the nasal mucous membrane intact and after the bone is removed, well down to the floor of the nose, cut and turn the flap of mucous membrane into the antrum to cover the ridge left between the nose and antrum, and in this way attempt a continuous floor for the combined antrum and lower meatus of the nose. The whole cavity is sponged dry, all bone chips removed and packed.

The packing, introduced through the nose, is drawn into the antrum and put in place, by dressing forceps, through the opening in the facial wall or if no flap has been made the gauze is introduced through the radical opening and one end passed out into the nose through the communicating naso-antral opening.

The wound in the front wall of the antrum is then closed over the packing by suturing the soft parts with two or three silk-worm gut sutures and the patient put to bed. In one to three days the packing is all removed through the nose and nothing put back. On the fifth or sixth day the antrum may be irrigated through the nose, but not too often after that. If the case does not do well the antrum has not been well cleaned or the drainage and ventilation are not sufficient.

I have refrained purposely from speaking of the route through the alveolar process by way of a tooth socket because that method is rarely used by rhynologists now. If pus is present in the antrum the opening of a tooth socket allows only some of the pus to escape, it never takes the place of the radical operation which is always the operation of choice when the patient's consent can be obtained.

SURGERY OF THE MAXILLARY SINUS; INTRANASAL ROUTE.*

By LEE M. HURD, M.D.,
NEW YORK CITY.

THE maxillary sinus is infected either from the nose (about sixty-five per cent), or from the teeth (about thirty-five per cent), and may also act as a reservoir for the

* Read at the Annual Meeting of the Medical Society of the State of New York, April 29, 1914.

pus from disease of the frontal sinus and the anterior ethmoidal cells.

The diagnosis, especially as to the source of infection, is important as bearing upon the subsequent treatment.

Pain, either dull or neuralgic in character, may be referred in any branch of the trigeminal nerve, but is usually directly in or about the antrum.

Tenderness over the canine fossa will be found in a part of the acute infections, and but rarely in the chronic cases.

Swelling may appear in acute cases, but not as a rule.

Odor, when present, is usually found in chronic cases, but may also be present in acute cases of dental origin.

Odor has no significance as to the prognosis, as some of the most odoriferous cases clear up quickly under treatment.

Infections of dental origin are very apt to have a characteristic odor.

Secretion may be purulent, muco-purulent, or flocculant. The flocculant is suggestive of dental infection. The secretion appears in the nose as a string, hanging on the inner surface of the inferior turbinate about midway back or running backwards into the naso-pharynx between the middle and inferior turbinate.

Polyps may be present in the infundibulum, but are not characteristic of antral disease.

Eye symptoms are rare.

Transillumination is an aid in so much as it may show any contrast between the two antra, while an X-ray of both the sinus and the teeth is of considerable value.

Douching the antrum either via ostium or by needle puncture is most important. Needle puncture through the naso-antral wall under the inferior turbinate is more effectual than douching through the natural opening.

It is always necessary to determine whether other sinuses are involved, as attention to the antrum and neglect of the others may lead to failure.

Antral lavage may be done through the natural opening in a small percentage of cases, but this method is not so satisfactory as the needle puncture under the inferior turbinate, in so much as the ostium is usually constricted from the swollen tissue, and the canula leaves little room for a return flow.

The needle puncture under the inferior turbinate can be done with either a straight or a curved needle. I use a curved needle.

The needle should be passed through the naso-antral wall where it is usually thinest, that is about half an inch back from the anterior border of the inferior turbinate, and between one-quarter or a third of an inch above the nasal floor, directing the point of the needle outward, not upward, to avoid the danger of invading the orbit.

If the point of the needle does not readily pass through the bony wall with manual pressure, a slight tap with the mallet will suffice.

Now gently pump air through the needle, which will hiss through the ostium and produce a bubbling sound if secretion is present, then pass warm normal saline solution through the needle, which will wash out the secretion.

The return flow may be slow, which is an unfavorable sign, indicating thickened mucosa or the presence of polyps.

At least, one quart of warm normal saline solution should be passed through the antrum, as the nature of the secretion or the condition of the membrane may prevent the secretion from appearing with the first flow of the solution.

In acute cases, warm normal saline lavage is generally sufficient to cure the condition except those of dental origin.

Antiseptics have not seemed to hasten the recovery of cases under my observation and treatment.

Beck's bismuth paste or vaseline have acted well and apparently have rapidly effected a cure. The paste is injected daily through the needle until it drives out the secretion and overflows through the ostium.

Infection of dental origin are usually of slow onset, and rarely acute.

The two bicuspids and the molars may be in relation to the antral floor, while the second bicuspid, the first and second molars are the most frequent source of infection.

Flocculant odoriferous secretion is more frequent in dental than in nasal infections.

Douching with cold solution and increasing the pressure of the solution within the antrum may produce pain about the offending tooth.

Inspection of the teeth helps, but often teeth are capped or apparently sound and not tender, then only an X-ray will reveal the true condition.

Extraction of an offending tooth seems to be the only procedure that effects a cure. If extraction and lavage of the sinus do not promptly stop the secretion, the condition of the bone then is such that only a radical operation will suffice.

Cases in which the secretion is of long standing lavage alone or Beck's bismuth paste may stop the secretion.

If the maxillary sinus has acted as a reservoir, and the sinuses above have cleared up, a few douchings of the antrum will check the discharge.

If daily lavage shows some tendency to diminish the discharge, but the progress is slow, injection of silver nitrate solution in increasing strengths may act favorably.

The antral membrane should be anæsthetized and as the silver solution is injected through the needle the nasal cavity should be flooded

with sodium chloride solution, thereby entirely limiting the action of the silver solution to the antrum.

I have used the silver nitrate to saturation. It is needless to say that care must be used with the stronger solutions.

If the improvement is not quite marked and progressive with the treatment just outlined, the antrum should be drained into the nose.

There are several methods for antral drainage, but I will only mention the one that seems to me the simplest, and which has most frequently given me the best results.

First.—The nose is anæsthetized with alypin, ten per cent, adrenalin, one twenty thousandth, then the antrum by injecting a similar solution through the antral needle.

Second.—The inferior turbinate is severed with scissors from its attachment half way back, and pushed over against the septum.

Third.—The naso-antral wall is entered with a chisel or other instrument that will make an opening large enough to admit of one blade of a biting forceps, such as a Wagner's or a large Grunwald's, and the wall is removed as far back as the antrum extends and upward as far as the junction of the inferior turbinate to the antral wall and downward as near to the floor as the hard and thicker bone in that location will allow.

Fourth.—A forceps that bits toward the operator is introduced, and in the same manner as above described, the antral wall is removed as far forward as the antrum extends.

Fifth.—Smooth off the lower border of the opening with a rasp or chisel.

Sixth.—Douche out the debris and replace the inferior turbinate, holding it in place with gauze packing for twenty-four hours.

Subsequent Treatment: Douche the antrum, or better still, keep it filled with bismuth paste.

The Holmes' naso-pharyngoscope will prove of great value for inspecting the walls, polyps and degenerated membrane can be located and thereby given the proper treatment.

The procedure most suitable for the pathological condition will often largely be altered by the temperament of the patient, for while one patient will be willing to undergo a long course of treatment rather than an operation, another finds the repeated treatment with the greater uncertainty of success intolerable, and will prefer the surer and quicker results following operation.

The intranasal measures effect a cure in a large majority of cases, but where there is necrosis of the antral walls, or greatly degenerated membrane, there is little hope for success.

THE CORRECTION OF NASAL DEFORMITIES BY THE INJECTION OF PARAFFIN.*

By HARMON SMITH, M.D.

THE correction of nasal deformities by the injection of paraffin has in the last few years been largely supplanted by the bridge-splint operation and the subcutaneous insertion of bone from other parts of the body. This does not imply that the proper injection of paraffin in carefully selected cases is any the less effective in results than formerly. Where the injection of paraffin is indicated observing the requirements outlined by me in previous papers, the procedure is unattended with danger, requires little surgery, consumes a minimum of the patient's time and is pleasing in outcome because there is no scar. However, since the introduction of the bridge-splint and bone transplantation operation the cases in which paraffin is indicated have been materially lessened, and only in the small field where it is peculiarly applicable is it warrantable.

Selection of Cases.

In syphilitic cases where there exists any evidence of activity the injection of paraffin is absolutely contra-indicated just as any other operative procedure would be contra-indicated. Also where the septum has been destroyed and the base of the nasal triangle forming the so-called bridge of the nose has been weakened and the nose flattened downward and outwards, the injection would only accentuate the broadness and flatness characteristic of this condition. Again, in cases where the scar tissue has drawn the skin tightly over the dorsum of the nose and the area where the injection would be made is tense paraffin would only temporarily uphold the flattened tissues, and the constant pressure exerted by the retracting scar tissue would force it downward and outward into localities where less pressure obtains. Paraffin is also contra-indicated in those cases of traumatic deformity where injury across the dorsum of the nose has resulted in cicatricial formation, bringing into close unity the skin, the areolar tissue and the periosteum, for when it is necessary to liberate by means of a scalpel the cicatricial bands holding the skin to the underlying bone the injected paraffin is often squeezed out of place by the tendency of nature to reform cicatrices. Of course, this result will not obtain where there are only a few fibres of cicatricial tissue, but if the scar is of any extent it is inadvisable to try to correct the deformity by this means. In diabetic, nephritic and tuberculous cases it is inadvisable to inject paraffin in any great amount, as the tissues will not take care of a foreign substance where the diseased condition of the body is already making such great demand upon the circulation.

After excluding all these cases in which paraf-

* Read at the Annual Meeting of the Medical Society of the State of New York, April 29, 1914.

fin is contra-indicated there remains but a limited field in which it may be employed. One of the conditions in which it is peculiarly indicated is the slight falling in of the dorsum of the nose following extensive submucous septal resection. This unfortunate sequence to the submucous operation may follow in cases of young women who are peculiarly sensitive to their outward appearance. Here the underlying tissues offer sufficient support for the small amount of paraffin necessary to overcome the deformity. The nose is ordinarily in a healthful condition and the constitutional disturbances contra-indicating the injection of paraffin are absent. Therefore a small amount of paraffin injected in a deformity of this character, particularly if the skin over the deformity is at all abundant, will overcome it successfully and without discomfort to the patient. Again, in syphilitic cases where there is no activity and where the patient has been on anti-syphilitic treatment for several months previously and where the deformity is not attended by the conditions as mentioned under the contra-indications for the injection, paraffin, if injected properly, is unquestionably effective in outcome. In traumatic cases it is peculiarly indicated, provided the injury has not produced external scars binding the tissues down to the underlying bone or cartilage. In congenital deformities paraffin is frequently the most feasible method of correction, as here the deformity is ordinarily a smooth curve with sufficient underlying support and with ample looseness of skin above to insure a good result from the injection. In children it is ordinarily unwise to inject paraffin, as the nose has not assumed its ultimate shape, and a correct outline for a child would by no means meet the

artistic requirement of the adult. However, I present here a picture of a little girl whose nose I injected twelve years ago and another presenting the present appearance. During these years she has escaped the humiliation to which a sensitive girl would have been subjected during this period, and her present appearance is not one of deformity. The flattened alae have been somewhat elevated by a plastic operation performed by Dr. Carter, and at a second sitting this tip deformity will be still further lessened. I also removed a globule of paraffin from near the inner canthus of the right eye, which has remained in situ for twelve years. This globule was injected there through error at the time of correction, as we were using liquid paraffin then and an ordinary hypodermic syringe. Since then our technique has been modified and the screw-piston syringe employed by which such errors are prevented. The microscopical examination of this piece of tissue by Dr. Jonathan Wright bears out his earlier observations and is given later in detail. (The patient will be presented to you this afternoon at the Manhattan Eye, Ear and Throat Hospital.)

Selection of Paraffin.

For a long while experimentation for the proper mixture of paraffin rendered the injection uncertain in regard to its permanency. A great many of the sad sequences to the injection of paraffin were due to the employment of a paraffin which either melted at too low or too high a temperature and likewise were intermixed with hydrocarbon oils in unsuitable proportions for the requirements. Paraffin injected in liquid form with the natural tendency of liquids to assume a globular shape when liberated, unquestionably tended toward the formation of emboli, many reports of which were submitted as following its employment in the early days. Paraffin if injected with a melting point of 130 or 140 degrees

Fahrenheit becomes too hard soon after its introduction into the tissues and tends to produce contiguous irritation. If injected with too low a melting point it tends to wander away from the point of injection to that of least resistance. After careful experimentation I have come to the conclusion that 110 degrees Fahrenheit is the proper melting point for the best permanent results. For a long while I felt that a melting point of 115 to 120 degrees was to be preferred to that of 110, but after observing these cases for a long period I have gone back to my former melting point of 110 degrees, which is the melting point I advocated early in the introduction of this procedure. In careful experimentation with C. N. Leigh, chemist of this city, we were able to obtain a sterile paraffin mixture which had a definite melting point of 110 degrees Fahrenheit, which is non-irritating to the tissues and is put up in sterile tubes ready for injection. It is a difficult matter to obtain a paraffin melting at just 110 degrees which will pass readily through the injecting needle and yet retain its plasticity. The objection to the majority of paraffins recommended for subcutaneous injection is that they retain too much of the character of commercial paraffin to insure easy passage through the injecting needle, and when sufficient force is exerted upon the piston to eject it the paraffin compresses tightly in the distal end of the syringe and will not force its way out through the needle. The former method of injecting paraffin in liquid form has resulted in so many disasters that it may be considered nothing short of criminal negligence to again employ it in this manner.

Syringes.

A great number of these all embodying the same principle are now to be found upon the market. All take advantage of the mechanical force of the screw or the ratchet to aid in the ejection of the solid paraffin. I have tried the majority of these syringes, but find no material advantage over the original screw-piston syringe I presented at the annual meeting of the American Laryngological, Rhinological and Otological Society in Washington, May, 1902. Yankauer has modified this syringe so that the screw cap, which originally fitted into the head of the cylinder, is now attached by means of a ratchet arrangement, which enables the operator to more quickly and easily load and unload his syringe with the melted paraffin. With this exception there apparently has been but little advantage gained in the various modifications of the screw-piston syringe. Those syringes employing other mechanical means than that of the screw are less delicate in controlling the amount of paraffin injected, and consequently are subject to the criticism that in some instances more paraffin will be injected than the character of the deformity requires. Onodi and Beck both have presented syringes which are more delicate in outline and which may be easier in handling, but possess no special qualifications to recommend them.

Technique of Operation.

Those operators who have undertaken to impress the patient with the magnitude of the operation by advising general anæthesia have attributed to it an unnecessary and unwarrantable importance. Cocain injection preceding the paraffin is likewise unnecessary, and the pain incident to it is equal to the pain experienced from the injection of paraffin. Aseptic and antiseptic precautions should be carefully observed in this operation the same as in any other operation where local asepsis can be obtained. The patient's hair should be protected by a sterilized towel and the outer clothing with a sterile gown. The operator's hands should be antisepticized. The paraffin needle and syringe should be boiled, and it also renders the operation doubly safe to boil again the paraffin contained in the sterilized tubes. This may be accomplished either by boiling the tube with the paraffin in it or by pouring the paraffin into a proper receptacle and permitting it to boil therein. The syringe and needle are removed and immersed in a 1 to 40 cold carbolic acid solution, after which they are removed, dried and loaded with the liquid sterile paraffin and again dropped into the cold carbolic acid solution. After a few minutes the paraffin will have hardened sufficiently in the syringe to test its consistency. This is accomplished by dipping the needle in boiling water and screwing the piston down, with the syringe held in the upright position, so that air, water and oil may be expelled from it. If the paraffin comes out in liquid or semi-liquid form the syringe must be again immersed in the cold antiseptic solution until the paraffin has assumed a solid state. When the paraffin is ejected from the needle in a cylindrical thread without interrupted spurts of air and oil it is then in a suitable state for injection into the tissues. Before injection is made the needle should always be dipped in hot (but not boiling) water so that its lumen will be warm enough to permit the paraffin to pass readily through it without obstruction; otherwise it will cool in the lumen of the needle and form a plug, which, if sufficient force is exerted on the screw-piston to eject it, will be followed by an injection of a surplus of paraffin owing to the undue pressure exercised. The paraffin is prevented from entering undesirable locations by the aid of an assistant, who is likewise surgically prepared for an operation and who stands behind the patient and with the balls of the two thumbs makes pressure against the nasal bones with the apicies of the thumbs coming together at the roof of the nose. In this manner no regurgitation of paraffin can enter the soft tissues in and around the inner canthi of the eyes. The operator stands to the side of the patient and invariably makes the injection from above downwards, so that the force of the paraffin in its exit from the needle comes in contact with the resistance offered by the intimate association of skin and cartilage at the tip of the nose. Some of the deleterious sequences to the injec-

tion of paraffin have resulted from the operator not observing this precaution and in making the injection from below upwards, where the stream of paraffin has no controlling barrier to stop its progress and consequently has often entered undesirable localities. The point of the needle should gain entrance above and somewhat removed from the location of the deformity and should be carried beneath the skin and above the periosteum to a point beyond where the deformity terminates. Injection is then made, beginning at this point and gradually withdrawing the needle along the course it has pursued in its entrance, a greater amount of paraffin being deposited where the deformity is most marked. During the course of the injection the operator should turn over to the assistant the office of holding the syringe in place while he moulds the paraffin to meet the requirements necessary to overcome the deformity. If in the course of his injection he finds that insufficient paraffin has been introduced to overcome the deformity and the tissues are not yet put on tension an additional amount can be injected before the withdrawal of the needle. After the needle is withdrawn the paraffin can be moulded to suit the artistic design of the operator, and if perchance it does not yield readily to his moulding hot sterile applications can be made over the region and the paraffin sufficiently softened "in situ" to permit the exact construction. An attempt to overcome the entire deformity at one injection should not always be made, as it is preferable to make a subsequent injection rather than to endanger the tissues from pressure necrosis by injecting too much at one sitting. The length of time intermediate between the first and second injection should never be less than two weeks, as nature is called upon to take care of a foreign substance, and if additional burden is to be borne there is likelihood of necrosis. The entrance made by the introduction of the needle should be closed with collodion and ice cloths should be applied for fifteen or twenty minutes immediately after injection, so that the paraffin may be temporarily fixed. If temporary fixture of the paraffin is insured nature will immediately begin to throw out protective inflammation, which, if carried up to its ultimate conclusion, will result in permanent fixture. The paraffin on entrance most probably breaks itself up into small globules which fix themselves in the meshes of areolar tissue, and it is doubtful if in the majority of instances the paraffin remains in the tissues in one composite solid mass. These meshes of areolar tissue tend within themselves to hold the paraffin in proper position, and when supported by subsequent fibrous tissue formation the permanency of the injection is almost invariably assured. The patient should be instructed to return home immediately after the injection and remain quiet for the rest of the day, during which time if cold applications are applied it will materially lessen the subsequent inflammation and bruised appearance of the tissues. If there has been much moulding of the paraffin after injection the tissues overlying the deformity and around the inner canthi of the eyes will assume a bluish appearance, resembling that resulting from a blow. This is due most likely to disturbance of circulation and not to the traumatism incident to the injection. This discoloration disappears in from a week to ten days, and in some cases is not present at all. It has been claimed by some operators that permanent redness resulted from the injection of paraffin, and this I believe has been due to the fact that the paraffin was injected into the skin and not beneath it, as in those cases where the deformity necessitated injection into the skin itself and where no space beneath it could be obtained for injection the tissues have remained red for a long period of time, and in one or two instances have not disappeared after several years' observation. This result in a young woman is greatly to be deplored, and I would caution the operator to make every effort to inject the paraffin beneath the skin into the soft areolar tissue.

In attempting to reconstruct the nose careful attention should be paid to the conformity of the face, otherwise the operator is likely to construct an aquiline nose upon a flat, broad face, requiring distinctly the opposite type of nose. It is always advisable before injection is made to obtain a photograph of the patient or at least a plaster cast of the nose showing the deformity, otherwise the ideal formed in the mind of the patient will not be met by the operative work and the operator is likely to be subjected to undeserved criticism for not performing all that he claimed he would.

Fate of Paraffin in the Tissues.

It was at first thought that a large part of the injected paraffin was absorbed, but it has been definitely proven that only some of the oily substances employed to lower the melting point of the paraffin were taken up by the circulation or had exuded through the tissues and skin and thereby reduced in appearance the quantity of injected paraffin. It has happened in my experience that I have been able to obtain paraffin from the noses of two patients, one injected two years previously to obtaining the specimen and the other twelve years after its injection. After submitting these two specimens to microscopical examination it was definitely shown that around each island of paraffin nature had thrown out a protecting capsule of fibrous tissue and that the inner lining of this capsule was bordered with endothelial cells from which it can reasonably be concluded that nature makes every effort toward embodying a foreign substance as part of its structure. It has also been definitely proven that the division into small islands of paraffin is probably due to the fact that it is broken up at the time of its introduction by the areolar structure and that nature does not throw into it fibrils of connective tissue, although the microscopic examination of paraffin shows that it is granular and

therefore there are plenty of interstices into which nature can extend fibrous elements.

Dr. Jonathan Wright reports as follows upon the specimen recently submitted to him which was removed twelve years after injection: The capsule is well formed and fibrous and lined by endothelial cells, while bone salts have been to a certain extent deposited within the capsule. From the nature of the technique in preparing the section we should not expect to find much left of the original paraffin. It doubtless filled the cavity of the capsule and has been dissolved out by the fluids used in preparing the section. The matter is, of course, of considerable interest. At this lapse of time it shows that the tissues have reacted to the presence of paraffin as they do to a foreign body and have permanently encapsulated it. I presume there can be no question of absorption of any of the material injected, though perhaps one is not warranted in concluding that none of it at all has been carried away; one would only infer that if this has taken place it has occurred before the formation of such a dense capsule as is indicated in this specimen.

Sequelæ.

Evil sequences to the injection of paraffin can be reduced to a minimum by observing the precautions enumerated in the first part of this paper. The sad sequences which have so firmly fixed themselves in the minds of many have been brought about by the non-observance of the precautions so frequently enumerated by me in former papers. The injection into the tissues of material which has not been properly sterilized, or the injection of paraffin in a liquid form, or the injection of paraffin in the direction toward the soft, loose structures around the eyes where no resistance is offered, or the injection into noses where insufficient looseness of the superficial tissues obtains, will unquestionably be followed by results far from the expectations of the operator. I believe that the visual disturbance following the injection of paraffin can be absolutely overcome by injecting the paraffin cold and from above downwards away from the orbit, and by having an intelligent assistant exercise sufficient digital pressure against the nasal bones and roof of the nose, to prevent the entrance of paraffin into any other locality than the one desired. Another fault of technique is the introduction at one sitting of too much paraffin, in which case the tissues are absolutely unable to cope with the call put upon them to take care of a large amount of foreign substance. The wanderings of the paraffin into undesirable localities can be largely overcome by the application of ice immediately after the injection and by having the patient remain quiet for a few days until it becomes fixed by the inflammation that nature throws out of its own accord. Other criticisms against paraffin have also been largely due to the fact that operators have injected it into the cheek and forehead and other localities in large amounts where the natural tendency of gravity is to pull the mass downwards, and in these instances it has usually sought softer tissues where less resistance existed. Paraffin is essentially an element for the correction of nasal deformities where the underlying support is bony or cartilaginous and where the superficial tissues are soft and unresisting, and if there is tightness of the skin over the location of the deformity the constant pressure exerted at that point will displace the paraffin and force it into the position where less pressure obtains. It has been claimed by some authorities that paraffin will produce cancer at the point of injection, and Canfield has reported one case of paraffin carcinoma, but upon investigating these cases it has been found that the paraffin injected was of a high melting point and not prepared after the manner recommended by me many years ago. One can readily imagine that if too great an amount of paraffin is injected of too high a melting point the irritation incident to its presence might ultimately result in an increased cell growth, but out of the thousands of cases injected there are such a limited number of such results that it hardly appears as a possibility when the injection is made in observance with the precautions already enumerated.

Observations.

In my individual experience and in the opportunities permitted for observation of hundreds of other cases there have not occurred more than four or five undesirable sequelæ. One of these was in a man living in a distant state, where it was apparently imperative that two injections of paraffin should be made within a week, and disregarding my experience and judgment in the matter I made the second injection a few days after the first, and his physician wrote me one month subsequently that the paraffin had broken through the tissues and the majority of it had exuded. In a subsequent letter one year later he stated that sufficient fibrosis had resulted from the inflammation due to the breaking down to entirely overcome the deformity and that the result was as satisfactory as if the paraffin had remained. In one or two other instances, where the injection had been made into the skin and not beneath it, the paraffin had worked its way out through the pores of the skin and the deformity had remained uncorrected. In one instance the injection was made where the tissues were too taut over the point of deformity and the paraffin worked its way down to the lateral sides of the nose. In the light of more extensive experience I have learned to avoid injecting paraffin into those cases where the outcome will not be as desired, as more modern surgery has offered better opportunities for overcoming these cases. Those cases suitable for the injection of paraffin have been materially lessened, but the outcome in these cases has been materially favored because they have met all the requirements.

DIET IN HEALTH AND DISEASE.*

By CHARLES CLYDE SUTTER, M.D.,

ROCHESTER, N. Y.

NUTRITION means nourishment of the body; the preparation, assimilation, dissimilation and destruction of substances which take place in processes of repair and growth. Food is the substance that is taken into the body to supply nourishment or to replace tissue-waste. It is the fuel—the source of energy—of the human machine as well as the very material out of which the body is constructed. For this reason diet must be considered seriously during the period of growth, the period of labor and the period of decline.

Food ingested differs much in composition from the food that can be utilized in cell growth and in replacing the tissue-waste. Ingested carbohydrates, fats, proteids, etc., are subjected to two distinct processes; preparation for assimilation and for its utilization. The function of digestion is so to alter the food that it may be absorbed by the blood, and to prepare it for assimilation and utilization by the various tissues. These two processes take place in different portions of the body; the preparation, in the alimentary tract, blood and lymph; the utilization, in various living cells.

To properly understand digestion and assimilation, it is necessary to know something of absorption. This occurs either by the material absorbed entering directly into the blood and passing thence to the liver, or by its entering the lacteals and passing thence through the thoracic duct to enter the blood-current of the left jugular and subclavian veins.

For complete digestion it will be seen that there must be perfect function of each organ of digestion and perfect correlation of all the organs of digestion. Any physiological or pathological deviation from the normal function of any part of this complex system will be manifested by imperfect assimilation.

Each portion of the digestive tract has a definite function and can perform this function within certain limits. The organs of elimination also have a definite capacity for work in the normal individual. It is because of this limitation that the quantity, quality and the type of food is of so great importance. Add to this a physiological or pathological perversion of function of the organs of digestion or elimination and the functional capacity becomes at once diminished.

In the maintenance of perfect health of the individual it has been proven that the different kinds of food—proteids, fats, carbohydrates, and the mineral salts—must be present in their proper proportion.

For the maintenance of the normal weight of the individual the amount of food ingested must be sufficient to replace tissue-waste. Any amount below this maintenance diet will be manifested by loss in weight. The amount ingested in excess of the demand will be stored in the individual. There are definite limitations to the amount that may be stored in the individual. The amount of food which may be handled by the body varies necessarily under special conditions; the adult requires more food than does the child; a man at work, more than one at rest; and emaciated individual less than when he was in a more robust condition; the individual living in the south requires less and a different kind of food from the individual living in the north; an invalid a different quantity and quality of food than when he was healthy, the type and the amount depending upon the nature of the illness and the degree of pathological alteration.

Disease may be caused by taking too little or too much food, by a diet that does not contain the combination of food elements in correct proportions, and by the entrance into the body of many poisons or disease germs with the food and drink. The diseases due to the taking of insufficient food are starvation, malnutrition, marasmus and some form of anemia. The disturbances due to overeating or the taking of improper food is manifested in various ways. Food, by producing irritation in the alimentary tract, may be the cause of acute indigestion, diarrhœa, and the like. Excessive amounts of food assimilated may be deposited as fat and cause obesity, or, by overworking the organs of excretion, produce degenerations or sclerosis. The kidneys, liver, and the heart are the organs most likely to suffer, but the nervous system may also be affected. In epileptics attacks may be brought on by overfeeding. Gout, lithemia, and the like are among the diseases caused by a too generous diet. Overeating is probably as prolific a source of disease as overdrinking, a fact that is not generally recognized.

Chronic excessive intestinal putrefaction is quite frequently caused by the entrance with the food of putrefactive bacteria, by the ingestion of improperly cooked food, by improper mastication and the consumption of excessive quantities of food, particularly meat, poultry and fish. The use of an excessive quantity of meat frequently goes hand-in-hand with imperfect mastication. The result is that many masses of muscle fiber find their way through the small intestine into the lower ileum and large intestine where they are attacked by putrefactive bacteria. The toxines produced by intestinal putrefaction which are able to pass the lines of defense of the body cause systemic manifestations of varying types.

Today it is possible to control growth of an animal by the use of the Mendel-Osborn diets. Transmissible tumors are greatly influenced by diet and at the present time several workers are

* Read at the meeting of the Medical Association of Central New York, at Auburn, N. Y., October 30, 1913.

making experiments with the idea that the influence of diet upon transmissible tumors may be exerted through the ductless glands.

The universal disease of today is constipation. This condition has been brought about by our sedentary life, the strenuousness of modern daily life, and by the substitution of a cellulose-free diet for the diet of our grandparents. The outer layers of the wheat kernel, found in the course flours, the coarsely rolled oats, the coarse cornmeal, the fruit dried with the skins on, all supplied bulky cellulose. The pan of apples which was brought from the cellar evenings, the nuts and popcorn, too, that were always in store for an evenings refreshments, were abundant sources of cellulose. In their place today we find chocolates or food which is completely digestible, leaving no residue and supplying an excess of sugar which must be eliminated. Because we are amply nourished on a diet of meat and sweets, both concentrated and of high caloric value, we thoughtlessly leave out another essential—the bulky, fibrous, and watery vegetables and fruits. To make room for these our grandparents reduced the amount of meat and sweets.

Vegetables and fruits not only supply bulk in the digestive tract, but they stimulate peristalsis, acting as a gentle irritant to the lining membrane of the digestive tract. In addition they supply the salts necessary for the organs and tissues in order that they may function properly. Sodium chlorid is necessary for the production of hydrochloric acid in the gastric juice. Without calcium our bones would become too soft our heart beat would become too slow. The most common foods in our diet—white bread, meat and potatoes—are deficient in calcium. Without iron our blood would be deficient in hæmoglobin. The food supplying the most iron in an available form is not red meat, but spinach —a green vegetable.

Senility is a relative term. A person may be old and not senile, or, he may be middle-aged and senile. The presence of the senile process is an indication for certain lines of management and treatment, regardless of the age. The diet must be regulated so as to keep up the nutrition and the proper muscular strength. Fermentative and putrefactive changes in the intestinal tract must be prevented, and irritants, that circulate in the blood and cause a rise in blood pressure, endarteritis, and irritation of the kidneys, must be eliminated.

When patients are advised to restrict their diet in certain directions to keep arteriosclerosis under control, they are apt to go to extremes. In consequence they suffer from inanition and lack of certain necessary elements in their food. The evils of dietetic abuse are particularly serious in patients with high blood pressure and neurasthenia. The diet should be regulated, modified and changed to suit the individual patient and existing conditions at different periods.

The diet must be rigidly outlined for patients with premonitary symptoms of cardiovascular-renal disease. Meats should be restricted to once a day; vegetables selected that do not cause flatulence; such milk and cream as he is able to digest without gastro-intestinal disturbance; and such fruit as agree with him best. These patients while under rigid diet must be carefully watched to note that their weight is not reduced when reduction is not desired, that more indigestion is not caused, and that the patient's strength is normal. The blood pressure should be watched and, as far as possible, controlled by dietetic and general hygienic measures. The effect of intestinal toxemia upon blood pressure was proven by Dale who caused a rise of from 110 mm. to 260 mm. pressure by the intravenous injection of parahydroxyphenyl-ethyl-amine. This substance is very similar in chemical composition to the active principle to adrenalin and was isolated by Beyer from putrid meat.

In organic disease of the heart the meals must be simple, well-cooked and small. More should never be given than the patient can easily digest. Five small meals are better than three large ones. All high seasoned food and the condiments in general should be omitted from the diet, as they tend to stimulate the appetite of the patient, and may cause him to take more food than it is necessary or desirable for him to have The principal meal should be given at mid-day and the last meal given at least three hours before bedtime. The diet should contain plenty of stewed fruit in order to help in combating constipation. Salt should be restricted especially when edema exists. Dietetic treatment of circulatory disorders is essentially one form of protective therapy. In this connection the names of three authors demand especial attention; those of Karrell, Oertel and Widal. There are wide differences in the practical standpoints and underlying theoretical considerations adopted by these authors. The essential features of the Karrell treatment is the exclusive use of milk in relatively small quantities at definitely stated intervals. The idea underlying Oertel's method is the great reduction in the quantity of fluid ingested. The Widal treatment, on the other hand, consists in excluding sodium chlorid as much as possible from the food, which, in other respects, is the ordinary mixed diet. Science achieved the most admirable triumph when it recognized the significance of the relation of the sodium chlorid to the circulation and the development of edema. It is to Widal that this conception is chiefly due.

The salt-free diet (or salt-poor diet) is most efficacious in parenchymatous nephritis. The results in reducing edema, especially in acute cases, is sometimes remarkable. In other forms of passive congestion, as in cardiac insufficiency and cirrhosis of the liver, the removal of salt from the food is often followed by surprising results. Sodium chlorid is retained in the body in these cases, not because

the excretory power of the kidney is primarily impaired, but because of the circulatory disorder. In many forms of broken compensation, it is impossible to bring about normal conditions solely by removing an excess of sodium chlorid from the food, and without the assistance of any drugs. A salt-free or salt-poor diet should never be kept up for a long time, or it will do more harm than good. The strict salt-freed diet should not be continued longer than a week at a time, preferably not more than three or four days. As far as possible the individual tolerance should be determined, and the patient kept within it. When the patients have a high tolerance for sodium chlorid, there is no good in restricting the salt intake to very small amounts.

The proper regulation of the amount or protein in the food is almost as important in the treatment of nephritis as is the regulation of the carbohydrates in diabetes. The fundamental principle of the treatment of this disease is to spare the kidneys from unnecessary work. In both diabetes and nephritis it is not only necessary to reduce the carbohydrates or protein, as the case might be, but it is of equal importance to make sure that the patient is getting a diet of sufficient nutritive value to meet the requirements of the system for heat and energy and to offset tissue-waste. The loss from limitation of the protein food must be made up by a corresponding increase of the fats and carbohydrates.

It was formerly taught that the ideal diet for nephritis, chronic as well as acute, was a strictly milk diet. Von Noorden was one of the first to point out, a few years ago, the fallacy of this line of treatment. The objection to the exclusively milk diet lies in the fact that if sufficient nutriment is to be supplied, an excess of protein must be given, whereas the protein should be diminished in order to spare the kidneys. One hundred cubic centimeters of milk contains four grams protein or seventy calories. For two thousand one hundred calories will require three thousand cubic centimeters of milk or one hundred and twenty grams of protein. Ninety grams should be the maximum for any case.

The treatment of obesity is practically a matter of diet regulation. In reduction cures it is of extreme importance to make the diet list suit the patient and not have the patient use a ready-made diet list. A careful physical examination should always precede the making of the diet list. During the reduction proper, the intake of food is to be rendered smaller than the output of energy. One must keep the patient continually under observation and must watch for loss of strength especially in complicated cases. If the indications are properly formulated, and if the proper path is followed, the patient will not become weaker, but on the contrary, stronger from the treatment. A reduction cure of itself cannot weaken the patient, but mistakes that may be made in instituting a reduction cure can produce this effect. It is unwise to restrict fluids too greatly in many cases in which the patients are given abnormally large amounts of protein food, since it allows an accumulation in the system of the products of nitrogen metabolism.

Reduction cures instituted in advanced obesity in old persons almost without exception accelerate decay and lead to a more rapid loss of strength and of functional powers.

In cases of obesity with diseases of the circulatory system, reduction cures should be preceded by systemic treatment. As soon as the first favorable results are obtained we should always follow up with a second course of digitalis.

Cases of diabetes with slight degree of obesity should never undergo a reduction cure. Cases suffering from medium degrees of obesity should undergo reduction cures only under exceptional circumstances. Diabetes tolerates neither long-continued reduction cures, nor, on the other hand, sudden loss of weight.

In tuberculosis the question of diet is of great importance. Healing of a tuberculous process is dependent to a large extent upon the state of nutrition. The appetite is generally poor and capricious so that in most cases more food can be digested than the appetite demands. Nutrition should be raised to a point that may be considered good and satisfactory but feeding should not be carried so far that the patient becomes actually obese. Feeding is often forced to the extent that the natural result follows that many cases of tuberculosis are converted into obese individuals whose functional powers are much reduced. These patients do as well or even better when a study and quantitative regulation provides a well-balanced diet, with an abundant but not excessive amount of nutriment.

Gout and rheumatism are not well understood, although it is known to be associated with a faulty metabolism. In both diseases the cutting down of the protein of the diet seems advantageous, and in gout the careful regulation of these articles of food that contain purine bodies, which is an essential feature of the treatment, can best be secured by the quantitative regulation of the diet.

The question of diet regulation in gastric and duodenal ulcer, skin diseases and the infectious fevers is so well recognized that I can easily omit them in this discussion. In liver disturbances, diarrhœa, gastroenteritis and appendicitis the place of the diet list in treatment is quite evident. In diagnosis the test-breakfast and the Schmidt diet have a definite function. Their use throws much light upon the presence or absence of the different secretions of the digestive tract and their power to digest properly the various elements of our food.

Feeding of patients today is not a matter of empiricism, but it is based on a more rational and a more scientific basis. The slowness of acceptance of dietetic treatment is due to the

lack of appreciation by physicians of what may be accomplished by more scientific diet regulation and to the difficulty of its application in their hands. This latter defect will soon be remedied, for the importance of the scientific regulation of the diet is being more fully recognized by the profession. The medical schools are now giving instruction along these lines and the coming generation of physicians will be prepared to utilize these valuable measures fully.

In order to carry out these measures we must know with some accuracy the composition of food, we must understand a few of the fundamental principles of dietetics, and we must know how to construct a diet list. We must also know what the indications are.

It is not sufficient to say to the patient, "You should not eat much meat." We should know exactly how much he is getting and then we can give him definite instructions as to the exact amount it is advisable for him to have. Every patient should be given a typewritten list stating the exact amount of water he should take; the amount, time and kind of exercise he should take; the time to arise and the time to retire; the time for work and the time for complete relaxation or recreation; the order and frequency of his meals; the amount and kind of food he should take and what food to avoid; the use of liquids with the meal; the relation of rest and exercise to the taking of food; the inadvisability of eating between meals, except in cases in which it is indicated; the inadvisability of the ingestion of food during a state of high nervous tension; and the advisability of eating slowly and of masticating thoroughly. The patient must be impressed with the great value of having a definite regulation of all habits—eating, sleeping, exercising, bathing and recreation—as a favorable factor in the return to normal health. Where the patient has a written list of instructions for daily reference there can be no excuse for his not carrying out the instructions in detail, provided, of course, that nothing is put on the list that is impossible for the patient to carry out.

In making up such a list personal peculiarities and idiosyncrasies must be remembered. Personal likes and dislikes must be given some consideration unless there is some special reason for discarding them. Digestibility and absorbability of food plays an important rôle, for, while a certain food may contain a great many more calories than an equal weight of another food, yet its relative indigestibility and non-absorbability may render it far less available as an article of diet. A knowledge of the bulk of the food and the amount of residue is important. Bland food without much cellulose is needed in diarrhœa and in lesions of the gastro-intestinal tract, while in constipation (atonic) and intestinal stasis, residue is indicated. In obesity, food with large bulk and low caloric value is indicated. The arrangement of the list should always be compatible with the occupation of the individual and the time at his disposal. The choice of food also depends largely upon the financial circumstances of the patient. The physician must not, therefore, prescribe foods which the patient is unable to buy—otherwise his directions will not be followed.

In the seriously ill the appetite should be fostered and nothing done that may in any way disturb it. No food or dishes should be allowed to stand about the room either before or after using. Food should be made as attractive as possible. Milk should be sipped slowly and not swallowed quickly in large quantities. Variety in the diet from day to day may be secured by the substitution of different articles of food which have approximately the same nutritive value and composition.

Notwithstanding the great advance in our knowledge of the value of diet regulation in the treatment of disease, very few hospitals of today are adequately equipped to feed patients properly according to modern dietetic principles. This is not due to neglect on the part of either the management or the medical staff, but is due to the fact that scientific dietetics is a subject of recent development with which the profession at large is not yet thoroughly familiar. As the feeding of patients is properly an important part of the treatment of all patients and is essentially the whole treatment of a considerable number, it should be the duty of the medical staff to see that the hospital dietary is placed on a satisfactory basis. A few years ago I examined the routine diet for all typhoid patients in one of our large city hospitals. Nourishment given every two hours consisted of milk, broth or albumin water. The attending physician, a physician of high standing, thought his patients were well fed, whereas they were receiving from 800 to 1,200 calories daily—a starvation diet. With the same amount of milk the caloric value of the diet was raised to about 3,000 calories by the addition of cream and butter, and later in the course of the disease they were given eggs and soft fluids. The result of the change was that the patients remained better nourished, were stronger and convalesced more rapidly and with less loss of flesh. These patients had been suffering from the disease plus a partial starvation. They need more protein and more calories than normally, but in the routine treatment they get neither.

Many ward patients with digestive derangements show a tendency towards relapse when they return to their homes and, for one reason or another, return to their old habits of eating. This emphasizes the need of following up these cases and securing co-operation with the home. Diet should be effective during the stay in the hospital but, to be thoroughly effective and lasting, corrections of the home conditions must be made to prevent the patient returning to the habits which caused his original trouble.

Hospitals are now realizing the great importance of diet regulation for the patients in the out-patient departments and are creating social service departments to follow up the treatment and instructions in their homes. Diet instruction and supervision through the agency of the social service is a valuable adjunct to the hospital and will accomplish results in the patients that heretofore has not been obtained. Many hospitals are now equipped with such a department and the others will, no doubt, soon follow in the good work.

There are many problems to be met by the social service dietetician. She cannot directly alter the financial return to the families but she can overcome ignorance and bad marketing. She can teach the families the proper food to eat; the proper method of preparing this food; how to get nourishing food with the same or less expenditure; how to secure a maintenance diet and still keep within the limits of their income. These factors are indispensible requisites of the individual physiologic equilibrium and economic efficiency. With the increase in the cost of living these problems become more and more serious and must be met largely by the physician. They can be carried out in a practical and satisfactory way by the aid of a competent dietetician or social service nurse in our hospital dispensaries.

In conclusion, the clinical results of special diets may be summed up by saying that in appropriate cases better results are obtained by special diets, if properly applied, than by any other mode of treatment. Furthermore, in all cases, a properly adjusted diet not only aids toward a more complete recovery but it brings that result about more quickly. The trend of progress is toward physiological therapeutics. The importance of regulation of the diet is being recognized more clearly every day. It is now possible to apply our scientific knowledge of dietetics in a practical way. The results justify the measures and the physician that pretends to keep abreast of progress must establish his dietary arrangements on an up-to-date basis soon if he has not already done so.

THE CAUSES OF RENAL PAIN.*

By E. MACD. STANTON, M.D.,
SCHENECTADY, N. Y.

IT is not my intention in this paper to discuss the symptomatology of renal pain, a subject which has been under discussion since before the days of medical societies; but it is with the pathological conditions capable of causing renal pain and the incidence of pain in these several conditions that I intend to deal. The general characteristics of renal pain are too well known to require enumeration before a meeting of this character, and yet it is only within very recent years that we have been able to study the subjective symptoms in the light of anything like an accurate knowledge of the pathological conditions causing the symptoms. To-day, as a result of the recent progress in urological diagnosis, which has made it possible to determine with almost mathematical accuracy the several morbid conditions commonly associated with renal pain, we are in a position to compare the symptoms with the living pathology in each case. As a result of data obtained in this way some of our older ideas on the subject have been confirmed; others we had to modify.

In order that we may have a clear understanding of the subject under discussion it is of fundamental importance that we have an accurate knowledge of the kind of stimuli that are capable of exciting pain in the upper urinary tract. I believe that a lack of appreciation of the fact that the viscera supplied by the sympathetic nervous system are sensitive to an entirely different class of stimuli, as compared with the stimuli capable of causing pain in structures supplied by the central nervous system is responsible for much of the confusion concerning the relation of pain to diseases of the abdominal viscera. A number of recent investigators, largely as a result of observations made while operating under local anaesthesia, would have us believe that the kidney and ureter as well as other internal viscera have little sensibility in themselves, but the mere fact that these organs can be subjected to the action of intense chemical and mechanical stimuli without in the slightest degree causing pain is proof only of the fact that knowledge gained from the study of pain in peripheral structures is not as a rule applicable to the study of visceral pain. The skin is but slightly sensitive to light, yet intense light may cause most exquisite pain when projected on the retina, and under certain abnormal conditions even ordinary daylight may cause pain in the eye. As a rule, we will find that the stimuli capable of causing pain in an organ are those that resemble the natural accidents which are liable to befall the organ in question. Thus, sudden overdistension of any one of the hollow viscera is capable of causing colic; likewise stimuli, which cause over-active peristalsis, with or without obstruction, are capable of causing cramps or colic.

As you all know, there are two very different varieties of pain associated with diseases of the upper urinary tract. In actual practice it is impossible to draw a hard and sharp line separating these varieties, yet the extremes are widely apart. There is at one end the typical renal colic with its excruiating, violent and radiating pains; at the other there is the fixed pain which in its turn may be dull and vague or sharp and intense.

Colic in the intestines is encountered under diverse conditions. It may be caused by certain medicines, foods, indigestible bodies or irritating substances. Constipation with the increased mus-

* Read at the Annual Meeting of the Fourth District Branch of the Medical Society of the State of New York, at Fort Edward, N. Y., October 14, 1913.

cular effort necessary to propel the hardened feces is the commonest cause of intestinal pain. Foreign bodies, such as gallstones, when they become impacted during their passage through the small intestines, are the cause of intense colic; likewise intestinal colic is caused by narrowings of the bowel of sufficient degree to require violent peristaltic action in order to force the contents past the obstruction. A sudden acute blocking of the bowel, on the other hand, may be unaccompanied by intermittent pain or colic.

Returning now to the kidney and its duct we find that the type of pain typified by renal colic is due to excessive contraction of the smooth muscle in the pelvis and ureter. Normally the urine does not flow passively through the ureter, but is forced through the tube by peristaltic contractions. Any stimulus capable of exciting excessive uretro-pelvic contractions seems capable of causing renal colic. In the first place, irritating substances, either mechanical or chemical, may stimulate the musculature of the pelvis and ureter to abnormal contraction. Secondly, inflammatory processes involving the ureter or pelvis may be the cause of painful spasmodic muscular contractions in these structures. Thirdly, we may have colic as the result of efforts to propel a foreign body along the ureter. Fourthly, the lumen may be obstructed by stricture, by a kink or by pressure from without.

As to the factors causing the fixed pain of renal origin we are not so certain. Distention of the renal capsule as by acute congestion or parenchymatous swelling of the organ seems to be capable of producing this type of pain, analogous to the pain so frequently seen in passive congestion of the liver. Traction on an inflamed capsule may produce this fixed pain, and in neurasthenic enteroptotics the simple drag of the non-inflamed organ on its attachments seems capable of producing the pain.

In cases of obstruction this constant pain may exist with or without colic and is probably closely analogous to the constant pain felt in the overdistended urinary bladder between the periods of intense pain accompanying the expulsive efforts

Unfortunately as regards diagnosis there does not seem to be any definite relationship between any particular disease and the intensity and character of the pain. Perhaps to say that colic is due to excessive muscular contraction, the result either of irritation or obstruction, and that the fixed pain bears a relation to causes other than muscle spasm, is as far as we can go.

For purposes of study we may conveniently group the causes of renal pain under the following classification:

1. True kidney pains:
   - Infraction,
   - Acute and chronic nephritis,
   - Renal congestion,
   - Pyele nephrosis,
   - Tumor growths,
   - Nephralgia,
   - Renal crises.
2. Pains caused by distention or muscle spasm along the upper urinary tract:
   - Renal colic due to pelvic and ureteral irritability without demonstrable obstruction,
   - Renal calculus,
   - Ureteral obstruction—intermittent hydronephrosis,
   - Infections,
   - Hemorrhage.
3. Malpositions.
   - Dietl's crises,
   - Dragging pains.

The true kidney pains are supposed to be due to acute or chronic tension upon the kidney capsule or inflammatory changes in the surrounding tissues, and as such are of the fixed type of pain, as distinguished from true renal colic.

Probably the most typical example is seen in cases of unilateral septic infarcis of the kidney, often spoken of in this country as Brewer's kidney.

Acute paroxysmal pain may occasionally, though rarely, accompany either acute or chronic nephritis. Usually the pain is dull and continuous, but occasionally it may be paroxysmal and intense, and these pains may be unilateral in spite of the symmetry in the pathological process.

The dull ache of renal congestion is well known to all. Too well known, I fear, for it is a rare condition much abused by careless diagnosticians.

Pyelo nephrosis is frequently the cause of the fixed type of renal pain and as the lesion itself is usually the result of obstruction colic is also frequently present in these cases. In pyelo nephritis and septic infections of the upper urinary tract it is not the pain but the absence of pain which I would wish to emphasize. Kapsammer tells us that out of 550 cases of pyelitis and pyelo nephritis coming to autopsy at the Wiener Allgemime Krankenhause (1893-1902) only thirty-eight, or less than one out of each fourteen cases, were diagnosed before death. This is probably approximately the proportion of cases presenting noteworthy pain symptoms referable to the kidney.

Tumors of the kidney frequently produce early intracapsular tension pain, while true colic may be present in case of hemorrhage, provided the musculature of the pelvis has not been destroyed.

Nephralgia as a diagnosis is a term which should be used only as an equivalent to saying that we cannot find a definite cause for the pain.

Renal crises analogous to the gastric crises in tabes are very rare, yet in cases of paroxysmal renal pain of doubtful origin we should remember the possibility of tabes or other lesions of the central nervous system.

From a diagnostic standpoint the group of renal colic cases without calculus and without demonstrable obstruction, as shown by pyelography and other methods of study, have been of particular interest to me. Accurate data is as yet too meager to allow of any detailed classifica-

tion of these cases. Nearly all of them are apparently the result of a hypersensitiveness or hyperirritability of the pelvis and ureter. This may be the result either of a hypersensitive nervous mechanism or the result of inflammatory conditions involving the ureter or pelvis, either directly or by extension from some other organ.

In one sub-group we have individuals suffering from undoubted attacks of renal colic in whom the urine is negative, the bladder is negative and the ureteral exploration is negative, but almost any irritation, even the slow injection by gravity of a quantity of collargol solution amounting to not over half the capacity of the renal pelvis, will set up typical colic. These patients are usually of the class known as neurasthenics. I believe we would describe them better were we to call them "hypersensitives," for their urinary tracts are certainly sensitive to stimuli incapable of producing pain in other individuals, and what is very interesting in this connection is the fact that it is possible to produce their pain at will by stimuli of which the patient can have no conscious knowledge.

In another very considerable group we have evidence of colon bacillus bacteruria without suppuration, without cystitis and pyelography shows a normal pelvis. These cases are cured when the bacteruria is cured.

Next we have a group showing well marked chronic or acute trigonal cystitis with a sensitive lower ureter, but normal urine from the ureteral catheters and normal pelvic shadows. These cases respond promptly to appropriate local treatment.

It is well known that in cases of chronic prostatitis and prostatic hypertrophy there may at times be attacks closely simulating renal colic. This is usually accounted for by supposing that under certain circumstances the painful stimuli arising in the prostate may be transmited to the lower dorsal segments having nerve connections with the prostate and thus stimulate renal pain. My own observations would lead me to have some doubt regarding the correctness of this hypothesis, because in those cases I have examined with the cystoscope I have always found the inflammatory process extending to and involving the lower ureter on the side affected. I have also seen similar renal colic in the female when the lower end of the ureter was involved from a pelvic inflammation.

I have dwelt somewhat at length on the non-surgical cases of renal colic because they are extremely troublesome cases in ordinary practice, yet they yield splendid results when studied and treated by modern methods.

As regards calculi as a cause of renal pain you are all familiar with the role they play in the production of renal colic. In this conection it is very important, however, to remember that typical renal colic is not necessary for the diagnosis of stone. We may have stones causing widespread destruction of the kidney with little or no pain, or we may have pain in the testicle on the affected side with no local symptoms in the region of the kidney.

It was not many years ago that renal colic was supposed to mean stone, and the mere thought of renal pain brings to us a more or less hazy mental picture of a stone blocking the upper end of the ureter or possibly being forced through the tube either by the urine dammed up behind it or by the peristaltic action of the ureter itself. Surgery, however, soon demonstrated that stones were not to be found in approximately half the cases of renal colic severe enough to warrant operation; hence, the early popularity of the X-ray as an aid to diagnosis in these cases. Later the Roentgenologists found that the most typical cases of renal colic were, if anything, the least likely to show calculi.

Some idea of how easy it is to overlook renal calculi is well shown by Kapsommers' statistics, which show that out of seventy-three cases of renal calculus coming to autopsy at the Wiener Allgimine Krankenhouse (1893-1902) in only four cases or in less than one out of each eighteen cases were symptoms such as to lead to a diagnosis of renal calculus before death. Yet renal calculi are always a menace not only to health, but especially to longevity, and there is no excuse to day for letting these patients die under a diagnosis of Bright's disease or chronic pyelitis. Two very common errors are made concerning the diagnosis of renal stone. First of these is the tendency to believe that most cases of severe renal pain are due to stone; the other is the failure to suspect stone in cases without histories of renal colic.

Ureteral obstruction is a frequent cause of renal pain, especially if the obstruction be of the type causing the so-called intermittent hydronephrosis. In these cases the more intense pain is liable to accompany the lesser grades of hydronephrosis. With the developments of the higher grades of distention the renal pelvis seems to lose its power of spasmodic contraction and colic gives place to the constant pain of overdistention or the discomfort may be limited to the drag of the abnormally heavy organ on its attachments.

Sudden complete occlusion of the ureter, as when accidentally ligated during operation, is often painless. The commonest single cause of ureteral distention is gradually developing occlusion, produced by carcinoma of the cervix and other malignant tumors, and it is only very rarely that this gradually developing non-intermitting type of ureteral obstruction is the cause of any pain, although it is frequently the direct cause of death in these patients.

Early renal tuberculosis is frequently accompanied by well-marked pain, probably usually the result of hyper-irritability of the ureter, although most authors believe that obstruction the result of tuberculosis of the ureter is the cause of

the pain. Fixed pain is also seen in tubercular as well as non-tubercular pyelonephrosis.

Colicy pains frequently accompany all of the purulent infections of the upper urinary tract and are probably the result of temporary complete obstruction. I have already mentioned the fact that they are by no means as frequent in the presence of these infections as is generally supposed.

Renal hemorrhage, accompanied by the formation of clots in the pelvis or ureter, is usually accompanied by colic provided the musculature of the renal pelvis has not been destroyed by the pathological process responsible for the hemorrhage.

Pain caused by malpositions of the kidney is usually of a dragging character and due to the pull of the organ upon its attachments.

As already stated, the hypersensitive enteroptatics, comprising the typical namable kidney cases, are prone to have colic without presenting any evidence of hydro-nephrosis.

Hydro-nephrosis in the presence of movable kidney is usually due to periodic kinking of the pelvis or ureter over aberrent blood vessels.

In my experience true Dietl's crises have been very rare, and I believe that this opinion is concurred in by most of those applying modern diagnostic methods to cases of renal pain.

LIGHTNING STROKE.*

By I. M. SLINGERLAND, M.D.,
FAYETTEVILLE, N. Y.

Lightning Plays Queer Pranks.

MRS. S. F., aged twenty-six, about five feet eleven inches, weight 140. On July 11 was walking along a street in a thunder shower with an umbrella up with a metal handle. In passing under a maple tree, a bolt of lightning struck the umbrella, passing through it and her right arm and right side of body down right leg and out at the heel of the shoe, taking with it one lone nail and leaving a small hole in ground.

She fell unconscious, was picked up and carried to a neighbors, about seventy-five feet away. I was hurriedly summoned. Arrived in about fifteen minutes. After working over her for an hour she regained consciousness partially and in three hours fully. She complained of a severe pain in her head and all over her body, more especially in her legs and hips. Her right breast and side and leg as far as the knee was severely burned, the deepest where there was any metal about her clothing. Below both knees there was quite a profuse hemorrhagic Petechia. Right wrist and two fingers were quite deeply burned, also right eye was much congested, blurred and drawn inward. In two to three days the aching in her legs was very much improved and in a week or so gone. The eye has straightened and congestion gone, but the blur continues, although it is getting better.

The headache is a great deal better, but by spells it aches much yet. She was in bed for about six weeks and for three weeks was very dizzy and faint if she raised up. The burns have all healed nicely. The results are good so far, but it remains to be seen if any severe nerve lesion will be the sequel. She is now doing most of her housework.

* Read before the Onondaga Medical Society, September 26, 1911.

State Department of Health Notes.

THE BOYLAN LAW.

(Article XI-a of the Public Health Law enacted as Chapter 363 of the Laws of 1914. In effect July 1, 1914.)

The law was evidently designed to prevent the sale or possession of habit-forming drugs in the State of New York except for scientific work or the treatment of disease. The wording might be much improved, as it is evidently carelessly drawn, but the general principle of the law has the thorough endorsement of the State Department of Health.

The law provides that no person shall sell at retail or give away any chloral or opium, or any preparation containing these drugs or their derivatives, except upon the written prescription of a physician, veterinarian, or dentist. By Section 245 of the law, domestic and proprietary remedies, however, are exempted from these provisions, unless they contain more than a given amount of the prohibited drugs. Moreover, this law does not apply to plasters, liniments and ointments suitable only for external use.

Section 246 provides that prescriptions calling for the prohibited drugs can only be issued for the treatment of disease, injury, or deformity, and after a physical examination of the patient. The law does not require the health authorities to provide these prescription blanks, but if, after physical examination, a duly licensed physician, veterinarian, or dentist finds it necessary to prescribe the designated drugs, he may use his own prescription blanks in doing so, provided such blanks contain his name in full, his office address, his office hours, his telephone, and the name, age and address of the person to whom, and date on which such prescription is issued. Where prescriptions call for more than four grains of morphine, thirty grains of opium, two grains of heroin, six grains of codeine, or four drams of chloral, they may not be filled until the correctness of the prescription has been verified by telephone or otherwise. No prescription may be filled more than once, whether the amount of the prohibited drug called for be small or large. The prescription is to be kept by the person who fills it, and placed on his general prescription file after being inscribed with a regular consecutive number, the name and address of the purchaser and the date on which the sale was made. The person who furnishes the drugs must, when dispensing the same, place upon the package a label or deliver therewith a certificate stating his name and address, the name and address of the one upon whose prescription the sale is made, the date of the sale, and the name of the person to whom it is made. Possession of any of the designated drugs by other than a duly authorized person is a misdemeanor. The certificates or labels called for above are not furnished by the health authorities. The provisions of this section permitting these drugs to be obtained only on the written prescription of a physician, veterinarian, or dentist, do not apply, however, to manufacturing pharmacists or chemists, or to wholesale or retail pharmacists or druggists, or to hospitals, colleges, scientific or public institutions.

The persons and institutions last named, together with physicians, veterinarians, and dentists, may obtain these drugs by employing the official order blanks re-

quired by Section 247. These official order books, serially numbered in duplicate, are furnished by the local health authorities to local duly licensed physicians, dentists, pharmacists, druggists and veterinarians, and to manufacturing chemists, hospitals, colleges and scientific or public institutions, for use in writing all orders for the purchase of any of the designated drugs. It is unlawful for any person to dispose of any of these drugs to a physician, etc., without first receiving from him an official order blank, which is to be kept on file by the person dispensing the drug, together with the date of the sale, the name and address of the purchaser, and the name of the seller.

Section 248 imposes on physicians, veterinarians, and dentists, the duty of keeping a record which must be open for inspection for five years, of the name and address of each person to whom they have administered or disposed in any way whatsoever of any of the prohibited drugs. Record books for this purpose are not furnished by the health authorities.

Section 249 regulates the sale of hypodermic needles and syringes, while Section 249-a provides for the commitment of habitual users of the prohibited drugs to state, county or city institutions licensed by the State Hospital Commission.

The revocaion of the licenses of physicians, dentists, etc., who are addicted to the use of these drugs is made possible by Section 249-b, while Section 249-c governs the revocation of licenses after conviction of violation of any of the provisions of this statute, which violations are made a misdemeanor by Section 249-d.

F. M. Meader, M.D.,
Director, Division of Communicable Diseases.

CORRESPONDENCE.

July 23, 1914.

Dr. John Cowell MacEvitt,
Editor, New York State Journal of Medicine.

It has lately come to me from many quarters that my connection with the Towns Hospital in this city has been criticized. If I were not an officer of the Medical Society of the State of New York I would probably let these criticisms pass, but I feel that under the circumstances an explanation should be made.

On September 25, 1909, there appeared an article by me in the Journal of the American Medical Association, describing a treatment for alcoholism and drug addiction. During the entire month of September, and until the middle of October, I was in the wilderness of Canada hunting and in South Dakota duck shooting, and had no communication with New York. During the last week of September the New York Times published a digest of this medical article in its news columns, making it appear as if it were a deliberate interview given out by me to one of its reporters. This, of course, brought down upon me the most terrific condemnation. When I returned home some weeks later, I heard of it for the first time. I immediately went to the editor of the *Times* and made a vigorous protest. He made a frank and full private apology. The private reparation was complete; the public injury remained.

The publication of this article, I take it, has been the foundation of a great deal of unfavorable criticism. The Towns Hospital is an institution for the care and treatment of alcoholism and drug addiction, and nothing else. It is legally incorporated under the laws of the State of New York. It is not breaking the legal letter of the law by fulfilling its corporate rights of being a hospital, nor the ethical spirit of it, for the treatment which is followed in this institution, under the charge of duly licensed physicians, is known to all men. My own connection with the hospital is that of one of its medical consulting board, and I have never had any other connection with it. Whenever I have sent my own patients there I have charged my fee separately, as I was legally and ethically bound to do. Whenever I have been requested by the hospital to see patients not my own, I have charged a separate fee per patient per visit, or I have remitted my fees and charged nothing to either hospital or patient; a personal privilege. Over thirty per cent of the hundreds of patients that I have treated for morphine addiction have been members of my own profession, and for the care of these I have never charged the individual nor the hospital a single cent.

I trust that this explanation will suffice.

Sincerely yours,
Alexander Lambert.

August 6, 1914.

Dr. John Cowell MacEvitt,
Editor, New York State Journal of Medicine.

I am enclosing herewith copy for a note on the law relative to the revocation of medical licenses. I wish that you would sandwich this in some place in the State Journal for the information of the profession, because I find many physicians do not know that we have such a law.

Yours sincerely,
H. V. Huffman,
Secretary, State Board of Medical Examiners.

How to Prefer Charges Against a Physician.

The license to practice medicine may be revoked in any of the following cases:

a. A practitioner of medicine who is guilty of any fraud or deceit in his practice, or who is guilty of a crime or misdemeanor, or who is guilty of any fraud or deceit by which he was admitted to practice; or

b. Is an habitual drunkard or habitually addicted to the use of morphine, opium, cocaine, or other drugs having a similar effect; or

c. Who undertakes or engages in any manner or by any ways or means whatsoever, to procure or perform any criminal abortion as the same is defined by section 80 of the penal law; or

d. Who offers or undertakes by any manner or means to violate any of the provisions of section 1142 of the penal law. (This section provides punishment for those convicted of promulgating indecent articles or supplying others with means for the prevention of conception.)

Proceedings for the revocation of a license are begun by filing written charges against the accused. The papers should be made out in duplicate, one copy to be filed with the Commissioner of Education, the other with the Secretary of the State Board of Medical Examiners, Education Building, Albany, N. Y. Charges may be preferred by any person.

Medical Society of the State of New York

Committee on Prize Essays.

The Committee in charge of the Merrit H. Cash Prize Fund, of $100, offer the following suggestive, but not arbitrary subjects, upon which the competitors may write their essays:

1. Present status of the value of salvarsan and neosalvarsan in the treatment of syphilis, based on personal laboratory and clinical experience and research in the laboratories of this and other countries.

2. The relation of intestinal auto-intoxication as the precursor of nephritis, with deductions drawn from clinical and laboratory findings, as given in the literature of this country.

3. Has serum therapy (Flexner) lowered the mortality in cerebro-spinal meningitis, the report to be based on full investigation of statistics in all countries where it has been systematically employed?

4. The duty of the state towards its inhabitants, morally and legally, in the segregation and treatment of those afflicted with syphilis.

5. Is the establishment of institutions for tuberculosis dangerous to the health of the community in which they are placed?

Suggestions for the Lucien Howe Prize Fund of $100.

1. A contribution to the study of arteritis endocarditis and arthritis.

2. Description of diseases of the eye (especially optic nerve lesions), found in syphilis of the nervous system, stating the forms occurring in cerebro-spinal syphilis and parasyphilis.

3. How far should the state go in providing examinations and treatment of eye diseases seen in children in public, parochial and private schools?

4. Experimental or clinical study of the extent to which the vitreous may be manipulated or transplanted.

5. Study of the colloid factors with special reference to glaucoma.

The essays for the Lucien Howe Prize must be in the hands of the Chairman of the Committee, Dr. Albert Vander Veer, 28 Eagle Street, Albany, N. Y., not later than April 1, 1915.

The essays for the Merrit H. Cash Prize must be in the hands of the Committee not later than one month in advance of the annual meeting of 1916.

JOHN F. W. WHITBECK, M.D., Rochester,
EDWARD D. FISHER, M.D., New York,
ALBERT VANDER VEER, M.D., *Chairman*, Albany,
Committee on Prize Essays.

DISTRICT BRANCHES.

CHANGE OF DATE.

Second District Branch has changed the date of its annual meeting at Mineola to October 27th, from October 29th.

THIRD DISTRICT BRANCH OF THE MEDICAL SOCIETY OF THE STATE OF NEW YORK.

Annual meeting, Albany, N. Y., Tuesday, September 15, 1914.

PROGRAM.

10 A. M. to 12 N.: Medical and surgical clinics at the Albany Hospital, New Scotland Avenue.

12 P. M.: Visit to the Albany Hospital Tuberculosis Sanatorium.

Automobiles will be in waiting to convey the members to and from the Sanatorium.

12.30 P. M.: Meeting of the House of Delegates at the Albany Hospital.

1 P. M.: Luncheon at the Albany Hospital.

The Medical Society of the County of Albany cordially invites the members of the Third District Branch to be its guests to join with them.

SCIENTIFIC SESSION.
2.15 P. M.

President's Address, Robert Selden, M.D., Catskill, N. Y.

"Appendicitis," John H. Gutmann, M.D., Albany.

"The Conception of Hay Fever as an Anaphylactic Reaction, and its Treatment by Active Immunization," Robert A. Cooke, M.D., New York

"Present Attitude Regarding Certain Serum Used in Heart Affections," Edwin H. Shepard, M.D., Syracuse.

"What is the Responsibility of the General Practitioner to his Patient who has Obstructive Prostatic Hypertrophy?" Paul M. Pilcher, M.D., Brooklyn.

"Tetanus, with Report of Two Recoveries," A. A. Stern, M.D., Kingston.

"Carcinoma of the Breast," John B. Harvie, M.D., Troy.

"Constipation; Its Diagnosis and Treatment," Jerome Meyers, M.D., Albany.

"Goiter: From the Medical and from the Surgical View," Charles P. McCabe, M.D., Greenville, and John L. Loutfian, M.D., Coxsakie.

FOURTH DISTRICT BRANCH OF THE MEDICAL SOCIETY OF THE STATE OF NEW YORK.

Annual meeting, Gloversville, N. Y. Tuesday, October 13, 1914.

PROGRAM.

Morning Session, 10 A. M.

President's address, George Lenz, M.D., Gloversville.

"The Sanitary Code in Its Relation to Physicians," Linsley Rudd Williams, M.D., Deputy Commissioner of Health, Albany.

"Chronic Cystic Mastitis (Abnormal Involution of the Breast)," Parker Syms, M.D., New York.

"Trans-Urethral and Trans-Vesicle Operations upon the Bladder and Prostate," Charles H. Chetwood, M.D., New York.

"Psychoanalysis and Its Field of Usefulness." Charles R. Payne, M.D., Wadhams.

"A Case of Osteitis Deformans," Albert Warren Ferris, M.D., Saratoga.

"Some Phases of Cardia-Renal Disease from a Therapeutic Standpoint," Nishan A. Pashayan, M.D., Schenectady.

Luncheon, 12.30.

Afternoon Session, 2 P. M.

(Subject to be announced), Hermon C. Gordinier, M.D., Troy.

"The Reduction of Blood Pressure by the Removal of an Adrenal," Andrew MacFarlane, M.D., Albany.

"State Health Work," Charles S. Prest, M.D., Waterford.

"The Results of Artificial Pneumothorax Treatment in Advanced and for Advanced Cases of Pulmonary Tuberculosis," Charles C. Trembly, M.D., Saranac Lake.

"The Feeding of a Child After the Twelfth Month," Arthur C. Hagedorn, M.D., Gloversville.

"Infant Feeding," Frank Vander Bogert, M.D., Schenectady.

"Report of Case," Horace M. Hicks, M.D., Amsterdam.

FIFTH DISTRICT BRANCH OF THE MEDICAL SOCIETY OF THE STATE OF NEW YORK.

Annual Meeting, Syracuse, N. Y., Thursday, October 1, 1914.

PROGRAM.

Morning Session 10 A. M.

President's Address, Frederick H. Flaherty, M.D., Syracuse

"The Relation of Nose and Throat Conditions to General Medicine," James F. McCaw, M.D., Watertown.

Discussion opened by Thomas H. Farrell, M.D., Utica.

"Radical Mastoid Operation," James E. Gage, M.D., Utica.

Discussion opened by Thomas H. Halsted, M.D., Syracuse.

"General Consideration of Prognosis," Henry L. Elsner, M.D., Syracuse.

"Septic Infection of the Fingers and Hands," Gilbert D. Gregor, M.D., Watertown.

Discussion opened by Alexander C. Calisch, M.D., Oswego.

"Difficult Feeding Cases After the First Year," Godfrey R. Pisek, M.D., New York City.

Discussion opened by T. Wood Clarke, M.D., Utica.

Adjournment for luncheon, 1 P. M.

Afternoon Session, 2.30 P. M.

"The Borderland Between Medicine and Surgery in Its Relation to Chronic Prostatitis," Joseph R. Wiseman, M.D., Syracuse.

"Surgery of the Prostate," Albert J. Ochsner, M.D., Chicago, Ill.

Discussion opened by James H. Glass, M.D., Utica.

"Some Observations on Surgery of the Pancreas with Report of Two Cases," George B. Broad, M.D., Syracuse.

"Public Health and the General Practitioner," Augustus B. Santry, M.D., Little Falls.

Discussion opened by Otto Pfaff, M.D., Oneida.

"Title to be Announced," Walter H. Kidder, M.D., Oswego.

"Classification, Diagnosis and Treatment of Renal Diseases Based on Functional Tests of the Kidney," George W. Stark, M.D., Syracuse.

Discussion opened by Jesse R. Pawlings, M.D., Watertown.

The Central New York Medical Society will meet jointly with the Fifth District Branch, its meeting being September 30, 1914, the day preceding our meeting.

A dinner will be given on the evening of the 30th in honor of the two societies. All members of the Fifth District Branch are earnestly requested to be present.

SIXTH DISTRICT BRANCH OF THE MEDICAL SOCIETY OF THE STATE OF NEW YORK.

Annual Meeting, Masonic Temple, Norwich, N. Y., Tuesday, October 6, 1914.

PROGRAM.

11 A. M.

President's Address, Thomas F. Manley, M.D., Norwich.

"The Early Diagnosis of Pulmonary Tuberculosis," Henry Burton Doust, M.D., Syracuse.

Discussion opened by William Dewey Alsever, M.D., Syracuse.

"Modern Roentgen Technic in the Treatment of Malignant Conditions," Miles Wendel Johns, M.D., Utica.

Discussion opened by Homer Erastus Smith, M.D., Norwich.

"Operations Which Permit of the Discarding of Apparatus in the Resulting Paralysis of Acute Anterior Poliomyelitis," John Joseph Nutt, M.D., New York City.

Discussion opened by Frederick Miller, M.D., Binghamton.

"The Typhoid Diet," Warren Coleman, M.D., New York City.

Discussion opened by Luzerne Coville, M.D., Ithaca.

"Consideration of Uterine Fibroids," Aaron B. Miller, M.D., Syracuse.

Discussion opened by Martin B. Tinker, M.D., Ithaca.

"Remote Effects of Enteric Toxins," Robert Tuttle Morris, M.D., New York City.

Discussion opened by Willis E. Ford, M.D., Utica.

"Gastroptosis and Enteroptosis," Allen Arthur Jones, M.D., Buffalo.

General Discussion.

Automobiles will meet all trains.

The Chenango County Medical Society has constituted itself as host and will provide refreshments and other entertainments for the members and the visiting ladies.

A meeting of the House of Delegates will be held at one o'clock at which time the annual election of officers will take place, and other business will be transacted.

COUNTY SOCIETIES.

MEDICAL SOCIETY OF THE COUNTY OF ERIE.

Regular Meeting, Buffalo, June 15, 1914.

The President, John V. Woodruff, presided.

The minutes of the regular meeting of April 20, 1914, were approved as published, and the minutes of the Council meeting of June 1, 1914, were read and approved.

Dr. Grover W. Wende, Chairman of the Committee on Membership, presented the application of Dr. Joseph C. Wallace, and recommended his election to membership. Dr. Wallace was thereupon duly elected.

Dr. Wende also presented the applications of Dr. Charles W. Bourne, of Hamburg, N. Y., Dr. Hiram P. Trull, of Williamsville, N. Y., and Dr. Benjamin L. Lothrop, 81 Breckenridge Street, Buffalo, for recommendation to the State Society that their names be placed on the list of retired members.

Dr. J. D. Bonnar, Chairman of the Board of Censors, reported on the work of the Board and stated that a fine of $50 had been collected from Prof. Jardin who was convicted of illegally practicing medicine.

Dr. Lytle reported that the Survey Committee had sent out 585 printed requests for information for use of the society, but that out of this number only 191 had sent in any report.

Treasurer Lytle stated that the by-laws required the treasurer to report at this meeting the names of all persons who were in arrears with their dues.

On request of the society, he reported 83 such names.

Treasurer Lytle stated that the Council of the State Society had made a ruling that if any member failed to pay his dues before the first of June, he would not be entitled to malpractice defense, the Journal or directory until his indebtedness to the Society had been paid.

Scientific Program.

"The Action of Sulphates on Hardening of the Arteries," by L. Bradley Dorr, M.D., Buffalo.

"The Eye in General Practice," by H. W. Cowper, M.D., Buffalo.

"Facts, Fancies and Failures," by J. Henry Dowd, M.D., Buffalo.

Each of the foregoing papers was freely discussed by the large number of members present, after which the meeting adjourned.

MEDICAL SOCIETY OF THE COUNTY OF ORANGE.

Regular Meeting, Newburgh, Tuesday, June 7, 1914.

Scientific Session.

"Early Surgical Treatment Cervical Adenitis," Charles Townsend, M.D., Newburgh.

Discussion by T. D. Mills, M.D., and J. B. Hulett, M.D.

Discussion by Drs. R. L. McGeoch and E. C. Thompson.

"Immunity," Charles W. Dennis, M.D., Goshen.

BOOKS RECEIVED.

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

The Occupational Diseases, Their Causation, Symptoms, Treatment and Prevention. By W. Gilman Thompson, M.D., Professor of Medicine, Cornell University Medical College, New York City, Visiting Physician to Bellevue Hospital. Illustrated. D. Appleton & Co., New York and London, 1914.

Anoci-Association. By George W. Crile, M.D., Professor of Surgery, School of Medicine, Western Reserve University, Cleveland; and William E. Lower, M.D., Associate Professor of Genito-Urinary Surgery, School of Medicine, Western Reserve University, Cleveland. Octavo of 259 pages, with original illustrations. Philadelphia and London, W. B. Saunders Company, 1914. Cloth, $3.00 net.

International Clinics. Vol II, Twenty-fourth series. A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles by leading members of the profession. Edited by Henry W. Cattell, A.M., M.D., with collaboration of John Witherspoon, M.D., Sir William Osler, M.D., A. McPhedran, M.D., Frank Billings, M.D., Charles H. Mayo, M.D., Thomas H. Rotch, M.D., John G. Clark, M.D., James J. Walsh, M.D., etc., with regular correspondens in London, Paris, Berlin, etc., 1914. J. B. Lippincott Company, Philadelphia and London. Price, $2 00.

Practical Hormone Therapy: A Manual of Organotherapy for General Practitioners. By Henry R. Harrower, M.D., Late Professor of Clinical Diagnosis, Loyola University, Chicago; Fellow of the Royal Society of Medicine; Member of the American Medical Editors Association, etc. With a foreword by Prof. Dr. Arthur Biedl, Vienna. Demy 8vo., pp. xx 488, with five figures. 1914. London: Bailière, Tindall & Cox. New York: H. R. Harrower, 880 W. 180th Street. $4.50 net.

BOOK REVIEWS.

Practical Prescribing with Clinical Notes. By Arthur H. Prichard, M.R.C.S., L.R.C.P., R.N. (Rtd.), Late House Physician, Brompton Hospital, and Resident Surgeon, R. N. Hospital, Gosport. London. Henry Frowde, Hodder & Stoughton, Warwick Square, E. C. Oxford University Press, 35 West 32d Street, New York. 1913.

This convenient pocket book contains, arranged alphabetically, a list of diseases beginning with abortion and ending, most appropriately, with vulvitis. Under each the treatment is indicated briefly and succinctly; dietetic and hygienic first and medicinal last. While its usefulness for American readers is somewhat limited by reason of the unfamiliarity of many of the British pharmacopœa preparations, it nevertheless is sufficiently complete and suggestive to appeal to the man whose memory is beginning to play him tricks or the beginner who needs suggestions. The book also includes a dose table, some suggestions for subscribing, a list of incompatibles, diet table, some recipes and a number of suggestions for climatic and X-ray treatments with the inevitable obstetric table. In glancing over the list of emergencies in every day practice one cannot help but be struck by such concise advice as "For black eye apply the juice of Solomon's seal, or fresh byrony root sliced thin." If one depends on the average city druggist to provide such preparations the eye would probably clear itself by the time they could be obtained. The value of the book, however, should not be judged by such a single excerpt.

H. G. Webster.

A Mind Remedy. By John G. Ryerson, M.D., Boonton, N. J., 1914. 82 pp. 12 mo. Cloth.

Hair, Its Nature, Growth and Most Common Affections, with Hygienic Rules for Its Preservation. By Richard W. Müller, M.D. New York: William R. Jenkins Company, Publishers, Sixth Avenue and 48th Street. Price $1.50.

This little book, written in a semi-popular style, will be of value to any one who wishes to learn how to care for the hair and to treat those scalp diseases that cause alopecia.

It is not too technical for the laity to read it understandingly, and as it contains many valuable suggestions regarding the false statements promulgated by the barber and hair dresser, it is hoped that it might have some sale among those who are so ready to accept anything that is suggested to prevent oncoming baldness.

J. M. W.

Surgery: Its Principles and Practice. By various authors. Edited by William Williams Keen, M.D., LL.D., Emeritus Professor of the Principles of Surgery and of Clinical Surgery, Jefferson Medical College, Philadelphia. Volume VI. With 519 illustrations, twenty-two of them in color. Philadelphia and London, W. B. Saunders Company, 1913.

The Editor and Publisher of Keen's Surgery have established a precedent in the publication of large works with many contributors which might well be copied. Instead of issuing a new edition of the entire work an additional volume has been published in which the various authors have brought their former material up-to-date. At the same time, a very complete index of the entire six volumes has been included. This method of keeping pace with the rapid advance in surgery should have many advantages for both publisher and reader.

The list of noted contributors to the new volume at once answers for the quality of the work. A few new sections have been introduced, notably those on anesthesia by anoci-association and by intratracheal anesthesia, on the treatment of cancer by fulguration, on the surgery of the hypophysis, etc. The advances in thoracic surgery have been set forth in detail. Important chapters on the thyroid and parathyroids, by Chas. H. Mayo, summarize that author's latest views. The department of abdominal surgery has been well amplified by its former distinguished contributors. Among the new forms of industrial accidents is mentioned rupture of the intestine by compressed air. This is brought about by the workman bringing the nozzle of the compressed air hose in proximity with the anus of his mate, as a practical joke, thus forcing the sphincter with the column of air. The distention of the bowel produces rupture of the sigmoid, of course necessitating immediate laparotomy, and not a few cases are already recorded. Sections treating of the advance in the use of tincture of iodin in surgical technic of the treatment of bone diseases and injuries, of spinal anesthesia, etc., bring to the reader concise information to date.

Some of the shorter articles included in the volume savor of the "Year Book," but on the whole, the addition of Volume VI to Keen's Surgery forms a welcome supplement to that most excellent work.

R. W. W.

DEATHS.

Henry C. Eno, M.D., Saugatuck, Conn., died 1914.

John Hudson Grant, M.D., New York City, died July 26, 1914.

Helen DeWitt Justin, M.D., Castile, died July 19, 1914.

Henry Macdonald, M.D., Morris Park, died July 22, 1914.

Alfred Mercer, M.D., Syracuse, died August 26, 1914.

Grace Greenwood Prior Yankauer, M.D., New York City, died July 28, 1914.

NEW YORK STATE JOURNAL OF MEDICINE

A Journal Devoted to the Interests of the Medical Society of the State of New York

JOHN COWELL MAC EVITT, M.D., Editor

Business and Editorial Offices: 17 West 43d Street, New York, U. S. A.
Address Journals sent in Exchange to 1313 Bedford Avenue, Brooklyn, N. Y., U. S. A.

Vol. XIV. OCTOBER, 1914 No. 10

EDITORIAL DEPARTMENT

"THE HUMANE SIDE OF THE WORKMEN'S COMPENSATION LAW."

EVERY beneficent humane law that has for its object the moral and economic betterment of the human race, the individual's contentment with his sphere in life, the dissipation of envy, the conversion of avarice into generosity, the instillation of a sympathy which renders the delver in the soil and the lord of the manor kin, appeals to no class of men with greater force than to us—physicians. We see life in all its various phases. To us are opened the sacred chambers where none else is allowed to tread. The poor, the rich, the saint, the sinner, the Jew, the Gentile, and the infidel to us are one. We are of them a part. Fortunate in the position we fill today, yesterday some of us were nourished from the breasts of poverty; others of us were swathed in purple and fine linen, yet concretely we represent a profession that has always stood for the repression of oppression, and for justice among the combatants in the strife of life—whose goal to some is food, to others luxury. Standing apart we view the conflict between capital and labor. We see Toil sweating in its creation of militant Wealth. Out of the battle there arises an arbiter—The Workmen's Compensation Law heralding a new era of industrial equalization which will in time lead on to others of still greater value, permitting the worn-out artisan to rest within the shadow of his own door and not in that of the poorhouse. If the laborer is worthy of his hire, when his task is finished, a competency sufficient to render his declining days free from the spectre of want, should at least be his reward. We do not feel that organized labor has made more unjust demands upon capital than capital has in the past demanded of labor. Federal supervision over both will in the future regulate differences arising between the two, while wild-eyed socialism will be combated by both. Herein will rest the safety of our republic. Let us hope with the economic changes now taking place in the industrial trades, inseparably associated with hygienic surroundings, safeguards against injury, protection in sickness, pensions to dependents in case of death and living wages, that our youths will be induced to recognize the advantages of a trade that will render them valuable citizens and a force in the community. The professions are overcrowded. How superior is a good mechanic to an incompetent doctor, a shyster lawyer, or an insipid divine.

The foregoing thoughts had their inception in the numerous inquiries we have received from physicians requesting an interpretation of the Workmen's Compensation Law. The more pertinent inquiries were respecting the administration of the law in the matter of fees. The law in its entirety is printed in this issue of the JOURNAL, page 501.

We would advise its perusal. On account of its length we fear few will take the time to give it the study necessary for a clear understanding of the different chapters, articles and subdivisions. For this reason we have epitomized its most salient features. Those particularly interested should read the complete text.

In the next issue of the JOURNAL we will take up that part of the law of which little has been said and endeavor to explain the many interests involved, viewed from a practical standpoint in their relations to the medical profession.

AN EPITOMIZED EXPLANATORY TEXT OF THE WORKMEN'S COMPENSATION LAW.

WHAT IT IS—An Act assuring compensation for injuries or death of *certain* employees in the course of their employment, under conditions designated as *hazardous*.

INJURIES—Mean only accidents sustained in the course of this employment or diseased states unavoidably resulting therefrom. Death —means a basis for compensation for death resulting from such an injury or disease.

HAZARDOUS EMPLOYMENTS—Under this definition there are included forty-two different groups of employment; too lengthy to enumerate here—see page 501.

INSURANCE—Employers can insure themselves against liability by securing compensation to their employees in one of the following ways:

First—By insuring and keeping insured the payment of such compensation in the "State Fund."

STATE FUND—The State Insurance Fund is practically an insurance corporation created by the State and administered by the State Workmen's Compensation Committee, and in active competition with other insurance corporations for the premiums of the employers, possessing the advantage of slightly lower rates and certainty of stability.

Second—By insuring and keeping insured the payment of such compensation with stock corporation or mutual association authorized to transact the business Workmen's Compensation Insurance in this State.

Third—By furnishing satisfactory proof of his financial ability to pay such compensation himself—and meeting certain requirements in the absence of which he can be severely penalized.

LIABILITY FOR COMPENSATION—The employer is obliged to pay compensation according to stated schedules for disability or death of his employee without regard to fault of the employee as a cause, except when the injury is occasioned by wilful intention or when the injury or death results from intoxication of the employee while on duty.

ALTERNATIVE REMEDY OF THE EMPLOYEE—If an employer fail to secure the payment of compensation to the injured employee or his dependents in case of death the employee or his representative may at his option elect to claim compensation under the Workmen's Compensation Law or maintain an action in the courts for damages and it shall not be necessary to plead freedom from contributory negligence nor may the employer plead as a defense that the injury was caused by a fellow-servant nor that the employee assumed the risk of employment nor that the injury was due to contributory negligence of the employee (formerly just grounds for defense).

NO COMPENSATION shall be allowed for the first fourteen days of disability—except benefits provided for hereinafter to be explained.

TREATMENT AND CARE OF INJURED EMPLOYEES—The employer shall promptly provide such medical, surgical or other attendance or treatment, nurse, hospital service, medicines, crutches and apparatus as may be required or requested by the employee during the sixty days after the injury. If the employer fail to provide the same the employee may do so at the expense of the employer after the latter's refusal or neglect to do so. All fees and charges for such treatment shall be subject to the regulation by the Commissioners and shall be limited to such charges as prevail in the same community for similar treatment of injured persons of a like standard of living.*

WEEKLY WAGES BASIS OF COMPENSATION—The average weekly wages of the injured employee at the time of the injury shall be taken as the basis upon which to compute compensation or death benefits—the average weekly wages shall be one fifty-second part of his average annual earnings.

DIVISION OF DISABILITY—In case of total disability sixty-six and two-thirds percentum of the average weekly wages shall be paid to the employee during the continuance of such disability.

In case of temporary disability sixty-six and two-thirds percentum of the average weekly

* The last sentence is somewhat ambiguous—does it mean that a workman will be placed in a hospital ward and the superintendent in a private room?

wages shall be paid to the employee during the continuance thereof, but not in excess of three thousand five hundred dollars, except as otherwise provided for.

PERMANENT PARTIAL DISABILITY—In case of disability, partial in character, the compensation shall be sixty-six and two-thirds per-centum of the average weekly wages, which shall be paid to the employee for the period named in the schedule for the following injuries. Here is named a great number of specific injuries for which see page 503.

In other cases of this class the compensation shall be sixty-six and two-thirds percentum of the *difference* between his weekly wages and his wage-earning capacity thereafter in the same employment or otherwise, payable during the continuance of such partial disability, subject to reconsideration of increase or diminution of the said injury.

Payment under these divisions, except in case of the loss of a hand, arm, foot, leg or eye, shall not exceed fifteen dollars per week nor be less than five dollars per week, and for these injuries shall not exceed twenty dollars per week nor less than five. If the employee's wages at the time of the injuries are less than five dollars per week he shall receive his full weekly wages.

DEATH BENEFITS—

First—Reasonable funeral expenses not exceeding one hundred dollars.

Second—If there be a surviving wife or dependent husband and no child of the deceased under the age of eighteen years, to such wife or husband thirty percentum of the average wages of the deceased during widowhood or dependent widowerhood, with two year's compensation in one sum upon remarriage.

If there be surviving child or children under the age of eighteen years ten percentum of such wages shall be paid to each child until the age of eighteen years. In no case of surviving children or other dependents shall the compensation exceed sixty-six and two-thirds percentum of such wages. Any excess of wages over one hundred dollars a month shall not be taken into account in computing compensation under this section.

Questions of dependency shall be determined as of the time of the accident.

NOTICE OF INJURY—Notice of injury shall be given to the Commission and to the employer within ten days after disability, and also in the case of death of the employee resulting from such injury within thirty days.

Such notice may be given by any one entitled to compensation, or by some one in his behalf. The notice shall be in writing stating the nature of the injury and sent to the Commission and employer. The failure of such notice, unless excused by the Commission, shall be a bar to the claim.

MEDICAL EXAMINATION—An employee injured claiming compensation shall, if requested by the Commission, submit himself for a medical examination at a place reasonably convenient for the employee. If the employee or insurance company request he shall be entitled to have a physician present of his own selection. If an employee refuses to submit to an examination his right to prosecute under this law shall be suspended.

DETERMINATION OF CLAIMS FOR COMPENSATION—The Commission shall have full power and authority to determine all questions in relation to payment of claims for compensation and shall cause to be made such investigation as it may deem necessary. Upon application of either party, order a hearing within thirty days to determine such claims and file the same with the Commission together with a statement of facts and ruling of the law. The Commission may require the claimant to appear before an arbitration committee consisting of an employee, an employer, and either a member of the Commission or a person specially deputized to act as chairman.

APPEALS FROM THE DECISION OF THE COMMISSION—The decision of the Commission on the report of the Arbitration Committee shall be final unless within thirty days an appeal be taken to the Appellate Division of the Supreme Court of the Third Department.

AGREEMENT WITH EMPLOYEE—No agreement by an employee to pay a portion of the premium paid by his employer shall be valid. And any employer who makes a deduction for such purpose from the wage of his employee shall be guilty of a misdemeanor.

Original Articles

RECENT CONTRIBUTIONS TO THE DIAGNOSIS OF NERVOUS DISEASES.*

By CHARLES L. DANA, M.D., L.L.D.,

THE continued and intensive study of nervous symptoms which is going on throughout the world has not been without fruitful results. We, each year, obtain some new facts which enable us to localize disease and determine its nature rather more accurately and to recognize it earlier in its course.

No doubt it is in connection with laboratory work that we have obtained and will obtain our most brilliant results; and each year that I am a neurologist, I trust I become more of a general clinician and more closely intimate with laboratory work. Dr. Sachs will speak of this phase of the subject.

But, aside from the laboratory, there have appeared a number of contributions of real interest in neurological diagnosis. I propose to refer to some of these contributions and shall choose such subjects as seem to me to be most interesting, rather than try to present the matter in any complete and systematic way.

Psycho-Analysis.—I can hardly touch at all upon the psycho-neuroses, though these engage a great share of the neurologist's activities. But here there is a sharp line of cleavage on the lines of psycho-analysis and as regards the pervading activities of the Libido. The cult of psycho-analysis and of the subconscious to some opens up new worlds for psychological exploration, full of cultural possibilities, clinical enlightenment, if not of orgiastic interest and delight.

To others it opens up only an amazing shibboleth of libidinous suggestion, unproven assertions and futile, if not dangerous, therapeutics.

Psycho-analysis and its allied methods have, we are assured, value in showing how certain hysterical and obsessive neuroses and even how certain serious psychoses are developed and built up. We are told also that it heightens the doctor's interest in his patients by studying character and personality, the conflicts of the complexes with the trends of Libido and by bringing to light the marvelous subconscious accretions of babyhood. It is, I am sure, a field of study only suitable and safe for persons of well-trained, well-balanced and ascetic minds, and so far it seems mainly to show how an unstable house eventually falls.

Coming down to earth without any preliminary introduction, I wish to call attention to some diagnostic features connected with the peripheral nervous system.

Peripheral Nerves.

The Hunt Hand Syndrome.—We sometimes are confronted with conditions of wasting of the hand, the atrophy affecting its intrinsic muscles. Such a condition is always alarming. It suggests a hopeless form of progressive muscular atrophy or dystrophy or syringomyelia, all fatal disorders.

There are, however, many hand atrophies which are local and harmless affairs. Dr. Ramsay Hunt has worked out very ingeniously the two types of such atrophy, the thenar and hypothenar.

Hunt's neural atrophy of the intrinsic muscles of the hand without disturbances of sensibility, may result from various occupations causing compression of certain motor branches of the ulnar and median nerves.

The (*a*) thenar type and (*b*) hypothenar type are recognized:

(*a*) The thenar group is caused by occupation neuritis of the thenar branch of the median nerve. It is characterized by atrophic paralysis of the abductor, opponens and the external portion of the flexor brevis pollicis with complete electrical reactions of degeneration, strictly limited to this group of muscles.

These symptoms are produced by compression of the thenar branch of the median as it passes beneath the anterior annular ligament of the wrist. This filament is purely motor and supplies the muscles of the ball of the thumb, and as the cutaneous branches of the median escape injury the sensations are normal.

(*b*) The hypothenar type is characterized by atrophic paralysis of all the intrinsic muscles of the hand, innervated by the ulnar nerve, *i. e.*, the hypothenar, interossei and the adductor pollicis. Complete reactions of degeneration are present in the paralyzed muscles. This type results from a compression or occupation neuritis of the deep palmar branch of the ulnar nerve, as it passes between the tendons of origin of the abductor and flexor brevis minimi digiti. The deep palmar branch is purely motor and as the cutaneous branches of the ulnar escape injury, sensation is undisturbed.

As sensory disturbances are absent, these cases may resemble the early stage of the spinal atrophies beginning in the small muscles of the hand; but the strict limitation of the atrophy and paralysis to a nerve distribution, and the absence of fibrillary twitchings and of tendency to progression, will usually serve to differentiate the neural from the spinal atrophies.

Diagnosis of the Location and Degree of Peripheral Nerve Injuries.—The sensations which are brought from the limbs to the brain are carried along in three classes of sensory nerve fibers:

1. There is a deep sensibility which is supplied by the nerves to the muscles, tendons and bones, and these give us the sense of posture of passive movement, of deep pressure and of vibration.

2. There is a skin sensibility to pin pricks and pain, also to rather intense degrees of heat and cold, (protopathic sense).

* Read at the Annual Meeting of the Medical Society of the State of New York, April 30, 1914.

3. There is a skin sensibility to light touch, *e. g.*, cotton-wool, to slight degrees of heat and cold, with power of localization, (epicritic sense).

In studying out the gradual changes in these forms of sensibility after a peripheral nerve has been cut, Dr. Head came to these conclusions:

When a peripheral nerve is cut near an extremity—that is to say, in the wrist, the anæsthesia is greater and more extensive to light (cotton-wool) touch than to pain by pin prick. (Epicritic anæsthesia greater than protopathic.) If the lesion is further up, say in the elbow or arm, the area of anæsthesia to cotton-wool touch and pin prick is about the same, and the nearer one gets to the spinal cord the more identical are the two areas of anæsthesia.

If, however, the anæsthesia is produced by resection of a posterior spinal root, then the area of pin prick anæsthesia is even larger than that of cotton-wool touch. Thus a careful study of the relative areas of anæsthesia to light touch and pin prick furnish aid in determining the localization of nerve lesions.

A further point in diagnosis which should be of value in a surgical examination is connected with the facts of the return of sensation after a nerve has been divided or injured. If a nerve has been entirely divided, when restoration takes place the so-called protopathic and deep sensibility return first. That is to say, the skin becomes first sensitive to pin pricks, which give rather vague and unlocalized but very disagreeable sensations, and the part is sensitive to deep pressure and to very marked degrees of heat and cold.

Later, the epicritic sensibility returns, that is, the sensibility to light touch and the power to localize and determine between slight changes of temperature.

If a nerve has been sutured and is united, the presence of some degree of protopathic (pin prick) and deep sensibility shows that the union is working out successfully, and that no further surgical interference is needed, even though the epicritic sensibility (to cotton-wool touch) is absent.

If a nerve has not been cut, but has been functionally disturbed, say by pressure or contusion, the various types of sensibility (protopathic and epicritic) return together.

Finally, it seems fairly well determined that if a nerve is cut near the periphery, say in the forearm or wrist, it takes about 100 or 140 days for a return of function, and certainly if there is no sign of return in about 200 days it is useless to expect anything from the application of purely mechanical or pharmaceutical measures.

Vagotonia, Vagal and Vaso-Vagal Attacks.—Another nerve which has of late years aroused a good deal of special clinical interest is the pneumogastric. We have long known of attacks of tachycardia and bradycardia, and of the various disturbances that go under the head of asthmatic and arhythmic respiratory neuroses. There has been, however, an attempt of late to show that sometimes the pneumogastric nerve is thrown into acute tonus or stimulation, often in association with other cerebral autonomic nerves. This condition is called vagotonia.

Indeed, Eppinger, Hess and others have worked out what is called a neurosis of the cerebral autonomic system. This cerebral autonomic nervous system consists of a mesocephalic or mid-brain portion and a bulbar portion.

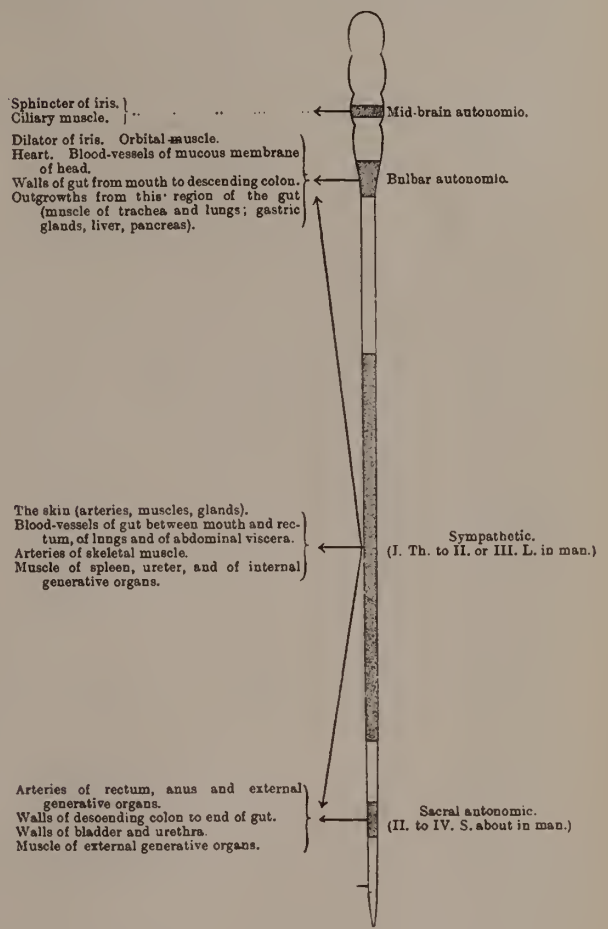


FIG. 1.—Diagram to show the general origin and distribution of efferent autonomic fibres. By "muscle" is, of course, meant unstriated muscle only. By the "walls" of a structure are meant all the unstriated muscle in it. The innervation in some cases is still a matter of controversy (gastric glands, liver, and pancreas; vessels of lungs; small arteries of skeletal muscles, and arteries of the central nervous system).

From the mid-brain there come out fibers which enter the third nerve and then pass to the ciliary ganglion and thence to the pupillary sphincter of the eye. Another set of fibers goes into the seventh nerve thence in the chorda tympani and lachrymal nerve and affects the glandular secretions. From the bulbar centers the autonomic fibers enter the pneumogastric and are distributed to the heart, lungs, stomach and intestines, as far as the colon.

In a typical vago-tonic attack all or nearly all of the cerebral autonomous nerves are affected. As the result, there is narrowing of the pupil from irritation of the ciliary ganglion (III. nerve) salivation and flow of tears, from irritation of the chorda tympani and lachrymal nerve (VII. nerve), hyperidrosis from irritation of the cervical sympathetic, bradycardia and respiratory artythmia, bronchial asthma, hyperacidity and increased gastric motility, from irritation of the vagus.

This group of symptoms has this in common, that all are alleviated by large doses of atropia, and all are increased by pilocarpin. It is a clinical picture built up more on pharmacological than clinical data. I think we see only the fragments of it.

A commoner form of vagotonia, it seems to me, shows itself as a real clinical phenomenon much more frequently in what Gowers has described as vagal and vaso-vagal attacks. These are characterized by subjective or sensory disturbances mainly. The patient, for example, first feels a sensation of distress, or distension of the stomach. This may be associated even with nausea and faintness. With it there comes a feeling of respiratory distress and inability to get the breath, a feeling of impending death or a sensation of fainting. There is generally a rather slow pulse and cold extremities. Occasionally the patient feels a very heavy beating of the heart. There is flatulence, and when gas is raised the symptoms are relieved in part. The stomach shows increased acidity and evidence of excessive motility or spasm.

There is a mental condition of confusion and alarm, and this often similates hysteria, and these vagal seizures are often regarded as hysterical.

A patient of this type, whom I have lately observed, was found to have gastric hyperacidity, and an X-ray examination of the stomach showed a contracted organ, with local spasm near the pylorus. This condition led one X-ray expert to think that the patient had a duodenal ulcer. A further study led to the conclusion that the condition was due to the excessive action of the vagus nerve, causing the hyperacidity and local spasm, as well as to the other respiratory phenomena.

It seems to me that vagal attacks are genuine somatic phenomena and are not caused by psychical states. They have to be, however, very sharply defined from the so-called panicky seizures that are seen frequently in psychasthenia. A careful examination of the patient who has real vago-tonic and vagal attacks will show some physical basis for the phenomena. It is always gratifying to extricate a syndrome from the psychic field and attach it to the soma.

The Five Deep Reflexes.—There have been an enormous number of reflexes of various types discovered and described. A large proportion of them have no clinical value. Many of them are not always present either in healthy or diseased conditions. These reflexes are of various types. We have one group which are known as the deep, tendonous and osseous reflexes. We have another group which are known as the skin reflexes, and a third group which includes the autonomic system, such as the pupillary reflexes.

I wish to refer only to one group, namely, that of the deep, tendon and bone reflexes. Although there are 15 or 20 of these that can be made out, there are only five deep spinal reflexes which can be said to be always present in healthy individuals. These five deep reflexes are, the ankle jerk, the knee jerk, the triceps reflex, the radial reflex and the pronation reflex.

Three other reflexes are rather common, but are not always present. They are the wrist reflex, the scapular reflex and the jaw reflex.

A study of these five reflexes involves an examination into the question of whether they are (1) present or absent, (2) overactive or diminished, (3) present but exhaustible, (4) equal or unequal on the two sides. Normally it is a law that the reflexes should be equal on the two sides, and not exhaustible.

Very little of practical value has so far been gotten from a study of the normal reflexes of the arm, but I have found that, in some cases at least, of brachial neuritis, the pronation reflex is absent; a clinical fact which might be put into the same catagory as that of the absence of the ankle jerk in sciatic neuritis.

The Reflexes of Defense.—The spinal skin reflexes are sometimes divided into two classes:

1. Those which may be diminished or absent, but cannot be greatly exaggerated: These are the abdominal, upper and lower; the cremasteric; the reflex flexion of the toes.

2. The reflex movements of flexion of the foot, leg and thigh: These are called the reflexes of defense.

These may be greatly exaggerated. When this exaggeration is associated with changes or loss of other reflexes of the lower extremities, we get facts of diagnostic significance. Thus, when these are exaggerated and the knee jerk is gone but the extensor toe reflex is present, we may infer a lesion of posterior and lateral columns, as in Friederich's disease.

The Cerebrum.

Brain Tumors.—It has been shown in the last six years that tumors of the brain are by no means uncommon phenomena, and the study of their diagnosis and the surgery of their removal have been very actively to the front of recent years.

In the discussion at the last International Medical Congress the statement was made that the crying need of neurologists was that we be able to make an early diagnosis. So eminent an authority as Dr. Bramwell said that the surgery of brain tumors was hardly worth while, and Horsley expressed the opinion that it is by early

diagnosis before even the typical general symptoms develop that success could usually be obtained.

Frontal Lobe Tumors.—It may be interesting then, to review what progress, if any, has been made in the matter of diagnosis of tumors.

Take, first, tumors of the frontal lobes. We find one helpful item in the fact that tumors here are rather frequent and make up much more than one-fourth of all brain tumors; also that they are more frequent in middle life, while cerebellar tumors occur oftener in early life. These facts give a certain probability of there being a frontal tumor, if the symptoms in a general way point to it, and the patient is mature.

Aside from the general symptoms of brain tumors in the frontal lobe, there are certain special characteristics. One of them is, that they sometimes produce disturbances of the mind. This disturbance is mainly in the nature of a mental deterioration, sometimes it simulates even a dementia paralytica, or there may be only a certain degree of foolishness and silly jocosity.

A fact which has been apparently established by Dr. Southard is that in lesions of the frontal lobes consciousness is not so often disturbed, while lesions of the parietal lobes are more apt to be attended with disturbance of consciousness and with sensory and emotional defects.

The pressure of tumors upon the olfactory nerves, causing distrubances in the sense of smell, sometimes helps to diagnosticate a tumor in the frontal lobe.

An important symptom has been worked out by Dr. Foster Kennedy. He finds that a frontal tumor, or abscess, may press directly upon the optic nerve; it will then cause an optic atrophy involving the central fibres and causing a central scotoma. There is, however, still a papillœdema of the nerve of the opposite side. Thus, an early optic atrophy, with central scotoma on one side and papillœdema on the other, suggest the presence of frontal tumor or a frontal abscess.

Another characteristic symptom, though it is not always present in frontal tumors, is tremor of the hands when they are extended; and there is at times a certain kind of unsteadiness, or ataxia, known as "frontal ataxia." As the tumor extends back towards the pre-central convolution one gets motor symptoms, Jacksonian epilepsy and paralysis, and these at first should be associated with very little sensory disturbance.

If one watches the progress of the tumor in its development backward, then we get first only the general tumor symptoms, then some localizing frontal symptoms, then motor symptoms.

Temporal Lobe Tumors.—Tumors in the temporal lobes are relatively rare. If they occur on the left side their diagnosis is easy, by reason of the aphasia disturbances which occur. If they develop on the right side the region is a latent one, and the localizing symptoms are difficult to elicit.

One of these, however, which has been advanced and studied by Dr. Foster Kennedy is the occurrence of uncinate fits. The patient has seizures characterized by a certain intensely disagreeable odor or disagreeable taste associated, perhaps, with some disturbance of consciousness.

These sensory fits when associated with the general symptoms of a brain tumor are of distinct value as localizing symptoms.

Besides this there sometimes occur dreamy states, hallucinatory phenomena, and as the tumor grows there is developed a hemiplegia which affects first the face, then the arm and finally, or perhaps not at all, the leg.

Acute Lenticular Degeneration.—The functions of the lenticular nucleus are not known. It is probable that they have not any independent specific function, but are simply stations where the co-ordinating and automatic movements of the body are helped along. Probably there are centers there which control the vasomotor or thermic activities. It seems that their connections with the thalamus and the red nucleus give them some importance in relation to tremor and spasticity.

It is known that in prolonged conditions of gas poisoning bilateral softening of these nuclei takes place. Occasionally after prolonged gas poisoning a condition of spastic paraplegia associated with tremors, ataxic and jerky movements, clonus and signs of irritation of the pyramidal tracts. I have seen this group of symptoms in a boy of 20 who was brought to Bellevue Hospital suffering from the effects of gas poisoning. He had probably, an acute bilateral softening of the lenticular nuclei. He eventually got entirely well.

Chronic Lenticular Degeneration.—Dr. S. A. K. Wilson, of England, has described a peculiar hereditary disease which is associated with chronic degeneration of the lenticular nuclei and cirrhosis of the liver. This disease begins in young people and progresses slowly. The patient develops a tremor very much like that of paralysis agitans, and this is associated with spasticity and a progressive paraplegia, but the pyramidal tracts are not involved. The clinical picture is suggestive in many respects of paralysis agitans.

The Mid-Brain.

Mid-Brain Lesions.—The mid-brain consists of the crura cerebri and substantia nigra; above these a region termed the tegmentum and above this the corpora quadrigemina. It is a most complex, busy and interesting spot. Industrious neurologists have formed about six different groups of symptoms developing in the various parts of the mid-brain, according to the location of the lesion. It is here that we get the ophthalmoplegias and the various forms of the conjugate movements of the eyes and nystagmic

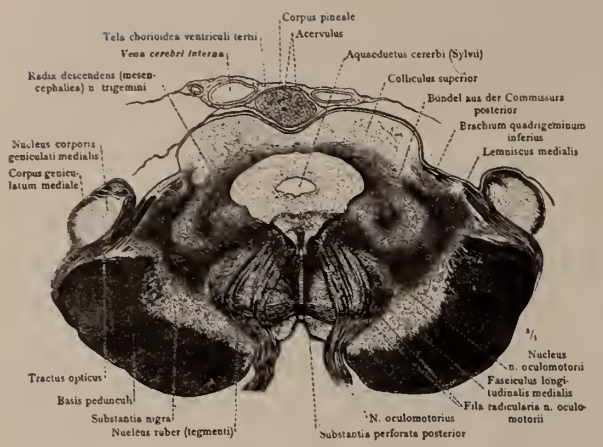


FIG. 2.—Showing cross section of mid-brain.

symptoms, that must be familiar to all physicians.

It is here largely that there are developed most often the organic and gross tremors which characterize paralysis agitans and multiple sclerosis and certain types of cerebellar disease.

Tremor.—I wish to speak only about one particular symptom developed by lesions here, and that is tremor. There is a tract of fibers which starting in the lateral lobes of the cerebellum, passes through the anterior peduncles to the opposite side and enters the red nucleus. Here fibers pass across the median line and run down in the anterio-lateral columns of the spinal cord to become connected with the cells of the anterior horn. This tract is known as the cerebello-rubro-spinal tract. It is made up, as I have just said, of the anterior cerebellar peduncle, the nucleus ruber and the rubro-spinal tract.

Irritation and disease of this tract cause coarse tremor. This tract shows evidence of degeneration in old cases of paralysis agitans; so that we may probably look upon paralysis agitans being a toxic or degenerative disease in which the tract in question is affected.

Aside from this, when coarse and persistent tremors occur, as in senility and in sclerotic and thrombotic conditions, we may expect to find involvement of the mid-brain and of this particular tract.

In organic disease of the mid-brain, tremor may be associated with paralysis of some of the ocular nerves, and there is a distinct "syndrome of Benedict" which is characterized by tremor on one side and oculo-motor palsy on the other. I may, in connection with this, add that the cerebellar anterior peduncles do not send all their fibers into the nucleus ruber and then down to the cord, but some pass up to the thalamus and cortex, and this particular band is thought to have to do with the function of giving tonus to the muscular system and when diseased we may have atony and asynergy.

The Pineal Gland.—In the same region, though not belonging strictly to the mid-brain, there lies an interesting organ known as the pineal gland. This organ, for a good many years was thought to be the seat of the soul, but it fell from its high state when sound anatomy and physiology developed, and of late years it has been considered to be a vestigeal and functionless organ. It is, indeed, a vestigium of the eye of invertebrates, though in the larval forms of some of the lowest vertebrates it still has visual function. But it has undergone a change with the development of the vertebrates, until now its structures shows no signs of its former special-sense function, but is made up of connective tissue and epithelium. It has the structure of a ductless gland.

Dr. Berkeley and myself worked with this organ for two or three years, testing its extracts in the laboratory and feeding it to adults and children. We reached the conclusion that it had some function, and that there is a syndrome which perhaps belongs to its perverted action. This syndrome has been called by an Italian observer "macro-genito somia," and is characterized by precocious development or perversion of bodily and sexual and mental functions.

Feeding backward children with the gland seemed to cause, in certain cases, distinct benefit. Tumors of this gland sometimes cause macro-genito somia.

Nu Cerebellum.

Cerebellar Localization.—A great deal has been written about the functions of the cerebellum and the symptoms which occur when this organ is diseased. There has been a great enrichment in the vocabulary of the symptoms rather to the impairment of the understanding of the subject. The words asynergy, hypermetria, adiadokokinesis, discourage the casual reader from attempting any familiarities with this organ.

After all, however, the cerebellum's functions are really not so complex, and its disorders are largely variations of really rather simple fundamental disturbances. The cerebellum controls the movements of those centers that have to do with the equilibrium and with the co-ordinative actions. The cerebellum does this not by any direct action on the muscles themselves, for it is not a motor but a sensory organ. It acts on the centers which do control and co-ordinate motion and gives through them to the muscles tonicity, stability and purpose.

We can say that the cerebellum is the organ of equilibrium, of co-ordination and of tonicity, but as a matter of fact the underlying single activity of the organ is one which secures to us a co-ordinate action of the muscles.

When the cerebellum is diseased we have a group of symptoms which may be, perhaps, divided into three parts:

1. Disorders of equilibrium and gait.
2. Disorders of co-ordination.
3. Hypotonia.

As a result of these fundamental disturbances we have associated special disturbances connected with speech, ocular movements, such as nystagmus, a general asthenia and tremulousness, vertigo and vertiginous fits.

In the disorders of equilibrium and gait in cerebellar disease the trouble is due to the fact that the nerve centers which send out impulses to the muscular system are not able to send them out in a properly co-ordinated and associated way. The defect is central. This is different from the disorders of equilibrium in spinal-cord disease where the posterior columns are affected. In this case the sense of position and of the movements of the muscles and joints is lost, and the disturbance of equilibrium is due to one's not knowing where the different segments of his legs are. The trouble here starts in the periphery.

"Ataxia" in cerebellar disease is a term which may be used in a general sense and includes certain special forms of inco-ordinated motion. One particular disturbance which is much insisted on is asynergy, that is, lack of co-operative work in the different segments of the body. Owing to the asynergy a person in walking does not swing the arms naturally to keep the balance. If the head is thrown far back, the whole body may fall back through not making associated movements of the trunk to keep the center of gravity in the right space.

Another form of inco-ordination is known as "hypermetria" or "dysmetria," which means that the cerebellar patient does not know how to gauge the distance in moving his hands to grasp an object, or how much to extend or flex the fingers to hold it. As a result in reaching for a special object, like a glass of water, the hand wanders, opening itself too widely and closing too tightly.

Another expression of ataxia is the extraordinary term known as "adiadokokinesis." In this condition the patient extends the forearms and rapidly pronates and supinates them. In adiadokokenesis the movements of pronation and supination are incomplete and slow.

Hypotonia, which occurs in cerebellar disease, is not always a dominant symptom. It probably forms part of the cause of the symptoms referred to under the head of disorders of equilibrium and ataxia. It is probably associated with disturbances of speech and the so-called "asthenia."

There are other special symptoms and tests connected with the study of cerebellar symptoms. I have not time, however, to dwell further upon this phase of the subject.

It seems to be pretty well established that the vermis, or middle lobe of the cerebellum, receives impulses from the direct cerebellar, or equilibrium tract of the spinal cord, and from the vestibular or equilibrium portion of the 8th nerve. It is probable that the vermis has to do with the control of trunk and head posture and equilibrium. The spinal tract controls more the trunk, the vestibular nerve more the head.

The lateral lobes of the cerebellum receive tracts of fibers from the cerebral hemisphere coming partly from the frontal, partly from the temporal lobes. It is probable that the lateral lobes have to do with the control of the purposive movements of the extremities. So far it seems to me that there is a fairly well-established localization of the functions of the cerebellum.

It is claimed, on the basis of experimental studies and from clinical observations, that the lateral lobes of the cerebellum have centers for the head, arms, trunk and legs, the anterior portion being for the upper parts of the body and the posterior for the lower.

I have covered only some of the subjects which have especially interested neurologists in recent years. I have not touched upon the important matter, nervous syphilis, or upon neurological surgery; these fields have been well covered by a recent article in the *Journal* by Dr. Pierce Clark.

SOME MANIFESTATIONS OF INFLUENZA IN YOUNG CHILDREN.*

By L. EMMETT HOLT, M.D.,

IT is with some hesitation that one ventures to present a paper on so trite a subject as that of influenza, a term so widely used as a cloak for our ignorance of the explanation of obscure symptoms. I believe, however, that we are now in a position to clear up some of the haze which surrounds this subject and to chart some points at least in this indefinite sea of symptoms. That the term is constantly abused does not prove that there is no such thing as influenza. The same could formerly have been said of malaria. By influenza we mean an infection or inflammation due to Pfeiffer's bacillus, and only in this sense is the term used in this paper. The organism is one of those associated with inflammations of the respiratory tract and affects chiefly the lower tract, the trachea, bronchi and lungs, less frequently the upper respiratory tract, the nasopharynx and ears. To apply the term influenza to an ordinary, severe head cold is a misnomer; in very few cases is this organism found. As a rule, the B. influenzæ has not a high degree of virulence, but in exceptional instances this may be the case. At such times it may cause a general blood infection and not infrequently meningitis, more rarely joint inflammations.

The diagnosis of influenza is established only by finding the organism in the secretions; usually it must be the bronchial secretion. This renders its discovery difficult in

* Read at the Annual Meeting of the Medical Society of the State of New York, April 28, 1914.

young children. The bronchial secretion is not easy to secure. These patients will not cough and expectorate when desired, and sometimes several trials must be made before satisfactory material for cultures is obtained. The best way of accomplishing this in infants is to excite a cough by tickling the pharynx and to catch upon a pharyngeal swab any secretion brought up from the bronchi.

A diagnosis by the examination of smears is unreliable. Only cultures can be depended upon. It should be remembered that the B. influenzæ grows only upon media containing haemoglobin (blood agar being that generally employed), so that cultures made upon ordinary diphtheria tubes are of no value. The difficulties of isolating the organism, even in cultures, are considerable, and outside of a good hospital laboratory the work can hardly be done satisfactorily on any extensive scale. Hence it is not surprising that so few observations upon the definite diagnosis of influenza have been made.

At the Babies' Hospital during the past five years we have been greatly interested in the study of the bacteriology of respiratory infections. The accompanying table gives the

Sputum Cultures for Five Years.

	1909-10	1910-11	1911-12	1912-13	1913-14
	%	%	%	%	%
B. Influenzæ...	32.5	32	33	28	42
Pneumococcus .	62.5	66	81	80	87
Streptococcus ..	33.5	37	46	43	29
Staphylococcus.	76.2	76	89	90	84

results obtained from 1,650 sputum cultures which have been made from 1,053 patients during the winter and spring seasons of this period. It shows the percentage of cases in which the different organisms, the pneumococcus, the streptococcus, the staphylococcus and B. influenzæ, have been present in the different seasons. While there is seen a general correspondence in the different years it will be noted that there has been an unusual prevalence of influenza during the present season. This has been particularly true during the months of March and April. Our observations for the past five years indicate that influenza begins as the cold weather approaches, usually toward the end of October, but that it is not very frequent until after January. The spring months are usually the time when it is most often seen. Also that it disappears regularly with the advent of warm weather, about the middle of May. Pneumococcus infections do not follow the same course, but are common during the year.

What does the presence of the B. influenzæ in the sputum signify? Some have said that it signified nothing; that the organism can hardly be regarded as pathogenic. Although this view was formerly held by many pathologists there are now few who maintain it. The occurrence of an acute purulent meningitis in which this is the only organism found and the production of a similar inflammation by its injection in animals with recovery of the organism, certainly establishes the fact of pathogenicity.

The B. influenzæ is only one of the common organisms associated with respiratory infections. It is seldom seen alone and it is therefore difficult to determine exactly which of the symptoms present may be fairly attributed to it. It is only by the study of a large number of cases in which the organism is found that this point can be settled.

Probably the most significant manifestation of influenza is a peculiar range of temperature. The variations seen are most puzzling and frequently wrongly interpreted. They often give the physician the greatest concern, especially since they occur so frequently in the course of pneumonia or otitis, they may lead to a suspicion that some serious complication, either medical or surgical, is present. The temperature is apt to be high, to fluctuate widely and irregularly without apparent cause. Its rise is sharp, but without chills; in its fall, which is quite as rapid, it frequently goes to subnormal. The want of correspondence between the general symptoms and the temperature is quite diagnostic. I know of no disease in which such high temperatures are seen with so few general symptoms as in influenza.

From our experience at the Babies' Hospital several definite clinical types stand out:

1. Pneumonias with unusual, often extraordinary, fluctuations of temperature or with a persistence of temperature after physical signs have disappeared.

2. Pneumonias running a protracted course, with slow resolution. Frequently there are recurring attacks.

3. Cases of otitis with very mild catarrhal symptoms, often only a moderate cough and a few coarse rales in the chest, but with a temperature quite out of proportion to the general or local symptoms.

4. Cases with very few or no catarrhal symptoms whatever, but with a very unusual temperature curve.

5. Unusual temperature curves accompanying tuberculosis and sometimes other diseases.

6. Cases resembling whooping cough, seen chiefly in older children, seldom in infants.

Let us consider this last-mentioned group first.

Pfeiffer's bacillus has many points of likeness to Bordet's bacillus. There are also clinical resemblances between whooping cough and influenza which I think have not been sufficiently appreciated. Influenza often persists for from six to eight weeks; it may be characterized by a paroxysmal cough, which is so like the paroxysms of pertussis that at times the two are indistinguishable. It is my own

belief that most of the children who are reported to have recurrent attacks of whooping cough have in reality suffered from influenza.

There are some points of differential diagnosis which we may pause here to mention. The blood picture in whooping cough is quite different from that seen in influenza. Influenza without catarrhal symptoms is seldom seen, and then it has a relatively low leucocyte count, but with its usual bronchitis there is a leucocytosis of 18,000 to 30,000, the differential count showing sixty to seventy per cent of polymorphonuclears. In whooping cough there is a leucocytosis of about the same degree, but a very high lymphocyte percentage is regularly present.

Another point of resemblance is the contagious character of influenza and the fact that there may be in the same family two or three children with identical symptoms. A few years ago three children in a family all had at the same time typical whooping cough. During the following year all three developed a protracted paroxysmal cough, which, except for the previous year's experience, would unquestionably have been regarded as whooping cough. Sputum cultures from all three during the second season, however, showed the presence of the influenza organism. During the past few weeks a resident in a hospital where influenza was prevalent developed a paroxysmal cough of such severity that vomiting occurred two or three times a day. One physician who saw him made an unqualified diagnosis of whooping cough. His blood, however, showed 19,000 leucocytes with sixty-eight per cent of polymorphonuclears and his sputum contained great numbers of the influenza organisms, but not Bordet's bacillus, although careful examination for it was made. I think, therefore, that we should be extremely cautious in making the diagnosis of recurring attacks of whooping cough.

Since January, but especially during the months of March and April of this year, an unusual amount of influenza has been seen in the Babies' Hospital. In consequence of this, on April 19 and 20, sputum cultures were made from all the hospital inmates—doctors, nurses and patients.

Of ninety persons examined thirty-one showed the presence of influenza at this examination and three others had shown it previously, making a total of thirty-four infected persons, or thirty-eight per cent.

The most marked prevalence of influenza was in the wards in which the patients with bronchitis and pneumonia were received. In two such wards, containing twenty-one patients, ten had influenza. Of eight nurses in attendance in these wards five showed influenza. Six of the patients were suffering from bronchopneumonia, three others previously had slight temperatures not explained by the other symptoms present; a fourth case, one of tuberculous meningitis, showed only a few influenza organisms. Two nurses had no symptoms suggesting influenza infection, but one, shortly after the culture was taken, developed a severe cold; the other three were suffering from catarrhal symptoms of various degrees of severity.

A nurse in charge of a special ward containing three children who were suffering from influenza showed the organism in her sputum. She had previously suffered from a mild cold.

Of the remaining twenty-five nurses in the hospital only four showed the B. influenzæ, and three of these had suffered from colds or a nasopharyngeal infection.

The resident physician had a severe paroxysmal cough and his sputum showed great numbers of influenza bacilli.

Of ten cases of pneumonia in the hospital at the time of the routine examination the sputum of eight showed the B. influenzæ. Of eight children admitted with pneumonia during the week following, five gave positive influenza cultures. Since the number of children admitted with influenza is so large the presumption is that the nurses contracted it from these children and then possibly spread the infection to others.

An unusual prevalence of influenza has been noted in some other institutions in the city where careful sputum cultures have been made. Dr. Swift, of the Rockefeller Institute Hospital, informs me that of thirteen pneumonia patients during the first three weeks of April eight showed the presence of the B. influenzæ in the sputum cultures.

That the temperature curve and the course of pneumonia is influenced by the influenza complication, no one looking over these charts can for a moment question.

There are still many points to be settled regarding influenza infections. To call every case having an unusual temperature one of influenza is certainly a serious error; but that this infection causes very remarkable fluctuations of temperature in respiratory infections should certainly be recognized. Such temperature curves, I believe, are constantly misinterpreted.

Uncomplicated influenza has a good prognosis; but when influenza occurs as a complication of pneumonia it certainly increases the danger of that disease, particularly on account of the tendency to prolong its course and to increase the liability to recurrent attacks. One never can be quite sure when these patients are entirely well. The influenza organism we have found to persist for months in the sputum of children and during this time there was a constant tendency to recurrence of the catarrhal symptoms of greater or less severity.

Of treatment there is little to be said. Thus far it has seemed to me quite unsatisfactory.

Its definite contagious character certainly increases the necessity for isolation. This is difficult to maintain, both in a hospital and a household, where nearly always there are several cases in a family. In hospital practice I am convinced that we have been negligent in not paying much greater attention to the separation of these cases from other inmates, for the added risks following infection in children are certainly considerable, not so much from the disease itself as from the complications with which it may be associated.

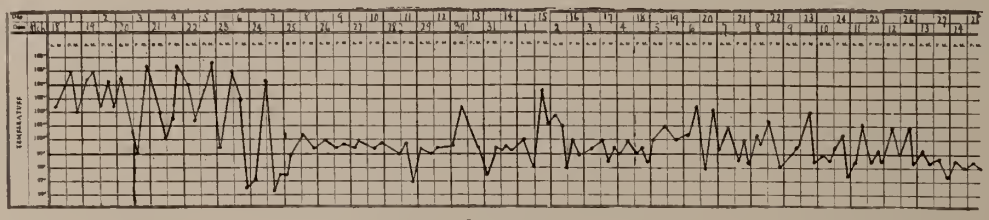


Chart I Pneumonia.

Cases of respiratory infections complicated by influenza are, in my experience, seldom benefited by cold air, although fresh air certainly is needed. They invariably improve when the warm days of spring come. If symptoms persist it is desirable to send children South to a warm climate. With others the plan of "watchful waiting" seems to give the most satisfactory results.

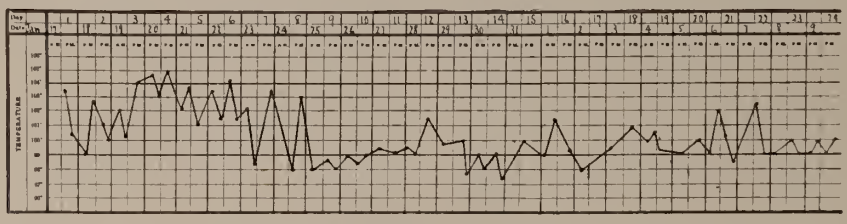


Chart II Pneumonia.

The accompanying charts illustrate the most frequent types of temperature seen in influenza cases. With one exception all of the patients have been observed during the past few weeks.

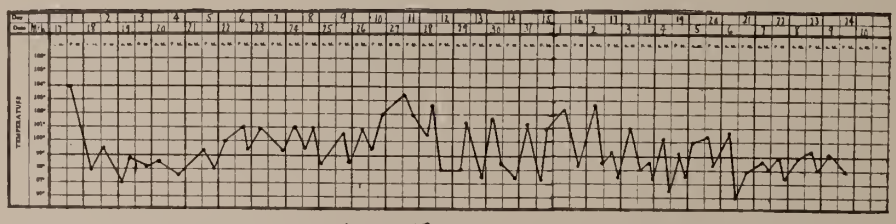


Chart III Pneumonia

In none of these cases were any antipyretics given or any measures employed for an artificial reduction of the temperature. In all cases a careful examination was made of the urine, the ears, the digestive tract and the other organs to determine if possible whether there was any other factor present which might explain the temperature. The diagnosis of influenza was not admitted until all these had been excluded. In every case the diagnosis rested upon the finding of the influenza organism in numbers in the sputum cultures, and in most cases they were found repeatedly. The evidence seemed conclusive that influenza infection was a factor in the production of the clinical symptoms.

Case I was a well-nourished child of fourteen months, admitted with a lobar pneumonia at the left base; signs of resolution appeared shortly after the crisis, but the resolution was slow. The temperature continued some time after the lungs were clear. Influenza organisms were found in the sputum both during the height of the pneumonia and subsequently.

Case II was a well-nourished child of seven months, admitted on the twelfth day of his illness with a circumscribed consolidation of the right lower lobe. The only unusual feature was the irregular temperature curve. The lungs cleared up rapidly after the crisis. The influenza organisms were found in the sputum early in the disease, but not after the lungs had cleared.

Case III was a small but fairly nourished child of nine months, admitted in the third week of a pneumonia of the right apex; physical signs were typical. The temperature fell by crisis the day after admission. The early sputum cultures showed no influenza. The subsequent rise of temperature was accompanied by an increase in the catarrhal symptoms which followed a partial resolution, and

at this time the sputum culture showed the influenza organism. In this case the child appeared to have contracted the infection in the hospital, as he occupied a bed next to a child who was found to have an influenza infection.

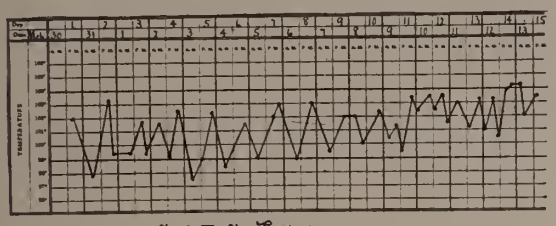


Chart II Tbc Peritonitis

Case IV was one of tuberculous peritonitis. The symptoms were typical, but no satisfactory explanation could be found for the unusual temperature curve. Frequent and repeated examination of the lungs and other organs showed no generalized tuberculosis, but, as influenza organs were present in the sputum in numbers, this was suspected. At autopsy there was no sign of a generalized tuberculosis, the lesions being essentially those of a tuberculous peritonitis only.

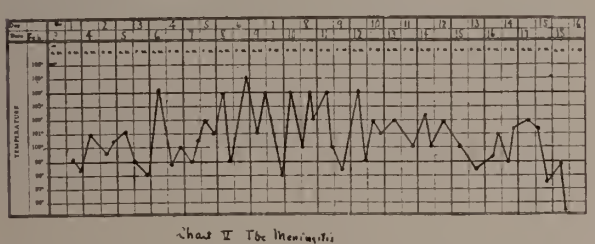


Chart V Tbc Meningitis

Case V was an infant five months old, admitted with the diagnosis of tuberculous meningitis. A clear fluid was drawn by lumbar puncture which contained a large number of cells, chiefly lymphocytes and tubercle bacilli. On the third day the temperature rose and continued high and fluctuating until death. The clinical symptoms resembled those of a cerebro-spinal meningitis. A blood culture and a culture from the sputum both showed the B. influenzæ; the spinal fluid remained clear, but a smear contained a few organisms resembling influenza bacilli. The autopsy showed a tuberculous meningitis at the base and a purulent meningitis at the convexity from which the influenza organism was obtained in pure culture. This case has been fully reported elsewhere.

Case VI is that of a child nineteen months old, who was admitted to the hospital as a case of mental deficiency. Neither cough nor fever had previously been present, nor were they present during the illness. On the day of admission the temperature was found to be 102° and quickly rose to 106½°. There was a leucocytosis of 20,000 with sixty-six per cent of polymorphonuclears. The lumbar puncture was negative as well as the examination of the other organs. With this high temperature the child did not appear very ill, and when the temperature fell to or near normal the symptoms had quite disappeared. A second rise occurred a few days later with a repetition of the original symptoms and also without any special prostration. At this time also careful examination of lungs, urine, ears, were all negative.

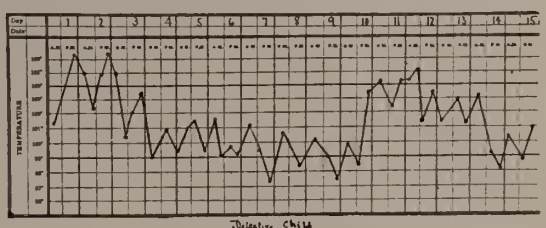


Chart II Defective Child No Catarrhal Symptoms

Case VII was that of a delicate infant nine months old, admitted with a second attack of bronchitis, having been ill for a week. Otitis developed and double paracentesis was done on the third day, repeated again on the tenth. The left ear was again opened on the twelfth and the twenty-fourth day. No explanation for the wide fluctuations in temperature could be discovered except the influenza, the sputum cultures showing the presence of the organisms. A small spot of pneumonia developed on the eighteenth day. Death occurred on the forty-fourth day. The autopsy showed no disease of the mastoid or of the sinus, but the cultures from the lungs showed the B. influenzæ and the pneumococcus.

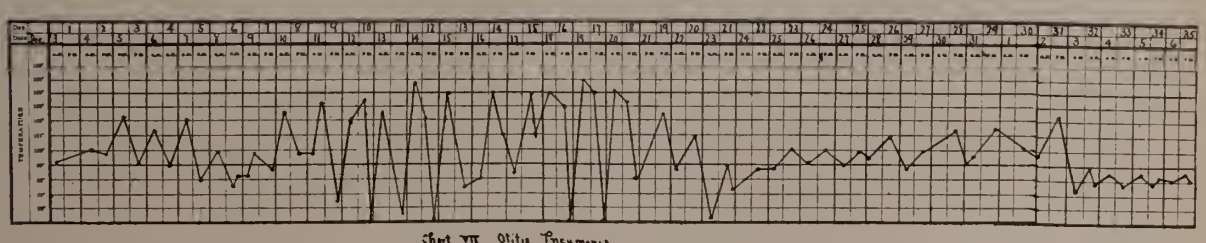


Chart XII Otitis Pneumonia

Discussion.

Dr. Linnaeus E. La Fetra, New York City: In the study of catarrhal infection of infants and young children there is great difficulty in determining the precise cause of infection, because several germs are usually present, and one must judge which is predominating.

Moreover, few clinicians have the facilities for proper bacteriological study. Careful technique is particularly important with reference to the influenza bacillus, for it does not grow readily and seems easily to lose its vitality, especially if dried. Dr. Holt is particularly fortunate in having been able to study both clinically and bacteriologically such a large series of cases.

For a number of years it has seemed probable that a certain type of fever accompanying catarrhal infection in infants and children is due in many cases to the influenza bacillus. It is characterized by wide vacillations of temperature each day. I have seen it range from 106° to 94° in thirty-six hours. In many such instances the influenza bacillus has been found either alone or more commonly associated with others. It is fair to conclude that many other cases of analogous type in which bacteriological study was not made are probably due to the same cause. The general symptoms are fever and prostration, the fever being of the peculiar hectic type suggestive of deep suppuration. The prostration is quite marked, but the child's color does not suggest either suppuration or sepsis, and in the intervals when the temperature is low the child seems surprisingly well. The blood count shows an increased number of leucocytes with a high polynuclear count. With many infants this peculiar temperature and prostration are the only signs found throughout the course of the disease, there being no catarrhal symptoms whatever and no inflammation of the throat or of the ears. It would seem that the child was suffering simply from the general infection without localization. Such cases are very puzzling and are commonly attributed to a deep-seated pneumonia.

"Whooping bronchitis" is very interesting and it is certainly due in many cases to influenza; the catarrh of the lower trachea gives rise to the paroxysmal cough, often accompanied by a whoop.

Other types of the disease depend upon the addition of various local symptoms, such as gastro-intestinal catarrh, otitis media, in combination with catarrh of the upper respiratory tract. It is exceedingly important to remember this influenzal type of fever, since the wide range of temperature may suggest either serious mastoid involvement or the presence of sinus thrombosis. In this connection it is important to call attention to the fact that single blood counts, taken in connection with the high and widely fluctuating temperature, should not be relied upon for guidance as to the advisability of operation on the mastoid when there is influenzal otitis-media. The leucocyte count may be high, up to 15,000, and the polymonuclears may constitute seventy or eighty per cent without there being any involvement of the mastoid or of the sinus. Only if and when local signs in the ear canal and bone tenderness are present should the mastoid be operated upon. General symptoms of fever, prostration and high blood count are not a justification for operation.

Besides the catarrhal symptoms of the respiratory or gastro-intestinal tract a frequent manifestation is involvement of the lymph nodes of the neck. So long as the glands remain soft there is danger of another outbreak of fever or other complication, either in the lungs, ears or even in the meninges. One should be cautious about predicting a termination of the fever so long as the enlarged glands are present.

A rare and most unfortunate manifestation of influenza, either primary or as a complication, is meningitis. I have seen three such cases in the past five years and each presented features worthy of report. In the first of these cases the primary manifestation of trouble was a swelling of the small joints of the hands. This occurred in an infant eleven months old. Later other joints became involved and there was great prostration, with a vacillating temperature. There were very few evidences of meningitis, so that a lumbar puncture was not made. At the autopsy the joints and the brain showed a purulent exudate, which gave a few cultures of the influenza bacilli. Similar cases with joint involvement have been reported. The second case occurred in a boy of nine years and was seen by Dr. Holt also. This case began with a severe rhinitis, but soon presented an exact picture of cerebro-spinal meningitis of the epidemic type. Lumbar puncture withdrew a purulent fluid that gave a pure culture of influenza bacilli. Influenza organisms were recovered also from the secretions of the nasopharynx. Several other members of the family had had severe attacks of the grippe. The third case occurred last fall in my service at Bellevue Hospital. The patient was a nursing baby five months old. The first manifestation was a convulsion and the symptoms were those of a mild case of epidemic cerebro-spinal meningitis. The spinal fluid was turbid and so for two days after admission the ordinary anti-meningococcus serum was injected. There was, however, no improvement and the growth did not prove to be the meningococcus, but the influenza bacillus. Study of the spinal fluid at the Rockefeller Institute confirmed this finding and accordingly the anti-influenza serum was injected. This was not, however, until the tenth day after admission to the hospital and the quantity that could be injected within the next four days was very small on account of the local conditions in the spinal cord. The child failed rapidly and died on the fourteenth day after admission.

Dr. H. L. K. Shaw, Albany: Smears from the nasal and tracheal secretions in forty infants at St. Margaret's Hospital with catarrhal

colds showed pneumococci. The reason why the influenza bacilli were not detected was due perhaps to the fact that no cultures were made. Recently I saw an infant with meningitis whose lumbar fluid showed a pure culture of influenza bacilli. An interesting feature of the case was that there were no previous symptoms of influenza in the baby or in any members of the family.

Dr. Herman Schwarz, New York City: Dr. Williams, of the research department for the New York health department, showed that in measles, scarlet fever, and other infections, the presence of influenza bacilli in secretions of the throat was more frequent in the winter time than during the summer.

It is interesting to note that the cultures from the middle ears in cases of influenza did not contain influenza bacilli. The cases complicated by glands did not show the presence of influenza bacilli in suppurative process of these structures.

Dr. DeWitt H. Sherman, Buffalo, asked Dr. Holt in reference to the prostration so commonly considered necessary as a sequellæ in influenza. He stated that in Buffalo this winter there had been a great deal of an infection associated with marked vacillation of temperature. When the temperature was high, whether morning or afternoon, the child felt ill, but when the temperature was low it felt almost perfectly well and wished to be up and about. These cases seemed to be influenza, but contrary to expectation made a prompt, complete recovery.

RECURRENT BRONCHITIS IN CHILDREN.*

By CHARLES GILMORE KERLEY, M.D.,
NEW YORK.

By recurrent bronchitis we are to be understood as including those cases of illness in which there are attacks of bronchitis with severe cough, often with bronchial spasm. A small proportion of the cases suffer from true asthma. Fever, while sometimes present, is not necessarily a part of the disorder. The child is brought with the story that there are frequent colds and cough and bronchitis. The bronchitis is usually of an asthmatic type, that one attack is barely recovered from before another supervenes, sufficient in many cases to entail chronic invalidism, preventing, or seriously interfering with, attendance at school. The repeated illnesses entail a housing and loss of appetite, which, in the process of time, may result in defective growth and development. Usually but not invariably the child is free from trouble during the summer, but with the advent of autumn the so-called colds begin. These cases are to be differentiated from the usual infectious colds, bronchitis and influenza that in these disorders there is fever, prostration and loss of appetite. Of course there may be at times an associated infection, but in the vast majority of the attacks in a given case such symptoms are not present.

As time passed and as a great many cases of this type were encountered, it was impressed upon me that there must be some common ground, some similar constitutional state that rendered these children subject to the attacks, that rendered them unable to stand the usual exposure which failed to affect other children. Through comparison of the cases and investigation of the family histories, it appeared to me that I could set apart these children, that they could be grouped in a class having several features in common. It was found that a considerable proportion of the patients had been difficult feeders in infancy, that bottle-feeding had been unusually troublesome.

It was also found that not a few were subject to or had had eczema. It was found that recurrent vomiting and so-called bilious attacks were not uncommon, and that many of the patients were the offspring of those who had suffered from disorders of metabolism, such as gout, rheumatism, periodic headache, so-called bilious attacks and chronic eczema.

They were very apt to have a habitually coated tongue and rarely possessed a vigorous appetite. There are here no constant gastro-enteric symptoms. There was here no constant urinary changes. By observation and acquaintance with the peculiarities of a great many cases, it was demonstrated that these children bore cow's milk fat badly. In not a few cases it was given in but small amounts or did not agree. It was also found that these children bore sugar badly, attacks being precipitated by free indulgences. The influence of butter, fat, and sugar was also shown by the gratifying relief of the patient when these substances were largely removed from the diet. There appeared to be a faulty oxidation, the child showed but a limited capacity for the oxidation of these high carbon foods; their complete conversion into energy CO_2 and metabolic water was not possible, intermediary, at present, indeterminate toxic products were the outcome which become manifest in different ways, and one of these ways appeared to be a lessening of resistance of or an establishment of an unusual irritability upon the respiratory tract.

These cases are similar to other periodic illnesses, such as recurrent vomiting, recurrent periodic fever with acetonuria, recurrent eczema, in that the attacks are more apt to occur during the colder months, when the elimination by the skin is less active and when muscular exercises is more in abeyance.

Among 141 cases of recurrent vomiting forty-one per cent suffered from recurrent colds.

The so-called catching of cold because of cold

* Read at the Annual Meeting of the Medical Society of the State of New York, April 30, 1914.

and inclement weather is much less a factor in these than has been supposed because when the patients are fed and managed right, the weather has but little influence, just about as much as it has in a periodic fever, with acetonuria. Again, not a few of these cases will have the periodic colds during the summer as in Case II.

In short we have demonstrated clinically that these cases of recurrent coughs with bronchitis, usually with spasm, are the result of a systemic intoxication, due to the use of certain food substances which the organism is incapable of properly accommodating. As an associated factor, defective skin elimination and absence of adequate muscle exercise are contributory causes.

I have had to treat a great many of these cases during the past few years, and, while I have met with flat failures, in the vast majority of cases, probably ninety-five per cent, the results have been most gratifying.

Management.—Believing that our trouble basically is largely a matter of food intoxication, of a definite type, the source of the intoxication is removed. The average child after the sixth year receives two or three times as much energy food as he requires.

Milk and sugar are not indispensable for any child after the fifteenth month. I have brought up several children without cow's milk, and they differ in no way today in their development from other children.

Cane sugar was not cultivated until three hundred years ago and as late as the sixteenth century it was used largely as a condiment, as honey is used at the present time. Countless millons existed and lived their span of life without it. Now we require forty pounds a year per capita. It requires no great strain upon the imagination to believe that the introduction of so large an amount of a highly energized food in excess of demands might produce ailments of a very definite character.

In an elaborate treatise on sugar, published in 1800, Benjamin Moseley quotes a statement of Theophratus, who lived 321 B. C., explaining that "the generation of honey is not only from flowers, but also from canes or reeds." Moseley thereupon cites the writings of numerous celebrities (including Nearchus, Alexander's admiral, Varro, Dionysius Afer, Strabo, Seneca Lucan and Pliny, and covering a period from 325 B. C. to the end of the first century of our era) to show that the sweet juice of the cane was appreciated as a beverage and flavoring agent in Egypt and India, long before the actual manufacture of sugar was evolved. From the East sugar in some form was early brought to Europe, and before the discovery of America, cane sugar was made on a considerable scale in the islands of the Mediterranean. From Spain and the Canaries, in turn, cultivation and manufacture from the cane were later extended to the West Indies and Brazil.

It is noteworthy that as the refined product came into common use, it was first employed only in medicine "to render unpleasant and nauseating drugs grateful to the sick." Gradually sugar was found of value in preserving fruits, and then added to tea, wine and various beverages, until its acceptability as food for the sick and its value as a source of energy in sustaining artificially fed infants came to be appreciated. Then only (about 1600) was the substance commonly recognized as a food.

What the end result has been cannot be better summarized than in the words of Moseley, written in 1800: "Two centuries have elapsed since it can be properly said that sugar has become an ingredient in the popular diet of Europe. Such is the influence of sugar that, once touching the nerves of taste, no person was ever known to have the power of relinquishing desire for it."

The recurrent bronchitic patients are cut off from sugar largely—entirely, if the case promises to be difficult. Cow's milk is omitted entirely if the case is obstinate, but skimmed milk is allowed. Time and again I have seen children, from three to six years of age, gain from three to six pounds after removing sugar from the diet and giving milk skimmed or none at all. An apparent handicap was removed, they would take more of other food and assimilate it. The carbohydrates and fats found in vegetables, cereals, bread stuffs and meats supply all the heat and energy required.

Clothing.—I usually advise that medium-weight underclothing or linen mesh be used. The child is given a warm bath at bed time, followed by a vigorous rubbing and sometimes massage.

Inasmuch as the so-called lithæmic type is the individual most frequently affected, I give such children interval treatment with bi-carbonate of soda alone or with the salicylate of soda.

Bowel Function.—If habitual constipation is present a free daily evacuation of the bowels is insured by suitable treatment.

I will now present a few private cases, whose mothers have kindly consented to come here.

Case I.—This girl, six years of age, is a resident of Bay Ridge, Brooklyn. She came to me in October, 1912, because of attacks of bronchial asthma. The child had always been subject to frequent colds, and during the year previous to coming under observation there had been frequent and severe attacks of bronchitis with asthma. In fact, there was almost constant bronchitis with exacerbation, so that there was very little time free from bronchitis, which was almost as troublesome during the summer as in the colder months. At the time of the examination there was impeded breathing, due to bronchial spasm. The appetite was poor. The child was fairly well nourished. The diet was that of the average child of six.

She was habitually tired and decidedly irritable. She was given a diet largely sugar-free and one pint of skimmed milk daily. Otherwise the food was that of an average child of six.

The medication consisted of Liq. Potassi Ars. gtt i ss and bicarbonate of soda gr. viii, three times a day for one month, and then this dosage was given on the alternate five days until July, 1913, when the medication was given five days, with ten-day intervals of rest. In August, 1913, the first attack under treatment occurred. There was a sharp attack of asthma with hard cough, but without fever. The day before the seizure she had been on a long sail with unusual fatigue. She was then given ten grains of bicarbonate of soda three times a day for five days in alternation with the arsenic and bicarbonate of soda. In October, 1913, there was a slight attack, keeping the child in the house for two days. Salicylate of soda, gr. iii to the dose, was then added to the arsenic and bicarbonate of soda mixture and given for ten days with a five-day rest period. In February, 1914, there was a cold with cough and some wheezing for three days. The mother volunteered the information that the colds came on when the medication was discontinued. The child developed a cough in April, not enough to confine her to the house. The child has passed through the present winter, 1913-1914, with but three days indoors, and from 1912 to 1913 with eight days indoors. This in comparison with her former record of persistent bronchitis with acute exacerbation makes the result a most satisfactory one.

Case II.—This girl, six and one-half years of age, came to me in October, 1913. She is a resident of Westchester County. She was fairly well nourished. Examination showed moderate bronchitis. The child came because for the past six months she had attacks of bronchitis with asthma about every ten days, the longest period free from attack being one month. She was irritable and hard to manage. During the ten days preceding her visit to me, there had been three sharp attacks and remissions. She was given a sugar-free diet and skimmed milk, one pint daily was allowed. Saccharin was used for sweetening purposes. Medication was as follows: soda bicarbonate, gr. viii, soda salicylate, gr. iii, three times a day. In November there was one attack of asthma lasting four days. In December she had one attack lasting one hour. In January, one attack lasting one hour. Medication reduced to three times daily at alternate five days.

Attacks up to date.—None since January, except one slight head cold. The gain in weight during this time has been five pounds. The mother tells me that she has not had the usual colds of other children in the family.

Case III.—This boy was five years of age when I saw him. He has suffered from practically a continuous cold for the past two winters. He was seen first on May 31, 1913, with the story that since November, 1912, there had been practically continuous bronchitis. Both tonsils were enlarged, and a moderate adenoid growth was present. He was given a reduced sugar and reduced fat diet and ten grains of bicarbonate of soda three times a day. He was seen again in October. The bicarbonate of soda had been given rather irregularly during the summer. The boy's condition improved. He gained 2 1/4 pounds in weight. In November, 1913, there were two slight head colds, each lasting one day. During the entire six months that have intervened, the boy has been well, without the employment of medication, but the mother has adhered very closely to the diet, giving skimmed milk, eight to sixteen ounces daily and no sugar. The tonsils and adenoids were not removed.

Case IV.—This boy consulted me in January, 1912, when————years old, because of continuous colds and coughs and attacks of bronchial asthma. This condition had existed for three years. The respiratory explosions were varied occasionally with attacks of recurrent vomiting, and periodic fever. In February adenoids and tonsils were removed with the hope of alleviating some of the symptoms. Some improvement followed the operation, but in November I again saw him, and the story was that of the former trouble returning worse than before. The seizures were represented in repeated asthmatic seizures, and a most severe persistent cough was most distressing. The diet and treatment suggested had not been carried out. I explained to the parents that I was much interested and would treat the child gratuitously if they would follow directions absolutely. At the time the boy weighed fifty-five pounds. Red blood cells were 4,300,000 and hæmoglobin sixty per cent. He was given reduced fat and sugar diet, skimmed milk and a very scanty amount of sugar was allowed. He was given three grains of salicylate of soda and eight grains of bicarbonate of soda three times a day with five days interval of rest. For tonic purposes he was given one-half grain Park Davis & Co.'s thyroid extract twice a day. On April 3d he weighed sixty-one pounds, having gained 6 1/2 pounds in 4 1/2 months on the reduced diet. He has not been ill in bed all winter and has missed not one day in school. In fact the entire habit of life of the child has been revolutionized.

Case V.—A girl, aged eight years, was brought to me by Dr. Bernstein on January 21, 1914 (she is unable to be here because of an accident). For the past five years there had been almost a continuous cough, often attacks of bronchitis, one attack followed very soon by another. For three years she "coughed almost incessantly at night." The child's general condition was fair. The chest examination showed bronchitis of the asthmatic type, delayed inspiration, prolonged expiration and many mucous and sibilant rales, a very familiar picture. The child had eczema and urticaria repeatedly and showed scratch marks involving most of the trunk. There has been repeated periodic vomiting seizures with high fever; as high as 105° F.

The breath is usually offensive, tongue habitually coated.

Treatment.—Absolute sugar-free diet, saccharine used instead. Skimmed milk only. Given liquid potassi ars., gtt. 1 1/2; soda salicylate, gr. iv; soda bicarbonate, gr. viii, three times a day continuously. Pine needle oil vapor used at night.

On February 4th, the history states, that the cough ceased gradually after beginning treatment. No bronchitis or fever. There has been one attack of hives. Medication reduced to two doses a day.

Child not seen until April 25th. History as follows: No cough until the past week. Now coughing a little at night. Mother thinks she caught a cold. No medication the past two weeks. Out of doors every day. Previously was kept in a greater part of the time because of the continuous performance of colds. Gained three-fourths of a pound in weight. Tonsils and adenoids were removed two years before without improvement in colds. Mother states that child is better than ever before in her life.

Case VI.—This girl, age 7 1/2 years, I saw at her home on January 30, 1914. I found her in bed where she had been a greater part of the time since November 1, 1913. She was indoors from November 1st to Christmas but for two weeks. Then she had another cold and had been in bed until my visit. She was well nourished but pale. The colds and bronchitis had been very troublesome for 3 1/2 years.

There was but little bronchitis at the time of my visit, but there was a severe cough. The only other complaint was indefinite muscle pains.

The child had been getting whole milk, ice cream and sugar freely. These were all discontinued, and she was given skimmed milk, and saccharine instead of sugar. The cough ceased promptly and the rheumatic pains subsided. For the three months, February, March and April, the girl has been perfectly well and out of doors every day. She has gained 1 1/2 pounds in weight. There has been an eight per cent increase in the hæmoglobin and 500,000 in the red cells. The diet has been rigidly adhered to.

The medication consisted of three grains of salicylate of soda in eight grains of bicarbonate of soda, both of which were discontinued after one month.

Case VIII.—This girl, 8 1/2 years of age, was brought because of repeated colds, of not a very severe type, but seriously interfering with school duties. These have entirely ceased. There has been no sign of trouble since January when the treatment was instituted and no loss of time at school. She was given the salicylate and bicarbonate treatment with a scant sugar and non-milk diet. In three months under treatment she has gained three pounds in weight on the so-called starvation diet.

A noticeable feature of these cases is the improvement in weight, blood and the general physical and mental condition of the patient. The child feels bodily well, a handicap has been removed and he is well and naturally happy. In about fifty per cent of this type of patient the adenoids and tonsils had been previously removed.

Discussion.

Dr. Charles Herrman, New York City: In 1905 (Jahrb. F. Kinderheilk, Volume 61) Czerny of Berlin, described, under the title "The Exudative Diathesis," a congenital constitutional anomaly, the chief characteristic of which was a peculiar sensibility of the skin and mucous membranes to an exudative inflammatory condition, which manifested itself in the form of eczema, intertrigo, papular urticaria, a geographical tongue, rhinitis laryngitis and bronchitis of the recurring or asthmatic type. In his original communications Czerny did not mention manifestations in the mucous membrane of the gastro-intestinal and genito-urinary tract. Since that time, however, these have been added. I believe therefore that it will be better to consider these attacks of recurring bronchitis as simply one manifestation of the "Exudative Diathesis." The condition may be compared in some respects to measles, the cutaneous and mucous membrane manifestations may differ somewhat in character and intensity in different individuals. In measles also the appearance of the eruption on the skin and the manifestations on the buccal mucous membrane, palate and gums differ, but this difference in appearance is due to the difference in the structure of the tissues involved and to the different manner in which these react to the same imitating agent.

In a paper read before the American Pediatric Society, in 1911, I described recurring attacks of loose mucous stools in patients, presenting other symptoms of the "Exudative Diathesis." Langstein has also described such cases and Dr. Kerley cites a few in his recent work on Pediatrics. In the same paper attention was called to the frequency of sprue in infants who later showed other manifestation of this diathesis. Czerny in a recent discussion also mentions this association. Finally the blood shows a distinct eosinophilia in those patients who present cutaneous manifestations and in those with attacks of bronchitis of the recurring and asthmatic type (Rosenstern, Benfey, Knoll-Lifschütz).

In his original papers Czerny outlined the dietetic treatment of these cases as follows: For young infants, breast feeding should if possible be continued. If cow's milk must be given it should be in smaller quantity and low in fat. No sugar should be added. Cereals and broths should be given early. For older children, cereals and vegetables, very little milk, no cream or butter, no sugar or eggs.

In their valuable monograph on "Vagotonia," Eppinger and Hess include the manifestations of the "Exudative Diathesis" in infants as due

to vagotonia. On this basis, Krasnogorski (Monatschr. f. Kinderheilk, XII, p. 129) has given atropine in these cases with excellent results, especially in those with eczema and recurring bronchitis. As pointed out by Jacobi many years ago, in order to obtain beneficial effects in children it is necessary to give this drug until physiological effects are observed. It is remarkable what large doses may be given if gradually increased. I have used this treatment in a few patients with very satisfactory results.

A word with regard to the removal of adenoids and enlarged tonsils, which are frequently present in these patients. When we remember that we are dealing with a congenital constitutional anomaly, and that the mucous membranes still retain their peculiar sensibility, after the removal of the adenoids and tonsils it is not surprising that the child should continue to have its attacks of rhinitis, pharyngitis and bronchitis. In these patients dietetic and hygienic treatment are more important than surgical and medicinal treatment.

Dr. De Witt H. Sherman, Buffalo: It is most interesting to learn of the influence of toxicity due to gastro-intestinal fermentation upon the upper respiratory tract. The focal point of this intoxication seems to center on the follicles associated with changes in the mucous membranes, not inflammatory in type.

In those cases I have seen a reduction in sugars or in fats, either one, often productive of good results.

Is not the name chronic bronchitis a misnomer? Does not the trouble lie more in the follicles at the base of the tongue or other adjacent parts? I speak of this, since local treatment is so beneficial.

Dr. Kerley mentions rheumatic pains relieved by reduction of sugar and fat, allowing a moderate amount of skim milk. Do I understand that he considers the rheumatic pains to be relieved by the rather high proteid diet he seems to give, or due to the alkalies and salicylates he gives in association with the diet?

Dr. Kerley, in closing the discussion: I have not observed that the children are peculiarly susceptible to conjunctivitis. The gastric intestinal association is a negative one. There is usually a coated tongue but no constant gastro-intestinal error as evidenced by urine or stool characteristics.

Inhalations were given only for the relief of symptoms and have no bearing on the condition in general.

The whole management is a matter of prophylaxis in removing a food excess which is a burden to any child and damage to some. A high proteid diet is not given; in fact a considerable proteid is withdrawn in a discontinuance or reduction in the milk used. In children of the so-called lithæmic type their general condition is improved in the use of alkalies, and incidentally, if they have growing pains, the condition is usually relieved.

THE EFFECT ON SUBSEQUENT LABORS OF OPERATIONS FOR UTERINE DISPLACEMENTS.*

By GEORGE W. KOSMAK, M.D.,
NEW YORK CITY.

THIS important question has been argued *pro* and *con* ever since the proposition was first made to cure uterine displacements by means of a variety of corrective procedures applied to the various suspensory ligaments of the uterus or the muscles of the pelvic floor. In all operations of this kind, the important fact to be borne in mind is their effect on subsequent labors. The necessity of such corrective operations are to be measured by the symptomatology. Where deviations from the normal position of the uterus produce disturbances, these undoubtedly demand correction, but after being cured they should not place the woman in a position where her life may be jeopardized in case of subsequent pregnancy.

The two great divisions into which we may divide cases demanding operative relief for malpositions of the uterus, are retroversion and procidentia. In every case the object is to restore the uterus as nearly as possible to its normal position. This result is accomplished by shortening one or more sets of the suspensory ligaments of the uterus or using these to secure new points of suspension. Artificial ligaments are likewise employed for this purpose and the necessity has now become quite generally recognized that if lacerations of the pelvic floor are present, these must be repaired. In addition, owing to the failure of some of these operative procedures to retain the uterus in its new position, other methods have been devised for this purpose which displace the organ to such a degree that under no circumstance could be considered normal, but which serves the purpose by causing the same to be retained in a position where it does not produce symptoms. Reference is here made to that particular class of operations in which the uterus is firmly fixed in a position below the bladder. The type of operative procedure depends somewhat on the age of the patient and whether she is still capable of bearing children. In certain cases it has, nevertheless, been thought necessary to actually sterilize the woman rather than have her become pregnant with the uterus in a position that did not permit of its proper growth during gestation. Unfortunately this care is not always exercised and we meet with cases of serious dystocia where the possibility of subsequent pregnancy has not been taken into account in doing the operation. It is my purpose to present certain abnormalities in labor as noted in a series of cases in which various operations for the relief of uterine displacement had previously been performed. These cases were observed either in private practice or in the wards of the Lying-In Hospital, and for the privilege to report the latter I am indebted

* Read at the Annual Meeting of the Medical Society of the State of New York, April 29, 1914.

to my chief, Dr. Asa B. Davis, of the Second Division.

The first class of cases concerned are those in which a retroverted uterus is corrected by means of the Kelly or Gilliam operation. The two cases herewith presented may be accepted as examples of a class which offer comparatively little resistance to normal labor except as noted.

Mrs. L., para III, had two moderately difficult labors. She was operated on by the writer in 1908 for retroversion with symptoms, and a Kelly suspension with anterior and posterior colporrhaphy done. She again became pregnant and was due October 4, 1910. She was comparatively free from any abdominal discomfort during her pregnancy and went into labor on September 22, 1910, slightly before the expected time. After being in strong labor for several hours an examination showed a thinned out cervix with four fingers dilatation and ruptured membranes. The head was slightly engaged but the uterine contractions seemed to force the same against the sacral promontory rather than into the pelvic canal. After a number of hours, however, assisted by pressure from above, the head descended and the child, which weighed about seven pounds, was finally born. A slight external laceration resulted.

One other case, also operated on by the writer, in which a Gilliam suspension operation was done, the patient complained of considerable pain of a tugging character during the last month of pregnancy. When the end of her term arrived a large child was found to be present but no signs of labor. In view of her previous difficult labors it was decided to initiate the process in this case. Voorhees' bags were accordingly inserted and pains started up promptly, but for a number of hours the head refused to engage, as it seemed that the contractions of the uterus were ineffective in pushing the same downward. As the abdominal wall was very relaxed it was possible to aid the engagement of the head by pressure from above and when this was once accomplished the delivery proceeded without any trouble. In these and similar cases reported by others, the only difficulty seemed to reside in the engagement of the head. When this was once complete the labor seemed to progress without difficulty.

In both of the personal cases referred to above, no adhesions resulted, as the uterus was found freely movable through a restricted area after the operation.

The second class of cases to be considered are those in which a fixation of the fundus of the uterus to the abdominal wall has occurred either by deliberate intention or accidental adhesions following the performance of a Gilliam, Kelly or similar suspensory operation. It will be seen that in this group the dystocia is somewhat more serious and an operative delivery is often found necessary to avoid dangerous consequences to the mother.

A typical case of this class is as follows:

Mrs. ——, Italian, para VIII, gave a history of having had an abdominal operation done three years previous to her present pregnancy, after which she had a living child without any trouble. The patient had gone into labor with weak pains on the afternoon of December 10th, when seen by a staff doctor from the Lying-In Hospital. Several hours later she had not made any progress and the pains had become tonic in character. I was called to the case and found on examination a poorly developed woman of medium stature with an abdominal enlargement extending up to the costal arch, consisting of a pregnant uterus in a state of tonic contraction. The fetal heart could be heard in the right lower quadrant and was of good character. The abdominal wall was very thin. Vaginal examination failed to reveal any cervix within reach, but under light chloroform anesthesia, the anterior vaginal wall was found markedly stretched and high up in the left lateral fornix a small opening was found into which the finger could be introduced. This was determined to be the external os and the greater portion of the uterus and its contents were over toward the right side. The uterus seemed firmly fixed and in a condition of tonic contraction. The high position of the cervix, the tonic uterine contractions, the fixation of the uterus, the exhausted condition of the patient and the liability to uterine rupture, determined the decision to send the patient to the hospital for delivery by Cesarean section. This was accordingly done. After opening the abdominal cavity the wall of the uterus was found to be very thin and the great tension present was shown by the forcible expulsion of the liquor amnii as soon as the uterus was incised. The child was readily extracted and lived. After removal of the placenta and membranes the uterus was sutured in the usual manner and contracted promptly. As it was impossible to restore the uterus to its normal position before incising the same, it was subsequently found that the Cesarean incision had been made in the right half of the anterior wall about an inch away from the insertion of the round ligament. The patient made a good recovery. On examining the uterus before closing the abdomen, a broad band of adhesions was found which firmly attached the anterior wall to the lower segment of the anterior abdominal wall and prevented a uniform enlargement of the organ.

In another case, the patient, a para III, gave a history of two previous labors in which forceps were employed. Some time after her second pregnancy a supposed ventral suspension operation was done. This patient went into labor at term and although she continued to have severe contractions for forty-eight hours, failed to cause any engagement of the head or dilatation of the cervix. At this time a large child in the L. O. A. position could be palpated with a fetal heart of good quality. The cervix was short and very firm so that it could not be dilated manually. The lower segment of the uterus, however, was

soft and thin. The head could be felt at the brim and was not engaged at all. The pelvis was normal in its measurements, but in view of the large child, the undilatable cervix and the difficulties attending the closure of the necessary incisions for a vaginal Cesarean section, the abdominal form of delivery was decided on. On opening the abdomen the uterus was found to be turned over to the left and broad, irregular bands of adhesions were found on the right side near the internal inguinal ring. A loop of intestine was also found in the angle between the lower uterine segment and the anterior abdominal wall, which was slightly adherent. After closing the uterine wound, the various adhesions present were ligated and cut in order to avoid any possible postoperative intestinal strangulation.

In addition to these cases others might be cited from the records of the hospital where dystocia resulted from some suspensory operation.

The third group of cases concerns those in which an interposition operation has been done without effective means having been taken to sterilize the patient at the time of the operation. Here the degree of dystocia is apt to prove of serious consequence to the mother, and the number of cases of this kind which have thus far been reported, constitute a serious warning to those who have done this operation without the usual precautionary measure referred to.

Mrs. M. D., a multipara, between six and seven months pregnant, stated that she began to bleed without apparent cause on the morning of April 19, 1913. She was not in labor when admitted to the Lying-In Hospital, about two hours subsequently. The vagina was full of blood clots and a search for the cervix disclosed the same at the extreme upper end of an elongated vagina in a position above the brim of the pelvis. It was very rigid, admitted one finger, and the canal was about two inches long. The cervix could not be pulled downward and free exploration showed the presence of a centrally situated placenta previa which had separated from the lower uterine segment. In view of the necessity for immediate delivery on account of the constant hemorrhage, an abdominal Cesarean was decided on and carried out. A small fetus was extracted which lived for a short time only. The placenta was found almost separated by the lower segment of the uterus over the cervix. The history subsequently obtained, showed that the patient had been operated upon less than a year previously for procidentia, the so-called interposition procedure being employed. Her last period extended from September 21 to 26, 1912, and was normal. The patient stated that she was well except for inability to urinate readily, and it was necessary to catheterize her several times. The patient made an uninterrupted recovery.

In December, 1913, the patient was seen by the writer again, and found to be about three months pregnant. She was bleeding slightly, and an examination disclosed the cervix in the same relative position as previously and slightly dilated. In view of the unfortunate outcome of the previous pregnancy in a uterus which had been subjected to an interposition operation and a Cesarean section, it was thought advisable to empty the uterus and at a subsequent time sterilize the patient. This was done in two stages. On opening the abdomen the bladder was found entirely over the uterus. The corneal ends of the tubes were also covered and could not be reached for purposes of excision. There were numerous adhesions present between the intestines and the posterior aspect of the uterus, resulting probably from the scar of the previous Cesarean operation which was evidently done through the posterior wall. The uterus was firmly fixed in its new position. The tubes were resected and the abdominal wall closed. The patient made an uninterrupted recovery.

After a recital of these personal cases, it may be opportune to refer at this point to a few out of many references to this subject in obstetric literature. Other references might be cited, but the following will sufficiently serve our purpose.

A. E. Giles (A Study of the After Results of Abdominal Operations on the Pelvic Organs, London, 1910), in discussing the influence of operations for uterine displacements on subsequent pregnancy in personally observed cases, states that out of 144 women operated upon during the child-bearing age, forty-eight, or one-third, became pregnant after the operation and between them had sixty deliveries. Thirty-five patients bore forty-four full term children and five had miscarriages. Giles believes that hysteropexy, as he calls it, really a ventral suspension, probably causes a slight predisposition to miscarriage, particularly when pregnancy ensues very soon after the operation. Out of forty-four full term confinements there were only four that presented any important complications; two of these were breech presentations with unusually large children and the other two were transverse presentations at seven months. Of the remaining forty, there were several in which forceps were used, one with a rigid cervix; but there is no reason to suppose that in all these cases the operation was responsible. As for the effect of pregnancy on ventral suspension, Giles believes that the results are usually as good as in cases where no pregnancy followed. As Giles believes fixation operations are contraindicated in every case, no statistics are available from his series of cases.

Küster (*Monatschr. f. Geb. u. Gynäk.*, Feb., 1914) recently reported a case of vagino fixation done five years before the last pregnancy, at which time the woman was thirty-five years of age, in which a prolonged labor resulted in the death of the child by attempts at delivery by craniotomy. The latter was carried out with difficulty and soon afterward the woman went into collapse. The autopsy showed the presence

of air in the right chambers of the heart, with extreme thinning out of the posterior uterine wall which had finally ruptured. Fixation in this case was undoubtedly the direct cause for the dystocia. In five other cases observed by the same author, a ventral fixation, and in six others in which a vagino fixation was done, the subsequent labors were observed. In all of the first group operative labors were required and likewise in the second. The writer does not agree with the claims made by Shauta and other foreign operators that a conservative course can be safely pursued.

DeLee (Principles and Practice of Obstetrics, Philadelphia, 1913), after referring to the comparatively slight effect of the various round ligament operations on pregnancy and labor, states that where adhesions of the uterus to the abdominal wall have resulted from ventro suspension or fixation, serious dystocia is possible. The following complications were noted in his own experience: abortion, shoulder and breech presentations, obstructed labor requiring Cesarean section, placenta previa, inertia uteri, retention of placenta and post-partum hemorrhage. He concludes that the frequency of these complications should forbid the practice of any form of ventral fixation in child-bearing women. The worst forms of dystocia occur in those cases where the fixation involves the fundus. Vagino fixation he considers equally serious during pregnancy, for the thinning of the posterior wall of the uterus and the extreme upward displacement of the cervix may lead to serious interference with the progress of labor and even induce uterine rupture.

Williams (Text Book of Obstetrics, third edition, 1912) believes that serious dystocia may follow the so-called suspension operations even when performed by competent operators with the most approved technic. This, he thinks, is due to fixation as the result of infection or other unknown condition. In four cases seen by Williams, Cesarean section was necessary in two, in another a difficult version was performed, while in a fourth a dead child was delivered after craniotomy. In one of these four cases the dystocia followed ventro fixation by an unknown operator, but in the other three it had been preceded by a typical suspension performed by thoroughly competent operators. Williams has, therefore, revised his opinion as to the freedom from danger, even in suspensory operations, and believes that it ought not to be employed unless the ovaries are removed.

Andrews (*Jour. Obst. and Gyn. Brit. Emp.*, 1905) collected the histories of 395 cases of pregnancy occurring in women who had been subjected to ventral fixation or suspension. In the 359 women who went to full term, delivery was effected by Cesarean section in twenty, by forceps in twenty-one, and by craniotomy in one. In three other cases uterine rupture occurred and transverse presentations were noted in ten.

Williams (*Transactions of the Surgical and Gynecological Association,* 1906) collected from the literature thirty-six cases of Cesarean section as well as two additional cases of craniotomy following this class of operations.

A number of other authors might be quoted to show the deleterious effects on labor of the various operations for the correction of retrodisplacement of the uterus, where this organ is not permitted to enlarge at will during pregnancy. Notwithstanding this warning we still meet with operators who do not take into account the possible complications of pregnancy where the other deformity requires operation.

The uterus is created to serve a definite purpose. Its function is to fulfill a certain essential element during pregnancy. If for one reason or another it is necessary to perform an operation on this organ, should not the essential factor for its existence always be kept in mind? It would appear from the serious complications noted in the cases herewith presented and also in the writings of numerous authors, that this fact is not always kept in mind and that the gynecologist or surgeon who operates on the uterus for various degrees of malposition is not sufficiently concerned with what may happen to his patient later on. He is more interested in restoring the uterus to its anatomical position than in preserving the organ for its essential uses. I have endeavored to trace several of the cases which I have personally observed and find that in a number of instances the previous operations were done by surgeons or gynecologists who seemed to give little thought to the possible complications associated with their work. We find, unfortunately, in many hospitals, that the gynecological service is attended entirely by the surgeons who perform the gynecological operations as a matter of necessity rather than choice. Not having had a proper obstetrical training and not desiring to acquire any more definite knowledge of obstetrics later, they go about doing their work without a knowledge of what it may entail later on. In this matter the gynecologists, however, are not entirely blameless.

I have no wish to condemn the Kelly or the Gilliam operation, as it has served a very useful purpose in my hands, but we cannot always exclude the possibility of fixation in such cases, and it would be desirable to resort to other procedures to avoid this possibility. If good results have been obtained by the various operations which plicate the round ligaments and the broad ligaments, it would be preferable to resort to these in place of those which create artificial supports for the uterus.

The various vagino fixation procedures which have been devised undoubtedly result in a symptomatic cure, but in view of the unfortunate results which have and are still being reported, ought it not to be made a universally recognized rule that they should not be resorted to in child-bearing women, or if so, that effective means of sterilization be employed? Undoubtedly the ad-

vocates of these procedures will point to cases which have been delivered without trouble, but, on the other hand, we now have numerous examples of serious dystocia with danger to the life of the mother following their employment. It seems to me that we may safely conclude, therefore, that the warning presented in this résumé should be more widely circulated and that the possibility of obstetrical complications following operations for the cure of uterine displacements be considered, particularly by surgeons who perform gynecological operations and also by gynecologists themselves. They must always bear in mind that the uterus provides a means for the growth and protection of a gestation, and as long as the means are left behind which provide this possibility, it is likely to occur.

A CONTRIBUTION TO THE EXPERIMENTAL STUDY OF OCULAR ANAPHYLAXIS.*

By MARK J. SCHOENBERG, M.D., B.A.,
NEW YORK CITY.

Introduction.

WHEN Ch. Richet and P. Portier published their first paper, entitled *"De l'action anaphylactique de certains venins"* (Bull. Soc. Biol., 1902), stating that dogs injected at various intervals with extracts of medusæ are very much more sensitive to the second injection than to the first, the medical world barely dreamed of the enormous value of this discovery to biology, especially to medicine and more particularly to ophthalmology. The principle underlying this phenomenon is what we know as anaphylaxis.

Definition: Anaphylaxis, says Richet, is the opposite of protection (phylaxis or prophylaxis) and constitutes a condition in which the cells of the animal organism are so modified by their first contact with a heterogenous albumin as to react with greater intensity when the same organism is confronted a second time with the same heterogenous albumin. A certain time—period of incubation—must elapse after the first introduction of the foreign protein to the body before the organism is "sensitized." Heterogenous albumin or foreign protein is one which is obtained from an animal of a different species. The term Anaphylaxis designates "the curious property possessed by certain poisons of augmenting, instead of diminishing the sensibility of the organism to their repeated action" (Richet L'anaphylaxie 1902).

Instances of Experimental Anaphylaxis.

First Instance.—If a very small amount of horse serum is injected into the peritoneal cavity of a guinea pig, and two weeks later a slightly larger quantity of horse serum is injected into the blood stream of this animal, we witness a most strange occurrence. The guinea pig begins to breath rapidly, is restless, goes into convulsions and dies. A control guinea pig injected for the first time with the same amount of serum does not exhibit any alarming symptoms. The state of extreme hypersensitiveness to horse serum produced in the guinea pig by the first injection constitutes a condition called anaphylaxis. Rosenau and Anderson have succeeded in sensitizing guinea pigs with one millionth part of one c. c.m. of heterogenous serum.

In some guinea pigs in which the hypersensitization is not brought up to a high degree, the anaphylactic shock may manifest itself by a less alarming condition; accelerated respiration, chewing, scratching of mouth and anus, fall of temperature, urination, retardation of coagulation time of the blood.

Second Instance.—Injecting a heterogenous serum (from ox or horse) in a rabbit, subcutaneously every five days, we notice that, up to the third or fourth injection, the serum is resorbed in a few hours. After the fifth or sixth injection a thick, whitish aseptic exsudate is formed under the skin at the point of injection, which persists for several weeks. After the seventh injection a necrosis follows (at the seat of injection) which takes several weeks and even months to heal. This condition is known under the name of "Phenomenon of Arthus" after the name of the author who first described it, and is simply another manifestation of anaphylaxis, consisting in a gradual and repeated sensitization of the subcutaneous tissues of the rabbit in such a manner as to render it less able to resorb the foreign serum and more susceptible to necrosis. The phenomenon is purely a local manifestation of a general condition and is also called "Local Anaphylaxis."

A large number of experiments has confirmed and amplified the findings of Portier, Richet and Arthus, and it has been pretty definitely established that usually for the production of anaphylaxis in animals three conditions must be fulfilled: (1) The substance introduced has to be a heterogenous albumin; (2) the route of introduction of this albumin must be parenteral, that is, intravenous, intracardial, subcutaneous, peritoneal, etc., but not through the stomach or intestines; (3) a "period of incubation" must elapse after the first injection. From the historical point of view, it is worth mentioning that Ch. Richet, like other great discoverers, has had his precursors. Magendie (1839), Koch (1890), Behring, Knorr and Kitasato (1893), Flexner (1894), and Arloing and Courmont (1894), have all seen and described anaphylactic reactions in animals. But Richet has recognized some of the theoretical significance of this phenomenon and has coined the term "anaphylaxis" almost universally adopted today.

* Abstract of paper awarded the Lucien Howe prize by the Medical Society of the State of New York, April 27, 1914, which will appear in full in *Ophthalmology*.

The experimental studies of Richet, Hericourt, Portier, etc., presented a purely theoretical interest until von Pirquet and Shick published, in 1903, their remarkable book on serum disease. By this monograph the attention of clinicians was attracted to the great problem of anaphylaxis. Since 1903 a number of clinical and experimental studies appeared covering the subject in a broader manner, and although the true nature of anaphylaxis is not yet understood, we possess at present a series of facts which throw considerable light on some of the most complex problems in physiology, pathology and clinical medicine.

Theoretical and Practical Significance of Anaphylaxis.

The first and most important question which has to be asked is: What is the significance of anaphylaxis; is the study of this phenomenon only of theoretical interest or does it include possibilities of practical value?

The study of anaphylaxis is of as great importance as the study of immunity. Anaphylaxis is a strange and puzzling condition, apparently contradicting the principles underlying the theory of immunity. In the latter the body becomes protected by the repeated introduction into the organism of bacteria. In anaphylaxis the organism loses its protective power against a heterogenous albumin and becomes extremely sensitive to that particular albumin.

We shall enumerate some of the most important applications of the study of anaphylaxis.

I. Anaphylaxis offers us a new method of identification of various kinds of albumin. A guinea pig injected for the first time with horse serum will not show symptoms of anaphylaxis when injected the second time with human or ox serum, but it will become ill and die very rapidly when injected again with horse serum.

II. The study of anaphylaxis throws light on that puzzling condition called idiosyncrasy and "individual physiology" (Richet). Rosenau and Anderson have seen a guinea pig remaining hypersensitized for 1,096 days. These authors are inclined to believe that this animal retains its susceptibility all its life. The fact that an animal has been poisoned (using this word in the broadest meaning) by a given substance, even if the intoxication was slight, even if the effects have apparently disappeared, may put the organism in a special condition which differentiates it from all the other individuals of the same species. A hypersensitized individual, says Richet, is no more like an individual who has never been hypersensitized. The various infections and intoxications, the various foods and anomalous absorbtions from the intestinal tract may render an organism hypersensitive to the strain of micro-organisms or to the specific substances absorbed. This makes every individual a specimen for himself. Such hypersensitization against a certain substance constitutes "Idiosyncrasia."

III. Anaphylaxis is an albumin disease in the broadest sense. It is a pathological condition produced by something else than by trauma, bacteria, poison or heredity. The knowledge of anaphylaxis changes a good deal of our conception of etiology and pathology. Longcope and Warfield (*Journal of Exper. Med.*, 1913) have produced nephritis in animals by repeated injections of foreign proteins. They have also found at the post mortem of these animals changes in the peritoneum, lungs, liver and myocardium. The parenteral introduction of the albumin over long periods of time has produced in this very interesting series of experiments various degrees and types of chronic nephritis.

IV. Extracts of various tissues of the eye have been used with success, as antigens in the production of experimental anaphylaxis. The facts regarding the hypersensitization of the entire organism and of the eyes by the use of extracts from uvea are bringing us nearer to one of the most vital questions in ophthalmology, viz.: Sympathetic Ophthalmia.

V. We already possess a number of evidences that anaphylaxis may be produced in the organism without the parenteral introduction of a foreign albumin. This constitutes auto-anaphylaxis. Ehrlich denies the existence of auto-anaphylaxis, on the ground that normally the organism does not become intoxicated with or hypersensitized by its own products of metabolism. He calls this natural resistance of the organism to the auto-hypersensitization and auto-intoxication "horror autotoxicus." In spite of Ehrlich's opinion, the question of auto-anaphylaxis has occupied the minds of a number of investigators. We believe with Halpern that Ehrlich's "horror autotoxicus" is to be applied only to the healthy organism, and that the reaction to the antigen is different in a healthy and in a diseased body. There are pathologic conditions (trauma, intoxications, infectious diseases, tumors, chronic inflammations, etc.) in which there is going on a more or less continuous resorption of degenerated and dead tissues. The passage into the general circulation of such material equals, under certain circumstances, a parenteral introduction into the body of a foreign albumin, and renders the organism auto-anaphylactic. Since it has been proven by a number of authors, and by my own experiments, that an anaphylactic condition of the general organism is found also in the eyes, we can readily appreciate the great significance this question may have to ophthalmologists.

VI. Since Koch's epoch-making studies on tubercle bacilli and tuberculins, it was known that a tuberculous patient is very sensitive to minimal doses of tuberculin, while a normal individual does not react to relatively large doses. This hypersensitiveness of the tuberculous patient to tuberculin, either injected subcutaneously

or applied in the conjunctival sac, on the skin or intradermally is but a form of anaphylaxis. The organism previously sensitized by the tubercle bacilli reacts later times to minimal doses of the same antigen. In the same way do we conceive the ophthalmo reaction in typhoid, when a very weak solution of a typhoid vaccine is dropped into the conjuctival sac of a typhoid patient and the Noguci luetin and Herxheimer reactions in syphilitics.

VII. The passive immunization of animals and human beings by one or several injections of serums containing the required immune bodies, as is done mostly in tetanus and diphtheria, contains an element of danger. Von Pirquet and Shick have ascribed to anaphylaxis the erythema, pruritus, urticaria and fever occurring after injections of antidiphtheric serum. This so-called "serum disease" appears after a period of incubation of 10-12 days and seems to be an anaphylactic manifestation.

VIII. Wolff Eisner in his book on Clinical Immunity and Diagnosis (1911), enumerates as diseases due to anaphylaxis:

(*a*) *Hay Fever,* due to repeated absorption of pollen albumen.

(*b*) *Urticaria,* produced by the absorption of heterogenous albumin.

(*c*) *Eclampsia,* due to repeated absorption of villi from placenta.

(*d*) *Salt fever in infants* (Finkelstein), caused by the absorption from the intestinal tract of heterogenous albumins.

IX. The anaphylaxis stretches its significant broadness even over certain problems on heredity. At the Brussels Congress for Tuberculosis (1910), Landouzy has reemphasized the idea that there is a hereditary transmission of predisposition to tuberculosis in children of tuberculous patients. In other words, these chidren inherit a hypersensitiveness for tubercle bacilli. The great clinical importance of such a view is easily grasped. Experimentally it has been shown (Rosenau and Anderson), that anaphylaxis can be transmitted by heredity in guinea pigs, sensitized before or after conception.

X. Ophthalmology has not been slow in adopting the general principles of anaphylaxis in the interpretation of the nature of some of the ocular affections. Some authors regard the interstitial keratitis as an anaphylactic condition. Their reasoning is about as follows: Spirochetæ or their toxins may sensitize the cornea of patients during some period (intra- or extraouterine) of life. If at some time—usually during childhood—the general resistance becomes lowered, a new amount of latent syphilitic virus enters the previously sensitized cornea and produces the keratitis so much resembling one obtained in rabbits by the process of anaphylaxis.

Verhoeff (Ophth. Record, 1908), advances a similar explanation for phlyctenular keratitis. Elschnig (Arch. f. Ophth., 1910-1912), and Kümmell (Arch. f. Ophth., 1910) have studied experimentally the possibility of producing a condition of anaphylaxis in one eye by hypersensitizing the other eye. Their experiments seem to confirm their reasoning that if it is possible to render the entire organism anaphylactic by injecting the antigen into one eye, it is also possible to produce anaphylaxis in an eye by treating the other eye. From a series of experiments made during several years, they conclude that sympathetic ophthalmia is an anaphylactic phenomenon, consisting in the hypersensitization of the uvea of the sympathizing eye by the broken-down pigment of the originally involved eye, in individuals with a disturbed general condition. The ingenious and painstaking experiments of Elschnig are well worth reading, even if their conclusions do not appeal to the present ophthalmological world.

Ocular Anaphylaxis—Its Relation to the Rest of the Organism.

On general principles it is to be admitted that the eye, being an organ very intimately connected with the rest of the organism (lymphatics, blood vessels, nerves, connective tissue, etc.), participates in all that is going on in the other parts of the body. We should admit—*a priori*—that normal and abnormal products of metabolism, ferments, immune bodies present in the blood pass into the tissues and liquid constituents of the eyeball and of its annexes just as they enter the rest of the organism. Since there is a very close relation between anaphylaxis and immunity, we shall mention a few facts concerning the relation between the process of immunization taking place in the eye and the rest of the organism.

In 1881 Löffler showed that in certain animals the cornea can be protected against a vaccination with the micro-organisms of mice septicemia by immunizing the animals by intravenous injections of small doses of such micro-organisms. Löffler's discovery was of great interest to ophthalmology: (1) Because it showed that we may successfully prevent infections of the cornea (and why not of any other tissue of the eye?) by preventive intravenous injections; (2) it threw some light on the question regarding the participation of the eye in the immunity of the entire organism.

A number of workers have followed the path opened by Löffler, and from their experiments we can safely state that immune bodies produced in the organism and circulating in the blood stream are also present in the eye.

As to the question, how much we know regarding the problem, whether the entire organism is immunized by a process of infection starting first in the eye, we can safely state that the experiments of Ehrlich, Roemer and others have conclusively shown that the process of immunization starting in the eye usually extends to the rest of the body and vice versa.

The study of anaphylaxis has evolved along lines similar to the study of immunity in its relation to the visual apparatus. The main questions involved are three:

First.—Does the eye participate in the process when the entire organism is in a state of anaphylaxis?

Second.—Can we sensitize the entire organism by introducing into the eye a heterogenous albumin?

Third.—Is it possible that a state of anaphylaxis should occur in the animal body without the introduction of a foreign albumin (auto-anaphylaxis)?

A number of ophthalmologists have tried to elucidate the relation between ocular and general anaphylaxis, and though these authors have published some very interesting papers on the subject, their work is only at the very beginning of the problem. Some of these experiments are of limited value on account of more or less inaccuracy in the methods of investigation. Other experiments, though thorough, have only a purely theoretical value and are too distant from the possibilities of a practical application.

My own experiments have been limited to rabbits. I selected these animals because they are relatively insensitive to anaphylaxis (about four hundred times less than guinea pigs), reasoning that the conclusions drawn from experiments on rabbits therefore are less liable to exaggeration when transplanted into human pathology, then when more sensitive animals are used.

As a foreign albumin, I used (almost exclusively) either human serum or tuberculin B. E. I have preferred the human serum because it is very little irritant, *per se,* to rabbits' eyes, when injected for the first time into the cornea or anterior chamber, and consequently the reaction produced is to be considered almost entirely due to some other cause than the irritant properties of the substance injected. Besides this, the human serum was chosen with the faint hope of possibly striking a method of differentiating from one another human sera variously affected (gout, syphilis, tuberculosis, arterio-sclerosis, etc.) by the way anaphylaxis sets in. And although my experiments are too few to warrant any conclusion regarding this latter point, I should not consider it improbable that anaphylaxis may be some day a routine and very valuable method of differential diagnosis.

Considering that tuberculosis plays such an important role in the etiology of ocular diseases, I thought that the use of tuberculin as an anaphylactic antigen might throw some light on the question of ocular tuberculosis. The tuberculin is a foreign albumin, consisting of the bodies or of the toxins of the tubercle bacilli or of both.

Some of the problems to be worked out are: Can we hypersensitize the organism by injecting tuberculin into the eye? Can we hypersensitize the eye by injecting tuberculin into some other part of the body? The tuberculin used was B. E. Of course various kinds of tuberculin and various species of animals are to be used before any conclusions may be drawn.

Technic.—The technic employed in these experiments for the study of ocular anaphylaxis is simple. As soon as the fluid is injected into the cornea a pearl-white bleb appears in the thickness of the cornea. This bleb usually disappears within less than three to eight hours, and only a whitish line remains at the point where the needle penetrated the cornea. In the course of time this line disappears entirely. It is difficult but important not to puncture the iris during the injection into the anterior chamber, as the wounding of the iris may modify the entire course of experiment and its interpretation.

The intravenous injection is usually made in the marginal vein of one of the ears. The injection should be slow and should not raise the skin above the vein—an occurrence which means that the fluid goes under the skin and not directly into the vein.

Author's Experiments.

Experiment 1.—Serum from a patient with interstitial keratitis was injected first into an ear vein of a rabbit, then after ten days, under the skin and conjunctiva of the right eye, and again, ten days later, into the parenchima of the cornea of the same eye.

The eye remained quiet after the first two injections, but developed an interstitial keratitis forty-eight hours after the last injection.

Experiment 2.—One drop of serum (same as above) was injected into the cornea and anterior chamber of a rabbit. Eleven days later a drop of same serum was again injected in the anterior chamber. A slight iritis developed after the last injection.

Experiment 3.—First injection of serum (from a patient with myopic chorioiditis and detachment of the retina) into the cornea of a rabbit; no reaction. Second injection, subcutaneously, seven days later; no reaction. Third injection in the cornea; very slight local reaction. Fourth injection into the cornea of serum from a rabbit previously sensitized with the patient's own serum; very intense local reaction.

Experiment 4.—First intracorneal injection of serum (same as in experiment 3); no reaction. Second intravenous injection eight days later; corneal abscess and severe iritis. Third injection into the anterior chamber; interstitial keratitis, or iritis, ulcer of the cornea. Fourth injection, three weeks later, of rabbit's own serum into the cornea; slight corneal infiltration. Fifth injection of rabbit's own serum again into the cornea; very severe parenchimatous keratitis.

Experiment 5.—First intravenous injection of 0.5 c. c. serum (same as in experiment 3 and 4). Three days later a second injection into

the cornea; ulcer of the cornea and acute iritis. Third injection, thirty-five days later, of one drop of rabbit's own serum into the cornea; keratitis and iritis.

Experiment 6.—(Control). A marked reaction followed the second intracorneal injection of a strongly positive Wasserman serum; no reaction after two intracorneal injections of salt solution.

In the following four rabbits the serum used in the first two injections was inactivated at fifty-six centigrades for one hour.

Experiment 7.—First intracorneal injection of serum from a patient with interstitial keratitis (Wasserman positive); no reaction. Second intravenously, fourteen days later, 2.5 c. c. of same serum; no reaction. Third injection in the anterior chamber; no reaction.

Experiment 8.—First injection of serum (same as in experiment 7) in the anterior chamber; no reaction. Second intravenously, fourteen days later; no reaction. Third intracorneal injection; no reaction.

Experiment 9.—Negative serum used, inactivated for the first two injections. First injection intracorneal. Second injection intracorneal and into the anterior chamber; very slight congestion. Third injection intracorneal; no reaction.

Experiment 10.—Negative Wasserman serum injected in the anterior chamber; no reaction. Second injection into the anterior chamber; slight congestion. Third injection into the anterior chamber; no reaction.

Experiment 11.—Positive Wasserman serum from a patient with interstitial keratitis 0.5 c. c. injected intravenously. Second injection, fourteen days later, intracorneal, in the right eye and into the anterior chamber of the left eye; both eyes remained quiet. Third injection in the cornea of the right eye and into the anterior chamber of the left eye; the left eye alone developed a slight iritis and keratitis.

Experiment 12.—Negative Wasserman serum used. First intravenous injection of 0.5 c. c. serum. Second injection into the cornea of the right eye and into the anterior chamber of the other eye; next day marked iritis in both eyes.

Experiment 13.—(Control.) Physiologic salt solution injected twice at intervals of fourteen days in the cornea of the right eye and into the anterior chamber of the left eye; no reaction.

In the following eight rabbits tuberculin was used as a sensitizing substance.

Experiment 14.—First injection into the cornea and into the vein (one per cent sol. of B. E.); no reaction. Second injection, ten days later, of a ten per cent solution of B. E. into the cornea of the right eye; no reaction. Third injection in the cornea of the right eye and into the anterior chamber of the left eye; the latter developed a moderate iritis.

Experiment 15.—First injection of one per cent solution of B. E. in the cornea of the right eye and of one-fourth of one per cent solution of phenol into the cornea of the left eye; no reaction. Second injection of a ten per cent B. E. in the cornea of the right eye; no reaction. Third injection of a ten per cent B. E. into the cornea of both eyes; no reaction. Fourth subconjunctival injection of a two per cent solution B. E.; no reaction. Fifth injection, ten days later, of a ten per cent old tuberculin under the conjunctiva of the right eye and into the anterior chamber of the left eye; very slight reaction in the left eye.

Experiment 16.—First injection subcutaneously (one per cent B. E.). Second intracorneal injection (right eye); slight congestion. Third injection in the cornea and in the anterior chamber of the left eye; marked iritis left. Fourth injection in the cornea of the right eye and in the anterior chamber of the left eye (ten per cent old tuberculin); marked corneal infiltration and iritis in both eyes.

Experiment 17.—(Control.) Ten per cent B. E. injected into the anterior chamber of both eyes; no reaction.

Experiment 18.—First injection (one-half per cent phenol) into the cornea of the right eye; no reaction. Second injection of same solution, ten days later, in the same cornea; no reaction. Third injection, three weeks later (ten per cent B. E.), in the anterior chamber of both eyes; no reaction. Fourth injection a ten per cent solution of tuberculin, seven days after the third injection, under the conjunctiva of both eyes; no reaction. Fifth injection, ten days later, of same solution of tuberculin under the conjunctiva of the right eye and into the anterior chamber of the left eye; hypopyon keratitis and iritis in the left eye.

Experiment 19.—(Control.) First intracorneal injection of one-half per cent phenol solution; no reaction. Second intracorneal injection of a ten per cent solution of B. E. tuberculin; no reaction.

Experiment 20.—First injection of a one per cent solution B. E. into the anterior chamber of both eyes; no reaction. Second injection, intravenously, of 1.3 c. c. of a ten per cent solution of old tuberculin; no reaction.

Experiment 21.—First injection 1 c. c. of one per cent solution of B. E. into the vein. Second injection, fourteen days later, of a ten per cent solution of B. E. into the anterior chamber of the right eye; marked iritis. Third injection, fourteen days later, under the conjunctiva of both eyes of a two per cent solution of B. E. Fourth intravenous injection of 1.3 c. c. of a ten per cent solution of old tuberculin, and also an injection of same solution into the anterior chamber; iritis and corneal infiltration in the right eye.

SUMMARY OF EXPERIMENTS AND DISCUSSION.

Although the number of rabbits experimented on is very small (eighteen), we can learn something from the results obtained by the repeated injections of the serum (positive or negative Wasserman), and of tuberculin (B. E. or old) into the cornea, anterior chamber, under the conjunctiva, or in the rest of the organism.

The injections were planned and made in the following manner:

(*a*) First injection intracorneal, consecutive injections intracorneal (two experiments). Result: Local anaphylaxis, positive in both experiments. Control experiments consisting of repeated injections of salt solution or a weak phenol gave no reaction.

(*b*) First injection into the vein, consecutive injections into the cornea (two experiments). Result: Local anaphylaxis, positive in one, negative in one.

(*c*) First in the vein, consecutive injections under the skin, vein again and into the cornea (two experiments). Result: Local anaphylaxis, positive in one, negative in one.

(*d*) First intracorneal, consecutive injections in the anterior chamber and then in the cornea (one experiment). Result: No symptoms of local anaphylaxis.

(*e*) First into the cornea, consecutive injections into the vein, then into the anterior chamber (two experiments). Result: No symptoms of local anaphylaxis in one; marked reaction in one.

(*f*) First and second injection into the anterior chamber (two experimens). Result: Local anaphylaxis, one negative, one doubtful.

(*g*) First into the anterior chamber, consecutive injections into the vein and into the cornea (one experiment). Result: Local anaphylaxis, negative.

(*h*) First injection into the vein, consecutive injections into the anterior chamber (two experiments). Result: Local anaphylaxis positive.

As we see we had a pronounced local reaction in the cornea or iris or both almost exclusively when the first injection of serum was made in the vein and the second injection in the cornea of anterior chamber. The fact that in some rabbits a Wasserman positive and in others a Wasserman negative serum was used had no apparent effect upon the presence or absence of the local anaphylaxis.

I have purposely used here the term "local anaphylaxis" because I consider that the local reaction in the eye (as corneal infiltration or marked ciliary injection, keratitis, iritis and exsudate in the anterior chamber) which appeared after a second injection of the serum is an anaphylactic manifestation. That this reaction is not due to the trauma produced by the repeated introduction of the hypo needle alone is easily proved by the control experiments (repeated injections of salt or phenol solution) in which there occurred no inflammatory reaction in the eye. It seems that the intravenous injections of the serum sensitize the eyes in rabbits under experimentation and that the second injections in the ocular tissues readily unchained local anaphylactic symptoms.

The tuberculin injections were made following an identical plan as that of the serum injections:

(*a*) First in the cornea and ear vein, consecutive injections in the cornea and ear vein: No reaction.

(*b*) First in the cornea, consecutive injections subconjunctival: No reaction.

(*c*) First and consecutive injections intracorneal: No reaction.

(*d*) First in the cornea, consecutive injections in the cornea and conjunctival: Very slight reaction.

(*e*) First, subcutaneous, consecutive injections in the cornea and subconjuctival: Inflammatory reaction.

(*f*) First in the anterior chamber, consecutive injections subconjunctival and in the anterior chamber: Inflammatory reaction.

(*g*) First in the ear vein, consecutive injections into the ear vein and anterior chamber: Inflammatory reaction.

(*h*) First subcutaneous, consecutive injections in the anterior chamber, subconjunctival and in the anterior chamber: Inflammatory reaction.

(*i*) First in the anterior chamber, consecutive injections into the vein and subconjunctival: No inflammatory reaction.

(*j*) As a control. One injection in the anterior chamber: No reaction.

(*k*) First into the vein, consecutive injections into the anterior chamber and subconjunctival: Inflammatory reaction.

(*l*) First into the vein and consecutive injections into the cornea and subconjunctival: No inflammatory reaction.

It seems that the first injection of the tuberculin in the vein or under the skin sensitizes the eye easier than when the first injection is made in the eye itself. The injections in the cornea or under the conjunctiva were without exception not followed by reaction, while those into the anterior chamber are almost always able to unchain an anaphylactic reaction. One single injection of a stronger solution of tuberculin into the anterior chamber produced no inflammatory reaction, a fact which goes to prove that the tuberculin, *per se,* is not a strong irritant for an unsensitized eye of the rabbit.

These experiments are far from being conclusive as regards the question whether or not the sensitizing of the eye may take place by the parenteral introduction of a foreign protein (serum or tuberculin). They are not even conclusive concerning the question whether the injections of a foreign albumin into the eye itself are hypersensitizing the tissues of this organ against that particular kind of albumin.

But this sort of experiments is very suggestive of numerous possibilities which have been briefly mentioned in the first part of this paper. It should be hoped that the continuation of this work will favor us with more fruitful results.

I wish to thank Dr. G. Dixon and Mr. E. Burchell for their kindness of assisting me in some of my experiments which have been performed at the "Eno Laboratory" of the New York Eye and Ear Infirmary.

THE EFFECT OF SUGARS ON THE GASTRIC SECRETIONS IN INFANTS.*

By DeWITT H. SHERMAN, M.D., and
HARRY R. LOHNES, M.D.,
BUFFALO, N. Y.

WHEN we started the study of gastric analysis in infants a few years ago we unfortunately did not plan for the rather extended investigation we have tried to make of the different food elements in the infant's diet. Had we appreciated at the start how far our studies would lead us, our plan would have been more comprehensive, and we could have avoided some little discrepancies, which would have made our tests a trifle more harmonious.

For instance, in comparing the effect of goat's milk modifications to that of cow's milk modifications we were indifferent as to the effect on the stomach of the sugar content of the food.

In our last research we find there is a difference, which I will show.

Our technique in all of our series of cases has been the same. In this series the testing of the three sugars, namely, the milk sugar, cane sugar, and malt sugar, we used fifteen babies. Each baby was tested on each of the three sugars. The sugars were all in a 6 per cent solution in a similar barley water mixture.

As in our other series of tests the gastric content was withdrawn one hour from the middle of the taking of the meal.

In this series, as in our two former ones, we give the averages.

The amount ingested by the babies of all three sugar solutions averaged exactly the same, *i. e.*, 144 c.c. The amount recovered varied some. Of the milk sugar solution it averaged 23.30 c.c; of the cane sugar solution, 34.40 c.c., and of the malt sugar solution, using Mead's dextri-maltose, 33.40 c.c. The last two, you see, were virtually the same, but of each, about 50 per cent more was recovered than of the milk sugar solution.

Whether we can infer from this that the milk sugar solution passes on more rapidly than the other two solutions I am not prepared to say. I doubt it, though, for did the milk sugar solution stimulate to greater activity the motor function of the stomach, we would naturally expect it to stimulate to greater activity the secretory function. This it does not do.

We are naturally pleased to see how closely our second series of fifteen cases on barley water with milk sugar compares with the first series made three years ago. Our first series, which we made with the idea of establishing, if possible, a useful standard of gastric secretion in infants reads:

Free HCL, 2.10; combined HCL, 5.60; total acidity, 9.00.

Our second series reads:

Free HCL, 2.30; combined HCL, 3.90; total acidity, 8.70.

The only difference, as you see, lies in the combined HCL. As there is a difference in this one respect we have combined the two, and we deduce from a series of thirty infants our standard to be:

Free HCL, 2.20; combined HCL, 4.75; total acidity, 8.85.

We find that the cane or granulated sugar solution stimulates gastric secretions a little more than the milk sugar solution, and that the malt sugar solution, in the form of dextri-maltose, is more than twice as stimulating as the milk sugar solution.

This last fact may be of some importance to remember in those infants with hypersensitive stomachs.

Our average, then, for the three sugars are as follows:

	Free HCL.	Combined HCL.	Acid Salts	Total Acidity
Six per cent milk sugar solution in barley water.....	2.30	3.90	2.20	8.70
Six per cent cane sugar solution in barley water.....	3.80	3.80	3.00	10.50
Six per cent dextri-maltose solution in barley water..	6.60	9.60	3.00	19.20

The infants tested averaged in age about seven months. The youngest was three weeks and the oldest was eighteen months. The very youngest ones ran an average a little higher than our standard. The oldest, 18 months, ran a trifle below our standard average.

Conclusions.

1. The average gastric analysis of infants deduced from thirty infants reads:

Free HCL, 2.20; combined HCL, 4.75; total acidity, 8.85.

2. Cane sugar is only slightly more stimulating to the stomach than milk sugar.

3. Malt sugar in the form of dextri-maltose is at least twice as stimulating to gastric secretion as either milk or cane sugar.

* Read at the Annual Meeting of the Medical Society of the State of New York, April 29, 1914.

CORRESPONDENCE.

September 24, 1914.

Dr. John Cowell MacEvitt,
Editor, New York State Medical Journal.

In defending his connection with the Charles B. Towns Hospital, Dr. Alexander Lambert, in your September issue, says:

"The Towns Hospital is an institution for the care and treatment of alcoholism and drug addiction and nothing else. It is legally incorporated under the laws of the State of New York. It is not breaking the legal letter of the law by fulfilling its corporate rights of being a hospital, nor the ethical spirit of it, for the treatment which is followed in this institution under the charge of duly licensed physicians is known to all men."

This statement clearly shows that Dr. Lambert is misinformed as to the true status of the Towns Hospital, and that I was correct when I wrote in *American Medicine* (May, 1911) with reference to his indorsement of Towns: "Suffice to say the indorsement comes from so reputable a man, that we are compelled to believe that he (Dr. Lambert) has been misled."

The statement that the Towns Hospital is incorporated was news to me and I accordingly looked it up. I found that the Charles B. Towns Hospital was incorporated December 9, 1909, as a stock corporation pursuant to the provisions of the Business Corporation Law of the State of New York:

"To erect, establish, or maintain in the State of New York or elsewhere a private hospital, infirmary, dispensary or sanitarium, in which institution persons duly authorized or licensed by law to practice medicine may treat people suffering from physical illness, ailments or injury, and also persons addicted to or suffering from the use of morphine, cocaine, opium or any other narcotic, or from alcohol or alcoholic liquor, *upon such terms and conditions for the use of the accommodations, conveniences and facilities as shall be mutually satisfactory to the said institution and the physician and patient in each particular case,* provided, however, *that nothing herein contained shall be construed to authorize said institution to practice medicine nor to make any arrangement in violation of the laws governing and relating to the practice of medicine.*"

Please note the conditions and provisions in italics.

Will Dr. Lambert point out wherein the Towns Hospital is empowered to treat disease and charge a fee for medical treatment?

Will Dr. Lambert testify that "terms and conditions mutually satisfactory to the institution and the physician and the patient in each particular case" is the business method of the hospital, and will he deny that the physicians of the resident staff are salaried?

Or, will Dr. Lambert admit that he has no knowledge of the business affairs of the hospital?

That there is a vast difference between a licensed physician treating patients in a hospital under conditions satisfactory to the hospital, the patient and himself, and the act of a business corporation employing physicians to treat patients for it, is plain to every man of average intelligence. A physician who had been employed by the Towns Hospital told me he received a stated salary. Such an arrangement is a violation of law, as is shown in the case of one Gross, who organized the Workingman's Mutual Aid Society, and who employed physicians and dentists to treat patients for him. He was prosecuted by the New York County Medical Society, found guilty, but sentence was suspended upon his promise to discontinue business.

It is also shown in the case of Lederman, who, as the Standard Pharmacy Co., employed a physician to treat patients for him. He was arrested on complaint of the County Society and is now awaiting trial.

But aside from this, the Towns Hospital in its advertising matter, advertises to treat disease and charges a definite fee therefore. In its booklet, "The Physician's Guide for the Treatment of the Drug Habit and Alcoholism," we read, among many other statements, clearly showing that the Towns Hospital is practicing medicine, the following:

"I deem it wise to state *our fixed charges* here and now, in order that the doctor may intelligently inform his patient. *The total and complete charge for treatment of the drug habit* in the main hospital ranges from $200 to $350, in advance, according to accommodations, while the *fee for treatment of alcoholic cases ranges from* $75 *to* $150. In the Annex, for patients of moderate means, the *charge for treatment* of cases of drug addictions is $75, and for cases of alcoholic addiction $35.

"The payment of the sums mentioned above include all charges for lodging, maintenance, nursing, medicines, medical services, and all materials and services which may be required or necessary until the completion of said treatment."

Is, or is not, this advertising to treat patients; and is it not a fact that to advertise to treat patients is to practice medicine in the eyes of the law?

High authority has answered these questions, as the following letters show:

State of New York, Attorney-General's Office.
Albany, April 21, 1909.

Dr. Robert W. Hill, Secretary, State Board of Charities, Albany, N. Y.

Dear Sir: I am in receipt of your letter of the 1st inst., in which you ask whether "a stock corporation can be formed under the Business Corporations Law for the purpose of conducting a private sanitarium or hospital for the treatment of medical and surgical cases," and if so, whether certain other things may be done by it?

I have carefully examined this question, and in my opinion, the first question must be answered in the negative, and therefore the other questions do not arise.

The Court of Appeals has recently held, in People vs. Woodbury Dermatological Institute, 192 New York, 454, that a corporation organized under the Business Corporations Law is guilty of a misdemeanor *if it advertises to practice medicine,* because such advertisement by a person not licensed is forbidden by the Laws of 1907, Chapter 344, Section 15, and a corporation cannot secure such license.

It would follow from this that such a corporation as you describe, even if formed, *could not lawfully advertise its vocation* or practice medicine, without being guilty of a misdemeanor, because the statute *referred to applies both to advertising* the *practice of medicine* and *practising.*

Of course, if a corporation were formed for the mere purpose of maintaining a sanitarium to which persons could repair for rest and hygienic treatment, and which would not, in fact, practice medicine within the meaning of this decision, a different question would be presented.

On the other hand, it would seem that, if the corporation desires to conduct a hospital and to practice medicine in the sense of furnishing medical and surgical treatment to its patients, it must be formed under the Membership Corporations Law, in which event its members would not be allowed to make a profit from the enterprise.

If there is any further information which you desire, I shall be glad to furnish it to you, if the foregoing opinion does not answer all your questions.

Yours respectfully,
Edward R. O'Malley,
Attorney-General.

State of New York, Attorney-General's Office.
Albany, June 8, 1909.

Dr. Robert W. Hill, Secretary, State Board of Charities, Albany, N. Y.

Dear Sir: I have your letter of the 6th inst., in which you enclose copy of letter from Hon. Robert J. Burritt, District Attorney for Cayuga County, in reference to my opinion relative to incorporation of private hospitals conducted by individuals.

I have carefully considered this communication and am unable to see any ground for altering my previous opinion. Under the decision of the Court of Appeals, unless the hospital corporation is given the power to practice medicine by "the express provisions of other

statutes" it comes within the Laws of 1907, Chapter 344. The only statute by the express provisions of which a corporation is allowed to practice medicine is, as pointed out by the Court of Appeals, the Membership Corporations Law, and it is, therefore, my opinion that *no corporation can* be formed for *hospital purposes* under any other statute.

Very truly yours,
EDWARD R. O'MALLEY,
Attorney-General.

It is clear, therefore, that the Charles B. Towns Hospital, being organized for profit, could not be in incorporated under the Membership Corporations Law, and being incorporated under the Business Corporations Law, it cannot lawfully practice medicine.

That the Charles B. Towns Hospital is practicing medicine is beyond dispute.

I am sure that I voice the sentiments of Dr. Lambert's many friends and admirers when I say that he and his distinguished colleagues are out of place in the Towns Hospital, and that the announcement of their withdrawal will be welcomed by the medical profession.

Very respectfully,
CHAS. A. ROSENWASSER.

WORKMEN'S COMPENSATION LAW.

CHAP. 67 OF THE CONSOLIDATED LAWS.

Being Chap. 816, Laws 1913, as re-enacted and amended by Chap. 41, Laws 1914, and amended by Chap. 316, Laws 1914.

CHAPTERS 41 AND 316.

AN ACT to re-enact and amend the workmen's compensation law.

Chapter 41 became a law March 16, 1914, with the approval of the Governor.

Chapter 316 became a law April 14, 1914, with the approval of the Governor.

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

Section 1. Chapter eight hundred and sixteen of the laws of nineteen hundred and thirteen, entitled "An act in relation to assuring compensation for injuries or death of certain employees in the course of their employment and repealing certain sections of the labor law relating thereto, constituting chapter sixty-seven of the consolidated laws," is hereby re-enacted and amended to read as follows:

CHAPTER 67 OF THE CONSOLIDATED LAWS.

WORKMEN'S COMPENSATION LAW.

ARTICLE 1.

SHORT TITLE; APPLICATION; DEFINITIONS.

SECTION 1. *Short title.* This chapter shall be known as the "workmen's compensation law."

Sec. 2. *Application.* Compensation provided for in this chapter shall be payable for injuries sustained or death incurred by employees engaged in the following hazardous employments:

Group 1. The operation, including construction and repair, of railways operated by steam, electric or other motive power, street railways, and incline railways, but not their construction when constructed by any person other than the company which owns or operates the railway, including work of express, sleeping, parlor and dining car employees on railway trains.

Group 2. Construction and operation of railways not included in group one.

Group 3. The operation, including construction and repair, of car shops, machine shops, steam and power plants, and other works for the purposes of any such railway, or used or to be used in connection with it when operated, constructed or repaired by the company which owns or operates the railway.

Group 4. The operation, including construction and repair, of car shops, machine shops, steam and power plants, not included in group three.

Group 5. The operation, including construction and repair, of telephone lines and wires for the purposes of the business of a telephone company, or used or to be used in connection with its business, when constructed or operated by the company.

Group 6. The operation, including construction and repair, of telegraph lines and wires for the purposes of the business of a telegraph company, or used or to be used in connection with its business, when constructed or operated by the company.

Group 7. Construction of telegraph and telephone lines not included in groups five and six.

Group 8. The operation, within or without the state, including repair, of vessels other than vessels of other states or countries used in interstate or foreign commerce, when operated or repaired by the company.

Group 9. Shipbuilding, including construction and repair in a shipyard or elsewhere, not included in group eight.

Group 10. Longshore work, including the loading or unloading of cargoes or parts of cargoes of grain, coal, ore, freight, general merchandise, lumber or other products or materials, or moving or handling the same on any dock, platform or place, or in any warehouse or other place of storage.

Group 11. Dredging, subaqueous or caisson construction, and pile driving.

Group 12. Construction, installation or operation of electric light and electric power lines, dynamos, or appliances, and power transmission lines.

Group 13. Paving; sewer and subway construction, work under compressed air, excavation, tunneling and shaft sinking, well digging, laying and repair of underground pipes, cables and wires, not included in other groups.

Group 14. Lumbering; logging, river-driving, rafting, booming, saw mills, shingle mills, lath mills; manufacture of veneer and of excelsior; manufacture of staves, spokes, or headings.

Group 15. Pulp and paper mills.

Group 16. Manufacture of furniture, interior woodwork, organs, pianos, piano actions, canoes, small boats, coffins, wicker and rattan ware; upholstering; manufacture of mattresses or bed springs.

Group 17. Planing mills, sash and door factories, manufacture of wooden and corrugated paper boxes, cheese boxes, mouldings, window and door screens, window shades, carpet sweepers, wooden toys, articles and wares or baskets.

Group 18. Mining; reduction of ores and smelting; preparation of metals or minerals.

Group 19. Quarries; sand, shale, clay or gravel pits, lime kilns; manufacture of brick, tile, terra-cotta, fireproofing, or paving blocks, manufacture of calcium carbide, cement, asphalt or paving material.

Group 20. Manufacture of glass, glass products, glassware, porcelain or pottery.

Group 21. Iron, steel or metal foundries; rolling mills; manufacture of castings, forgings, heavy engines, locomotives, machinery, safes, anchors, cables, rails, shafting, wires, tubing, pipes, sheet metal, boilers, furnaces, stoves, structural steel, iron or metal.

Group 22. Operation and repair of stationary engines and boilers, not included in other groups.

Group 23. Manufacture of small castings or forgings, metal wares, instruments, utensils and articles, hardware, nails, wire goods, screens, bolts, metal beds, sanitary, water, gas or electric fixtures, light machines, typewriters, cash registers, adding machines, carriage mountings, bicycles, metal toys, tools, cutlery, instruments, photographic cameras and supplies, sheet metal products, buttons.

Group 24. Manufacture of agricultural implements, threshing machines, traction engines, wagons, carriages, sleighs, vehicles, automobiles, motor trucks, toy wagons, sleighs or baby carriages.

Group 25. Manufacture of explosives and dangerous chemicals, corrosive acids or salts, ammonia, gasoline, petroleum, petroleum products, celluloid, gas, charcoal, artificial ice, gunpowder or ammunition.

Group 26. Manufacture of paint, color, varnish, oil, japans, turpentine, printing ink, printers' rollers, tar, tarred, pitched or asphalted paper.

Group 27. Distilleries, breweries; manufacture of spirituous or malt liquors, alcohol, wine, mineral water or soda waters.

Group 28. Manufacture of drugs and chemicals, not specified in group twenty-five, medicines, dyes, extracts, pharmaceutical or toilet preparations, soaps, candles, perfumes, non-corrosive acids or chemical preparations, fertilizers, including garbage disposal plants; shoe blacking or polish.

Group 29. Milling; manufacture of cereals or cattle foods, warehousing; storage; operation of grain elevators.

Group 30. Packing houses, abattoirs, manufacture or preparation of meats or meat products or glue.

Group 31. Tanneries.

Groups 32. Manufacture of leather goods and products, belting, saddlery, harness, trunks, valises, boots, shoes, gloves, umbrellas, rubber goods, rubber shoes, tubing, tires or hose.

Group 33. Canning or preparation of fruit, vegetables, fish or foodstuffs; pickle factories and sugar refineries.

Group 34. Bakeries, including manufacture of crackers and biscuits, manufacture of confectionery, spices or condiments.

Group 35. Manufacture of tobacco, cigars, cigarettes or tobacco products.

Group 36. Manufacture of cordage, ropes, fibre, brooms or brushes; manilla or hemp products.

Group 37. Flax mills; manufacture of textiles or fabrics, spinning, weaving and knitting manufactories; manufacture of yarn, thread, hosiery, cloth, blankets, carpets, canvas, bags, shoddy or felt.

Group 38. Manufacture of men's or women's clothing, white wear, shirts, collars, corsets, hats, caps, furs or robes.

Group 39. Power laundries; dyeing, cleaning or bleaching.

Group 40. Printing, photo-engraving, stereotyping, electrotyping, lithographing, embossing; manufacture of stationery, paper, cardboard boxes, bags, or wall-paper; and book-binding.

Group 41. The operation, otherwise than on tracks, or streets, highways, or elsewhere of cars, trucks, wagons or other vehicles, and rollers and engines, propelled by steam, gas, gasoline, electric, mechanical or other power or drawn by horses or mules.

Group 42. Stone cutting or dressing; marble works; manufacture of artificial stone; steel building and bridge construction; installation of elevators, fire escapes, boilers, engines or heavy machinery; bricklaying, tile-laying, mason work, stone-setting, concrete work, plastering; and manufacture of concrete blocks; structural carpentry; painting, decorating or renovating; sheet metal work; roofing; construction, repair and demolition of buildings and bridges; plumbing, sanitary or heating engineering; installation and covering of pipes or boilers.

Sec. 3. *Definitions.* As used in this chapter, 1. "Hazardous employment" means a work or occupation described in section two of this chapter.

2. "Commission" means the state workmen's compensation commission, as constituted by this chapter.

3. "Employer," except when otherwise expressly stated, means a person, partnership, association, corporation, and the legal representatives of a deceased employer, or the receiver or trustee of a person, partnership, association or corporation, employing workmen in hazardous employments including the state and a municipal corporation or other political subdivision thereof. (*Thus amended by Chap.* 316, *Laws* 1914; *in effect April* 14, 1914.)

4. "Employee" means a person who is engaged in a hazardous employment in the service of an employer carrying on or conducting the same upon the premises or at the plant, or in the course of his employment away from the plant of his employer; and shall not include farm laborers or domestic servants.

5. "Employment" includes employment only in a trade, business or occupation carried on by the employer for pecuniary gain.

6. "Compensation" means the money allowance payable to an employee or to his dependents as provided for in this chapter, and includes funeral benefits provided therein.

7. "Injury" and "personal injury" mean only accidental injuries arising out of and in the course of employment and such disease or infection as may naturally and unavoidably result therefrom.

8. "Death" when mentioned as a basis for the right to compensation means only death resulting from such injury.

9. "Wages" means the money rate at which the service rendered is recompensed under the contract of hiring in force at the time of the accident, including the reasonable value of board, rent, housing, lodging or similar advantage received from the employer.

10. "State fund" means the state insurance fund provided for in article five of this chapter.

11. "Child" shall include a posthumous child and a child legally adopted prior to the injury of the employee.

12. "Insurance carrier" shall include the state fund, stock corporations or mutual associations with which employees have insured, and employers permitted to pay compensation directly under the provisions of subdivision three of section fifty.

ARTICLE 2.

COMPENSATION.

Section 26. Enforcement of payment in default.
27. Depositing future payments.
28. Limitation of right to compensation.
29. Subrogation to remedies of employee.
30. Revenues or benefits from other sources not to affect compensation.
31. Agreement for contribution by employee void.
32. Waiver agreements void.
33. Assignments; exemptions.
34. Preferences.

Sec. 10. *Liability for compensation.* Every employer subject to the provisions of this chapter shall pay or provide as required by this chapter compensation according to the schedules of this article for the disability or death of his employee resulting from an accidental personal injury sustained by the employee arising out of and in the course of his employment, without regard to fault as a cause of such injury, except where the injury is occasioned by the willful intention of the injured employee to bring about the injury or death of himself or of another, or where the injury results solely from the intoxication of the injured employee while on duty. Where the injury is occasioned by the willful intention of the injured employee to bring about the injury or death of himself or of another, or where the injury results solely from the intoxication of the injured employee while on duty, neither the injured employee nor any dependent of such employee shall receive compensation under this chapter.

Sec. 11. *Alternative remedy.* The liability prescribed by the last preceding section shall be exclusive, except that if an employer fail to secure the payment of compensation for his injured employees and their dependents as provided in section fifty of this chapter, an injured employee, or his legal representative in case death results from the injury, may, at his option, elect to claim compensation under this chapter, or to maintain an action in the courts for damages on account of such injury; and in such an action it shall not be necessary to plead or prove freedom from contributory negligence nor may the defendant plead as a defense that the injury was caused by the negligence of a fellow servant nor that the employee assumed the risk of his employment, nor that the injury was due to the contributory negligence of the employee. (*Thus amended by Chap.* 316, *Laws* 1914; *in effect April* 14, 1914.)

Sec. 12. *Compensation not allowed for first two weeks.* No compensation shall be allowed for the first fourteen days of disability, except the benefits provided for in section thirteen of this chapter.

Sec. 13. *Treatment and care of injured employees.* The employer shall promptly provide for an injured employee such medical, surgical or other attendance or treatment, nurse and hospital service, medicines, crutches and apparatus as may be required or be requested by the employee, during sixty days after the injury. If the employer fail to provide the same, the injured employee may do so at the expense of the employer. The employee shall not be entitled to recover any amount expended by him for such treatment or services unless he shall have requested the employer to furnish the same and the employer shall have refused or neglected to do so. All fees and other charges for such treatment and service shall be subject to regulation by the commission as provided in section twenty-four of this chapter, and shall be limited to such charges as prevail in the same community for similar treatment of injured persons of a like standard of living.

Sec. 14. *Weekly wages basis of compensation.* Except as otherwise provided in this chapter, the average weekly wages of the injured employee at the time of the injury shall be taken as the basis upon which to compute compensation or death benefits, and shall be determined as follows:

1. If the injured employee shall have worked in the employment in which he was working at the time of the accident, whether for the same employer or not, during substantially the whole of the year immediately preceding his injury, his average annual earnings shall consist of three hundred times the average daily wage or salary which he shall have earned in such employment during the days when so employed;

2. If the injured employee shall not have worked in such employment during substantially the whole of such year, his average annual earnings shall consist of three hundred times the average daily wage or salary which an employee of the same class working substantially the whole of such immediately preceding year in the same or in a similar employment in the same or a neighboring place shall have earned in such employment during the days when so employed.

3. If either of the foregoing methods of arriving at the annual average earnings of an injured employee cannot reasonably and fairly be applied, such annual earnings shall be such sum as, having regard to the previous earnings of the injured employee and of other employees of the same or most similar class, working in the same or most similar employment in the same or neighboring locality, shall reasonably represent the annual earning capacity of the injured employee in the employment in which he was working at the time of the accident;

4. The average weekly wages of an employee shall be one-fifty-second part of his average annual earnings;

5. If it be established that the injured employee was a minor when injured, and that under normal conditions his wages would be expected to increase, the fact may be considered in arriving at his average weekly wages.

Sec. 15. *Schedule in case of disability.* The following schedule of compensation is hereby established:

1. Total permanent disability. In case of total disability, adjudged to be permanent, sixty-six and two-thirds per centum of the average weekly wages shall be paid to the employee during the continuance of such total disability. Loss of both hands, or both arms, or both feet, or both legs, or both eyes, or of any two thereof shall, in the absence of conclusive proof to the contrary, constitute permanent total disability. In all other cases permanent total disability shall be determined in accordance with the facts.

2. Temporary total disability. In case of temporary total disability, sixty-six and two-thirds per centum of the average weekly wages shall be paid to the employee during the continuance thereof, but not in excess of three thousand five hundred dollars, except as otherwise provided in this chapter.

3. Permanent partial disability. In case of disability partial in character but permanent in quality the compensation shall be sixty-six and two-thirds per centum of the average weekly wages and shall be paid to the employee for the period named in the schedule as follows:

Thumb. For the loss of a thumb, sixty weeks.

First finger. For the loss of a first finger, commonly called index finger, forty-six weeks.

Second finger. For the loss of a second finger, thirty weeks.

Third finger. For the loss of a third finger, twenty-five weeks.

Fourth finger. For the loss of a fourth finger, commonly called the little finger, fifteen weeks.

Phalange of thumb or finger. The loss of the first phalange of the thumb or finger shall be considered to be equal to the loss of one-half of such thumb or finger, and compensation shall be one-half of the amount above specified. The loss of more than one phalange shall be considered as the loss of the entire thumb or finger; provided, however, that in no case shall the amount received for more than one finger exceed the amount provided in this schedule for the loss of a hand.

Great toe. For the loss of a great toe, thirty-eight weeks.

Other toes. For the loss of one of the toes other than the great toe, sixteen weeks.

Phalange of toe. The loss of the first phalange of any toe shall be considered to be equal to the loss of one-half of said toe, and the compensation shall be one-half of the amount specified. The loss of more than one phalange shall be considered as the loss of the entire toe.

Hand. The loss of a hand, two hundred and forty-four weeks.

Arm. For the loss of an arm, three hundred and twelve weeks.

Foot. For the loss of a foot, two hundred and five weeks.

Leg. For the loss of a leg, two hundred and eighty-eight weeks.

Eye. For the loss of an eye, one hundred and twenty-eight weeks.

Loss of use. Permanent loss of the use of a hand, arm, foot, leg or eye, shall be considered as the equivalent of the loss of such hand, arm, foot, leg or eye.

Amputations. Amputation between the elbow and the wrist shall be considered as the equivalent of the loss of a hand. Amputation between the knee and the ankle shall be considered as the equivalent of the loss of a foot. Amputation at or above the elbow shall be considered as the loss of an arm. Amputation at or above the knee shall be considered as the loss of the leg.

The compensation for the foregoing specific injuries shall be in lieu of all other compensation, except the benefits provided in section thirteen of this chapter.

Other cases. In all other cases in this class of disability, the compensation shall be sixty-six and two-thirds per centum of the difference between his average weekly wages and his wage-earning capacity thereafter in the same employment or otherwise, payable during the continuance of such partial disability, but subject to reconsideration of the degree of such impairment by the commission on its own motion or upon application of any party in interest.

4. Temporary partial disability. In case of temporary partial disability, except the particular cases mentioned in subdivision three of this section, an injured employee shall receive sixty-six and two-thirds per centum of the difference between his average weekly wages and his wage earning capacity thereafter in the same employment or otherwise during the continuance of such partial disability, but not in excess of three thousand five hundred dollars, except as otherwise provided in this chapter.

5. Limitation. The compensation payment under subdivisions one, two and four and under subdivision three except in case of the loss of a hand, arm, foot, leg or eye, shall not exceed fifteen dollars per week nor be less than five dollars per week; the compensation payment under subdivision three in case of the loss of a hand, arm, foot, leg or eye, shall not exceed twenty dollars per week nor be less than five dollars a week; provided, however, that if the employee's wages at the time of injury are less than five dollars per week he shall receive his full weekly wages.

6. Previous disability. The fact that an employee has suffered previous disability or received compensation therefor shall not preclude him from compensation for a later injury nor preclude compensation for death resulting therefrom; but in determining compensation for the later injury or death his average weekly wages shall be such sum as will reasonably represent his earning capacity at the time of the later injury.

Sec. 16. *Death benefits.* If the injury causes death, the compensation shall be known as a death benefit and shall be payable in the amount and to or for the benefit of the persons following:

1. Reasonable funeral expenses, not exceeding one hundred dollars;

2. If there be a surviving wife (or dependent husband) and no child of the *deceased under the age of eighteen years, to such wife (or dependent husband) thirty per centum of the average wages of the deceased during widowhood (or dependent widowhood) with two years' compensation in one sum, upon remarriage; and if there be surviving child or children of the deceased under the age of eighteen years, the additional amount of ten per centum of such wages for each such child until of the age of eighteen years; in case of the subsequent death of such surviving wife (or dependent husband) any surviving child of the deceased employee, at the time under eighteen years of age, shall have his compensation increased to fifteen per centum of such wages, and the same shall be payable until he shall reach the age of eighteen years; provided that the total amount payable shall in no case exceed sixty-six and two-thirds per centum of such wages.

3. If there be surviving child or children of the deceased under the age of eighteen years, but no surviving wife (or dependent husband) then for the support of each child until of the age of eighteen years, such per centum of the wages of the deceased, provided, that the aggregate shall in no case exceed sixty-six and two-thirds per centum of such wages.

4. If the amount payable to surviving wife (or dependent husband) and to children under the age of eighteen years shall be less in the aggregate than sixty-six and two-thirds per centum of the average wages of the deceased, then for the support of grandchildren or brothers and sisters under the age of eighteen years, if dependent upon the deceased at the time of the accident, fifteen per centum of such wages for the support of each such person until of the age of eighteen years; and for the support of each parent, or grandparent, of the deceased if dependent upon him at the time of the accident, fifteen per centum of such wages during such dependency. But in no case shall the aggregate amount payable under this subdivision exceed the difference between sixty-six and two-thirds per centum of such wages, and the amount payable as hereinbefore provided to surviving wife (or dependent husband) or for the support of surviving child or children.

Any excess of wages over one hundred dollars a month shall not be taken into account in computing compensation under this section. All questions of dependency shall be determined as of the time of the accident. (*Thus amended by Chap.* 316, *Laws* 1914; *in effect April* 14, 1914.)

Sec. 17. *Aliens.* Compensation under this chapter to aliens not residents (or about to become non-residents) of the United States or Canada, shall be the same in amount as provided for residents, except that the commission may, at its option, or, upon the application of the insurance carrier, shall, commute all future instalments of compensation to be paid to such aliens, by paying or causing to be paid to them one-half of the commuted amount of such future instalments of compensation as determined by the commission.

Sec. 18. *Notice of injury.* Notice of an injury for which compensation is payable under this chapter shall be given to the commission and to the employer within ten days after disability, and also in case of the death of the employee resulting from such injury, within thirty days after such death. Such notice may be given by any person claiming to be entitled to compensation, or by some one in his behalf. The notice shall be in writing, and contain the name and address of the employee, and state in ordinary language the time, place, nature and cause of the injury, and be signed by him or by a person on his behalf or, in case of death, by any one or more of his dependents, or by a person on their behalf. It shall be given to the commission by sending it by mail, by registered letter, addressed to the commission at its office. It shall be given to the employer by delivering it to him or sending it by mail, by registered letter, addressed to the employer at his or its last known place of residence; provided that, if the employer be a partnership then such notice may be so given to any one of the partners, and if the employer be a corporation, then such notice may be given to any agent or officer thereof upon whom legal process may be served, or any agent in charge of the business in the place where the injury occurred. The failure to give such notice, unless excused by the commission either on the ground that notice for some sufficient reason could not have been given, or on the ground that the state fund, insurance company, or em-

* So in original.

ployer, as the case may be, has not been prejudiced thereby, shall be a bar to any claim under this chapter.

Sec. 19. *Medical examination.* An employee injured claiming or entitled to compensation under this chapter shall, if requested by the commission, submit himself for medical examination at a time, and from time to time, at a place reasonably convenient for the employee, and as may be provided by the rules of the commission. If the employee or the insurance carrier request he shall be entitled to have a physician or physicians of his own selection to be paid by him present to participate in such examination. If an employee refuse to submit himself to examination, his right to prosecute any proceeding under this chapter shall be suspended, and no compensation shall be payable, for the period of such refusal.

Sec. 20. *Determination of claims for compensation.* At any time after the expiration of the first fourteen days of disability on the part of an injured employee, or at any time after his death, a claim for compensation may be presented to the commission. The commission shall have full power and authority to determine all questions in relation to the payment of claims for compensation under the provisions of this chapter. The commission shall make or cause to be made such investigation as it deems necessary, and upon application of either party, shall order a hearing, and within thirty days after a claim for compensation is submitted under this section, or such hearing closed, shall make or deny an award, determining such claim for compensation, and file the same in the office of the commission, together with a statement of its conclusions of fact and rulings of law. The commission may, before making an award, require the claimant to appear before an arbitration committee appointed by it and consisting of one representative of employees, one representative of employers, and either a member of the commission or a person specially deputized by the commission to act as chairman, before which the evidence in regard to the claim shall be adduced and by which it shall be considered and reported upon. Immediately after such filing the commission shall send to the parties a copy of the decision. Upon a hearing pursuant to this section either party may present evidence and be represented by counsel. The decision of the commission shall be final as to all questions of fact, and, except as provided in section twenty-three, as to all questions of law.

Sec. 21. *Presumptions.* In any proceeding for the enforcement of a claim for compensation under this chapter, it shall be presumed in the absence of substantial evidence to the contrary

1. That the claim comes within the provisions of this chapter;
2. That sufficient notice thereof was given;
3. That the injury was not occasioned by the willful intention of the injured employee to bring about the injury or death of himself or of another;
4. That the injury did not result solely from the intoxication of the injured employee while on duty.

Sec. 22. *Modification of award.* Upon its own motion or upon the application of any party in interest, on the ground of a change in conditions, the commission may at any time review any award, and, on such review, may make an award ending, diminishing or increasing the compensation previously awarded, subject to the maximum or minimum provided in this chapter, and shall state its conclusions of fact and rulings of law, and shall immediately send to the parties a copy of the award. No such review shall affect such award as regards any moneys already paid.

Sec. 23. *Appeals from the commission.* An award or decision of the commission shall be final and conclusive upon all questions within its jurisdiction, as against the state fund or between the parties, unless within thirty days after a copy of such award or decision has been sent to the parties, an appeal be taken to the appellate division of the supreme court of the third department. The commission may also, in its discretion, where the claim for compensation was not made against the state fund, on the application of either party, certify to such appellate division of the supreme court, questions of law involved in its decision. Such appeals and the questions so certified shall be heard in a summary manner and shall have precedence over all other civil cases in such court. The commission shall be deemed a party to every such appeal, and the attorney-general, without extra compensation, shall represent the commission thereon. An appeal may also be taken to the court of appeals in all cases where such an appeal would lie from a decision of an appellate division, in the same manner and subject to the same limitations as is now provided in civil actions. Otherwise such appeals shall be subject to the law and practice applicable to appeals in civil actions. Upon the final determination of such an appeal, the commission shall make an award or decision in accordance therewith.

Sec. 24. *Costs and fees.* If the commission or the court before which any proceedings for compensation or concerning an award of compensation have been brought, under this chapter, determines that such proceedings have not been so brought upon reasonable ground, it shall assess the whole cost of the proceeding upon the party who has so brought them. Claims for legal services in connection with any claim arising under this chapter, and claims for services or treatment rendered or supplies furnished pursuant to section thirteen of this chapter, shall not be enforceable unless approved by the commission. If so approved, such claim or claims shall become a lien upon the compensation awarded, but shall be paid therefrom only in the manner fixed by the commission.

Sec. 25. *Compensation, how payable.* Compensation under the provisions of this chapter shall be payable periodically, in accordance with the method of payment of the wages of the employee at the time of his injury or death, and shall be so provided for in any award; but the commission may determine that all payments or payments as to any particular group may be made monthly or at any other period, as it may deem advisable. The commission, whenever it shall so deem advisable, may commute such periodical payments to one or more lump sum payments, provided the same shall be in the interest of justice. If the award requires payment of compensation otherwise than from the state fund all payments as required by the award shall be made directly to the commission or to a deputy specially authorized to receive the same, and disbursed in accordance with its award to the persons entitled thereto. And employers and insurance companies shall for such purpose be permitted, or when necessary to protect the interest of the beneficiary may be required, to make deposits to secure the prompt and convenient payment of such compensation.

Sec. 26. *Enforcement of payment in default.* If payment of compensation, or an instalment thereof, due under the terms of an award, be not made within ten days after the same is due, by the employer or insurance corporation liable therefor, the amount of such payment shall constitute a liquidated claim for damages against such employer or insurance corporation, which with an added penalty of fifty per centum may be recovered in an action to be instituted by the commission in the name of the people of the state. If such default be made in the payment of an instalment of compensation and the whole amount of such compensation be not due, the commission may, if the present value of such compensation be computable, declare the whole amount thereof due, and recover the amount thereof with the added penalty of fifty per centum, as provided by this section. Any such action may be compromised by the commission or may be prosecuted to final judgment as, in the discretion of the commission, may best serve the interests of the persons entitled to receive the compensation or the benefits. Compensation recovered under this section shall be disdursed by the commission to the persons entitled thereto in accordance with the reward. A penalty recovered pursuant to this section shall be paid into the state treasury, and be applicable to the expenses of the commission.

Sec. 27. *Depositing future payments.* If an award under this chapter requires payment of compensation by an employer or an insurance corporation in periodical payments, and the nature of the injury makes it possible to compute the present value of all future payments with due regard for life contingencies, the commission may, in its discretion, at any time, compute and permit or require to be paid into the state fund an amount equal to the present value of all unpaid compensation for which liability exists, in trust; and thereupon such employer or insurance corporation shall be discharged from any further liability under such award and payment of the same shall be assumed by the state fund.

Sec. 28. *Limitation of right to compensation.* The right to claim compensation under this chapter shall be forever barred unless within one year after the injury, or if death result therefrom, within one year after such death, a claim for compensation thereunder shall be filed with the commission.

Sec. 29. *Subrogation to remedies of employees.* If a workman entitled to compensation under this chapter be injured or killed by the negligence or wrong of another not in the same employ, such injured workman, or in case of death, his dependents, shall, before any suit or claim under this chapter, elect whether to take compensation under this chapter or to pursue his remedy against such other. Such election shall be evidenced in such manner as the commission may by rule or regulation prescribe. If he elect to take compensation under this chapter, the cause of action against such other shall be assigned to the state for the benefit of the state insurance fund, if compensation be payable therefrom, and otherwise to the person or association or corporation liable for the payment of such compensation, and if he elect to proceed against such other, the state insurance fund, person or association or corporation, as the case may be, shall contribute only the deficiency, if any, between the amount of the recovery against such other person actually collected, and the compensation provided or estimated by this chapter for such case. Such a cause of action assigned to the state may be prosecuted or compromised by the commission. A compromise of any such cause of action by the workman or his dependents at an amount less than the compensation provided for by this chapter shall be made only with the written approval of the commission, if the deficiency of compensation would be payable from the state insurance fund, and otherwise with the written approval of the person, association or corporation liable to pay the same.

Sec. 30. *Revenues or benefits from other sources not to affect compensation.* No benefits, savings or insurance of the injured employee, independent of the provisions of this chapter, shall be considered in determining the compensation or benefits to be paid under this chapter, except that, in case of the death of an employee of the state, a municipal corporation or any other political subdivision of the state, any benefit payable under a pension system which is not sustained in whole or in part by the contributions of the employee, may be applied toward the payment of the death benefit provided by this chapter. (*Thus amended by Chap.* 316, *Laws* 1914; *in effect April* 14, 1914.)

Sec. 31. *Agreement for contribution by employee void.* No agreement by an employee to pay any portion of the premium paid by his employer to the state insurance fund or to contribute to a benefit fund or department maintained by such employer or to the cost of mutual insurance or other insurance, maintained for or carried for the purpose of providing compensation as herein required, shall be valid, and any employer who makes a deduction for such purpose from the wages or salary of any employee entitled to the benefits of this chapter shall be guilty of a misdemeanor.

Sec. 32. *Waiver agreements void.* No agreement by an employee to waive his right to compensation under this chapter shall be valid.

Sec. 33. *Assignments; exemptions.* Claims for compensation or benefits due under this chapter shall not be assigned, released or commuted except as provided by this chapter, and shall be exempt from all claims of creditors and from levy, execution and attachment or other remedy for recovery or collection of a debt, which exemption may not be waived. Compensation and benefits shall be paid only to employees or their dependents.

Sec. 34. *Preferences.* The right of compensation granted by this chapter shall have the same preference or lien without limit of amount against the assets of the employer as is now or hereafter may be allowed by law for a claim for unpaid wages for labor.

ARTICLE 3.

SECURITY FOR COMPENSATION.

Sec. 50. *Security for payment of compensation.* An employer shall secure compensation to his employees in one of the following ways:

1. By insuring and keeping insured the payment of such compensation in the state fund, or

2. By insuring and keeping insured the payment of such compensation with any stock corporation or mutual association authorized to transact the business of workmen's compensation insurance in this state. If insurance be so effected in such a corporation or mutual association the employer shall forthwith file with the commission in form prescribed by it, a notice specifying the name of such insurance corporation or mutual association together with a copy of the contract or policy of insurance.

3. By furnishing satisfactory proof to the commission of his financial ability to pay such compensation for himself, in which case the commission may, in its discretion, require the deposit with the commission of securities of the kind prescribed in section thirteen of the insurance law, in an amount to be determined by the commission, to secure his liability to pay the compensation provided in this chapter.

If an employer fail to comply with this section, he shall be liable to a penalty during which such failure continues of an amount equal to the pro rata premium which would have been payable for insurance in the state fund for such period of non-compliance to be recovered in an action brought by the commission.

The commission may, in its discretion, for good cause shown, remit any such penalty, provided the employer in default secure compensation as provided in this section. (*Thus amended by Chap.* 316, *Laws* 1914; *in effect April* 14, 1914.)

Sec. 51. *Posting of notice regarding compensation.* Every employer who has complied with section fifty of this chapter shall post and maintain in a conspicuous place or places in and about his place or places of business typewritten or printed notices in form prescribed by the commission, stating the fact that he has complied with all the rules and regulations of the commission and that he has secured the payment of compensation to his employees and their dependents in accordance with the provisions of this chapter.

Sec. 52. *Effect of failure to secure compensation.* Failure to secure the payment of compensation shall have the effect of enabling the injured employee or his dependents to maintain an action for damages in the courts, as prescribed by section eleven of this chapter.

Sec. 53. *Release from all liability.* An employer securing the payment of compensation by contributing premiums to the state fund shall thereby become relieved from all liability for personal injuries or death sustained by his employees, and the persons entitled to compensation under this chapter shall have recourse therefor only to the state fund and not to the employer. An employer shall not otherwise be relieved from the liability for compensation prescribed by this chapter except by the payment thereof by himself or his insurance carrier.

Sec. 54. *The insurance contract.* 1. Right of recourse to the insurance carrier. Every policy of insur-

ance covering the liability of the employer for compensation issued by a stock company or by a mutual association authorized to transact workmen's compensation insurance in this state shall contain a provision setting forth the right of the commission to enforce in the name of the people of the state of New York for the benefit of the person entitled to the compensation insured by the policy either by filing a separate application or by making the insurance carrier a party to the original application, the liability of the insurance carrier in whole or in part for the payment of such compensation; provided, however, that payment in whole or in part of such compensation by either the employer or the insurance carrier shall to the extent thereof be a bar to the recovery against the other of the amount so paid.

2. Knowledge and jurisdiction of the employer extended to cover the insurance carrier. Every such policy shall contain a provision that, as between the employee and the insurance carrier, the notice to or knowledge of the occurrence of the injury on the part of the employer shall be deemed notice or knowledge, as the case may be, on the part of the insurance carrier; that jurisdiction of the employer shall, for the purpose of this chapter, be jurisdiction of the insurance carrier and that the insurance carrier shall in all things be bound by and subject to the orders, findings, decisions or awards rendered against the employer for the payment of compensation under the provisions of this chapter.

3. Insolvency of employer does not release the insurance carrier. Every such policy shall contain a provision to the effect that the insolvency or bankruptcy of the employer shall not relieve the insurance carrier from the payment of compensation for injuries or death sustained by an employee during the life of such policy.

4. Limitation of indemnity agreements. Every contract or agreement of an employer the purpose of which is to indemnify him from loss or damage on account of the injury of an employee by accidental means, or on account of the negligence of such employer or his officer, agent or servant, shall be absolutely void unless it shall also cover liability for the payment of the compensation provided for by this chapter.

5. Cancellation of insurance contracts. No contract of insurance issued by a stock company or mutual association against liability arising under this chapter shall be cancelled within the time limited in such contract for its expiration until at least ten days after notice of intention to cancel such contract, on a date specified in such notice, shall be filed in the office of the commission and also served on the employer. Such notice shall be served on the employer by delivering it to him or by sending it by mail, by registered letter, addressed to the employer at his or its last known place of residence; provided that, if the employer be a partnership, then such notice may be so given to any one of the partners, and if the employer be a corporation, then the notice may be given to any agent or officer of the corporation upon whom legal process may be served.

ARTICLE 4.

State Workmen's Compensation Commission.

Sec. 60. *State workmen's compensation commission.* A state workmen's compensation commission is hereby created, consisting of five commissioners, to be appointed by the governor, by and with the advice and consent of the senate, one of whom shall be designated by the governor as chairman, not more than three of which shall belong to the same political party. The commissioner of labor shall also be an ex-officio member of the commission but shall not have a vote on orders, decisions or awards. Appointments may be made during the recess of the senate, but shall be subject to confirmation by the senate at the next ensuing session of the legislature. The term of office of appointive members of the commission shall be five years, except that the first members thereof shall be appointed for such terms that the term of one member shall expire on January first, nineteen hundred and sixteen, and on January first of every succeeding year. Successors shall be appointed in like manner for a full term of five years. Vacancies shall be filled in like manner by appointment for the unexpired term. Each appointive member of the commission shall before entering upon the duties of his office execute an official undertaking in the sum of fifty thousand dollars to be approved by the comptroller and filed in his office. The governor may remove any appointive commissioner for inefficiency, neglect of duty or misconduct in office, giving him a copy of the charges and an opportunity of being publicly heard in person or by counsel, upon not less than ten days' notice If such a commissioner be removed, the governor shall file in the office of the secretary of state a complete statement of all charges made against him and a complete record of his proceedings and his findings thereon. Each appointive commissioner shall devote his entire time to the duties of his office, and shall not hold any position of trust or profit, or engage in any occupation or business interfering or inconsistent with his duties as such commissioner, or serve on or under any committee of a political party. The commissioner shall have an official seal which shall be judicially noticed.

Sec. 61. *Secretary, deputies and other employees.* The commission may appoint one or more deputy commissioners and a secretary to hold office during its pleasure. It may also employ, during its pleasure, an actuary, accountants, medical doctors, clerks, stenographers, inspectors and other employees as may be needed to carry out the provisions of this chapter. The authority, duties and compensation of all subordinates and employees, except as provided by this chapter, shall be fixed by the commission.

Sec. 62. *Salaries and expenses.* The chairman of the commission shall receive an annual salary of ten thousand dollars, and each other commissioner, an annual salary of seven thousand dollars. The secretary shall receive an annual salary of five thousand dollars. The commissioners and their subordinates shall be entitled to their actual and necessary expenses while traveling on the business of the commission. The commission may also make the necessary expenditure to obtain statistical and other information to establish classifications of employments with respect to hazards and risks. The salaries and compensation of the subordinates and all other expenses of the commission, including the premiums to be paid by the state treasurer for the bond to be furnished by him, shall be paid out of the state treasury upon vouchers signed by at least two commissioners.

Sec. 63. *Office.* The commission shall keep and maintain its principal office in the city of Albany, in rooms in the capitol assigned by the trustees of public buildings. The office shall be supplied with necessary office furniture, supplies, books, maps, stationery, telephone connections and other necessary appliances, at the expense of the state, payable in the same manner as other expenses of the commission.

Sec. 64. *Sessions of commission.* The commission shall be in continuous session and open for the transaction of business during all business hours of every day excepting Sundays and legal holidays. All sessions shall be open to the public and may be adjourned, upon entry thereof in its records, without further notice. Whenever convenience of parties will be promoted or delay and expense prevented, the commission may hold sessions in cities other than the city of Albany. A party may appear before such commission and be heard in person or by attorney. Every vote and official act of the commission shall be entered of record, and the records shall contain a record of each case considered, and the award, decision or order made with respect thereto, and all voting shall be by the calling of each commissioner's name by the secretary and each vote shall be recorded as cast. A majority of the commission shall constitute a quorum. A vacancy shall not impair the right of the remaining commissioners to exercise all the powers of the full commission so long as a majority remains.

Sec. 65. *Powers of individual commissioners and deputy commissioners.* Any investigation, inquiry or hearing which the commission is authorized to hold or undertake may be held or taken by or before any commissioner or deputy commissioner, and the award, decision or order of a commissioner or deputy commissioner, when approved and confirmed by the commission and ordered filed in its office, shall be deemed to be the award, decision, or order of the commission. Each commissioner and deputy shall, for the purposes of this chapter, have power to administer oaths, certify to official acts, take depositions, issue subpœnas, compel the attendance of witnesses and the production of books, accounts, papers, records, documents and testimony. The commission may authorize any deputy to conduct any such investigation, inquiry or hearing, in which case he shall have the power of a commissioner in respect thereof.

Sec. 66. *Powers and duties of secretary.* The secretary of the commission shall:

1. Maintain a full and true record of all proceedings of the commission, of all documents or papers ordered filed by the commission, of decisions or orders made by a commissioner or deputy commissioner, and of all decisions or orders made by the commission or approved and confirmed by it and ordered filed, and he shall be responsible to the commission for the safe custody and preservation of all such documents at its office;

2. Have power to administer oaths in all parts of the state so far as the exercise of such power is properly incident to the performance of his duty or that of the commission;

3. Designate, from time to time, with the approval of the commission, one of the clerks appointed by the commission to exercise the powers and duties of the secretary during his absence;

4. Under the direction of the commission, have general charge of its office, superintend its clerical business, and perform such other duties as the commission may prescribe.

Sec. 67. *Rules.* The commission shall adopt reasonable rules, not inconsistent with this chapter, regulating and providing for

1. The kind and character of notices, and the service thereof, in case of accident and injury to employees;

2. The nature and extent of the proofs and evidence, and the method of taking and furnishing the same, to establish the right to compensation;

3. The forms of application for those claiming to be entitled to compensation;

4. The method of making investigations, physical examinations and inspections;

5. The time within which adjudications and awards shall be made;

6. The conduct of hearings, investigations and inquiries;

7. The giving of undertakings by all subordinates who are empowered to receive and disburse moneys, to be approved by the attorney-general as to form and by the comptroller as to sufficiency;

8. Carrying into effect the provisions of this chapter;

9. The collection, maintenance and disbursement of the state insurance fund.

Sec. 68. *Technical rules of evidence or procedure not required.* The commission or a commissioner or deputy commissioner in making an investigation or inquiry or conducting a hearing shall not be bound by common law or statutory rules of evidence or by technical or formal rules of procedure, except as provided by this chapter; but may make such investigation or inquiry or conduct such hearing in such manner as to ascertain the substantial rights of the parties.

Sec. 69. *Issue of subpœna; penalty for failure to obey.* A subpœna shall be signed and issued by a commissioner, a deputy commissioner or by the secretary of the commission and may be served by any person of full age in the same manner as a subpœna issued out of a court of record. If a person fail, without reasonable cause, to attend in obedience to a subpœna, or to be sworn or examined or answer a question or produce a book or paper, or to subscribe and swear to his deposition after it has been correctly reduced to writing, he shall be guilty of a misdemeanor.

Sec. 70. *Recalcitrant witnesses punishable as for contempt.* If a person in attendance before the commission or a commissioner or deputy commissioner refuses, without reasonable cause, to be examined, or to answer a legal and pertinent question or to produce a book or paper, when ordered so to do by the commission or a commissioner or deputy commissioner, the commission may apply to a justice of the supreme court upon proof by affidavit of the facts for an order returnable in not less than two nor more than five days directing such person to show cause before the justice who made the order, or any other justice of the supreme court, why he should not be committed to jail. Upon the return of such order the justice shall examine under oath such person and give him an opportunity to be heard; and if the justice determine that he has refused without reasonable cause or legal excuse to be examined or to answer a legal and pertinent question, or to produce a book or paper which he was ordered to bring, he may forthwith, by warrant, commit the offender to jail, there to remain until he submits to do the act which he was so required to do or is discharged according to law.

Sec. 71. *Fees and mileage of witnesses.* Each witness who appears in obedience to a subpœna before the commission or a commissioner or deputy commissioner, or person employed by the commission to obtain the required information, shall receive for his attendance the fees and mileage provided for witnesses in civil cases in the supreme court, which shall be audited and paid from the state treasury in the same manner as other expenses of the commission. A witness subpœned at the instance of a party other than the commission, a commissioner, deputy commissioner or person acting under the authority of the commission shall be entitled to fees or compensation from the state treasury, if the commission certify that his testimony was material to the matter investigated, but not otherwise.

Sec. 72. *Depositions.* The commission may cause depositions of witnesses residing within or without the state to be taken in the manner prescribed by law for like depositions in civil actions in the supreme court.

Sec. 73. *Transcript of stenographer's minutes; effect as evidence.* A transcribed copy of the testimony, evidence and procedure or of a specific part thereof, or of the testimony of a particular witness or of a specific part thereof, on any investigations by a stenographer appointed by the commission, being certified by such stenographer to be a true and correct transcript thereof and to have been carefully compared by him with his original notes, may be received in evidence by the commission with the same effect as if such stenographer were present and testified to the facts so certified, and a copy of such transcript shall be furnished on demand to any party upon payment of the fee provided for a transcript of similar minutes in the supreme court.

Sec. 74. *Jurisdiction of commission to be continuing.* The power and jurisdiction of the commission over each case shall be continuing, and it may, from time to time, make such modification or change with respect to former findings or orders relating thereto, as in its opinion may be just.

Sec. 75. *Report of commission.* Annually on or before the first day of February, the commission shall make a report to the legislature, which shall include a statement of the number of awards made by it and the causes of the accidents leading to the injuries for which the awards were made, a detailed statement of the expenses of the commission, the condition of the state insurance fund, together with any other matter which the commission deems proper to report to the legislature, including any recommendations it may desire to make.

Sec. 76. *Commission to furnish blank forms.* The commission shall prepare and cause to be distributed so that the same may be readily available, blank forms of application for compensation, notice to employers, proofs of injury or death, of medical or other attendance or treatment, of employment and wage earnings, and for such other purposes as may be required. Insured employers shall constantly keep on hand a sufficient supply of such blanks.

ARTICLE 5.

State Insurance Fund.

Sec. 90. *Creation of state fund.* There is hereby created a fund to be known as "the state insurance fund," for the purpose of insuring employers against liability under this chapter and of assuring to the persons entitled thereto the compensation provided by this chapter. Such fund shall consist of all premiums received and paid into the fund, of property and securities acquired by and through the use of moneys belonging to the fund and of interest earned upon moneys belonging to the fund and deposited or invested as herein provided. Such fund shall be administered by the commission without liability on the part of the state beyond the amount of such fund. Such fund shall be applicable to the payment of losses sustained on account of insurance and to the payment of expenses in the manner provided in this chapter.

Sec. 91. *State treasurer custodian of fund.* The state treasurer shall be the custodian of the state insurance fund; and all disbursements therefrom shall be paid by him upon vouchers authorized by the commission and signed by any two members thereof. The state treasurer shall give a separate and additional bond in an amount to be fixed by the governor and with sureties approved by the state comptroller conditioned for the faithful performance of his duty as custodian of the state fund. The state treasurer may deposit any portion of the state fund not needed for immediate use, in the manner and subject to all the provisions of law respecting the deposit of other state funds by him. Interest earned by such portion of the state insurance fund deposited by the state treasurer shall be collected by him and placed to the credit of the fund.

Sec. 92. *Surplus and reserve.* Ten per centum of the premiums collected from employers insured in the fund shall be set aside by the commission for the creation of a surplus until such surplus shall amount to the sum of one hundred thousand dollars, and thereafter five per centum of such premiums, until such time as in the judgment of the commission such surplus shall be sufficiently large to cover the catastrophe hazard. The commission shall also set up and maintain a reserve adequate to meet anticipated losses and carry all claims and policies to maturity.

Sec. 93. *Investment of surplus or reserve.* The commission may, pursuant to a resolution of the commission approved by the comptroller, invest any of the surplus or reserve funds belonging to the state insurance fund in the same securities and investments authorized for investment by savings banks. All such securities or evidences of indebtedness shall be placed in the hands of the state treasurer who shall be the custodian thereof. He shall collect the principal and interest thereof, when due, and pay the same into the state insurance fund. The state treasurer shall pay all vouchers drawn on the state insurance fund for the making of such investments when signed by two members of the commission, upon delivery of such securities or evidences of indebtedness to him, when there is attached to such vouchers a certified copy of the resolution of the commission authorizing the investment. The commission may, upon like resolution approved by the comptroller, sell any of such securities.

Sec. 94. *Administration expense.* The entire expense of administering the state insurance fund shall be paid in the first instance by the state, out of moneys appropriated therefor. In the month of January, nineteen hundred and eighteen, and annually thereafter in such month, the commission shall ascertain the just amount incurred by the commission during the preceding calendar year, in the administration of the state insurance fund exclusive of the expense for the examination, determination and payment of claims, and shall refund such amount to the state treasury. If there be employees of the commission other than the commissioners themselves and the secretary whose time is devoted partly to the general work of the commission and partly to the work of the state insurance fund, and in case there is other expense which is incurred jointly on behalf of the general work of the commission and the state insurance fund, an equitable apportionment of the expense shall be made for such purpose and the part thereof which is applicable to the state insurance fund shall be chargeable thereto. As soon as practicable after December thirty-one, nineteen hundred and seventeen, and annually thereafter, the commission shall calculate the total administrative expense incurred during the preceding calendar year in connection with the examination, determination and payment of claims and the percentage which this expense bore to the total compensation payments made during that year. The percentage so calculated and determined shall be assessed against the insurance carriers, including the state fund as an addition to the payments required from them in the settlement of claims during the year immediately following, and the amount so secured shall be transferred to the state treasury to reimburse it for this portion of the expense of administering this chapter.

Sec. 95. *Classification of risks and adjustment of premiums.* Employments coming under the provisions of this chapter shall be divided for the purposes of the state fund, into the groups set forth in section two of this chapter. Separate accounts shall be kept of the amounts collected and expended in respect to each such group for convenience in determining equitable rates; but for the purpose of paying compensation the state fund shall be deemed one and indivisible. The commission shall have power to rearrange any of the groups set forth in section two by withdrawing any employment embraced in it and transferring it wholly or in part to any other group, and from such employments to set up new groups at its discretion. The commission shall determine the hazards of the different classes composing each group and fix the rates of premiums therefor based upon the total payroll and number of employees in each of such classes of employment at

the lowest possible rate consistent with the maintenance of a solvent state insurance fund and the creation of a reasonable surplus and reserve; and for such purpose may adopt a system of schedule rating in such a manner as to take account of the peculiar hazard of each individual risk.

Sec. 96. *Associations for accident prevention.* The employers in any of the groups described in section two or established by the commission may with the approval of the commission form themselves into an association for accident prevention, and may make rules for that purpose. If the commission is of the opinion that an association so formed sufficiently represents the employers in such group, it may approve such rules, and when so approved and approved by the industrial board of the labor department they shall be binding on all employers in such group. If such an approved association appoint an inspector or expert for the purpose of accident prevention, the commission may at its discretion provide in whole or in part for the payment of the remuneration and expenses of such inspector or expert, such payment to be charged in the accounting to such group. Every such approved association may make recommendations to the commission concerning the fixing of premiums for classes of hazards, and for individual risks within such group.

Sec. 97. *Requirements in classifying employment and fixing and adjusting premium rates.* The following requirements shall be observed in classifying employments and fixing and adjusting premium rates:

1. The commission shall keep an accurate account of the money paid in premiums by each of the several classes of employments or industries, and the disbursements on account of injuries and deaths of employees thereof, including the setting up of reserves adequate to meet anticipated losses and to carry the claims to maturity, and also, on account of the money received from each individual employer and the amount disbursed from the state insurance fund on account of injuries and death of the employees of such employer, including the reserves so set up;

2. On January first, nineteen hundred and fifteen, and every fifth year thereafter, and at such other times as the commission, in its discretion, may determine, a readjustment of the rate shall be made for each of the several groups of employment or industries and of each hazard class therein, which, in the judgment of the commission, shall have developed an average loss ratio, in accordance with the experience of the commission in the administration of the law as shown by the accounts kept as provided herein:

3. If any such accounting show an aggregate balance (deemed by the commission to be safely and properly divisible) remaining to the credit of any class of employment or industry, after the amount required shall have been credited to the surplus and reserve funds and after the payment of all awards for injury or death lawfully chargeable against the same the commission may in its discretion credit to each individual member of such group, who shall have been a subscriber to the state insurance fund for a period of six months or more prior to the time of such readjustment, and whose premium or premiums exceed the amount of the disbursements from the fund on account of injuries or death of his employees during such period, on the instalment or instalments of premiums next due from him such proportion of such balance as the amount of his prior paid premiums sustains to the whole amount of such premiums paid by the groups to which he belongs since the last readjustment of rates;

4. If the amount of premiums collected from any employer at the beginning of any period of six months is ascertained and calculated by using the estimated expenditure of wages for the period of time covered by such premium payment as a basis, an adjustment of the amount of such premium shall be made at the end of such six months, and the actual amount of such premium shall be determined in accordance with the amount of the actual expenditure of wages for such period; and, if such wage expenditure for such period is less than the amount on which such estimated premium was collected, such employer shall be entitled to receive a refund from the state insurance fund of the difference between the amount so paid by him and the amount so found to be actually due, or to have the amount of such difference credited on succeeding premium payments, at his option; and if such actual premium, when so ascertained, exceeds in amount a premium so paid by such employer at the beginning of such six months, such employer shall immediately upon being advised of the true amount of such premium due, forthwith pay to the treasurer of the state an amount equal to the difference between the amount actually found to be due and the amount paid by him at the beginning of such six months' period.

Sec. 98. *Time of payment of premiums.* Except as otherwise provided in this chapter, all premiums shall be paid by every employer into the state insurance fund on or before July first, nineteen hundred and fourteen, and semi-annually thereafter or at such other time or times as may be prescribed by the commission. The commission shall mail a receipt for the same to the employer and place the same to the credit of the state insurance fund in the custody of the state treasurer.

Sec. 99. *Action for collection in case of default.* If an employer shall default in any payment required to be made by him to the state insurance fund, the amount due from him shall be collected by civil action against him in the name of the people of the state of New York, and it shall be the duty of the commission on the first Monday of each month after July first, nineteen hundred and fourteen, to certify to the attorney-general of the state the names and residences, or places of business, of all employers known to the commission to be in default for such payment or payments for a longer period than five days and the amount due from such employer, and it shall then be the duty of the attorney-general forthwith to bring or cause to be brought against each such employer a civil action in the proper court for the collection of such amount so due, and the same when collected, shall be paid into the state insurance fund, and such employer's compliance with the provisions of this chapter requiring payments to be made to the state insurance fund shall date from the time of the payment of said money so collected as aforesaid to the state treasurer for credit to the state insurance fund.

Sec. 100. *Withdrawal from fund.* Any employer may, upon complying with subdivision two or three of section fifty of this chapter, withdraw from the fund by turning in his insurance contract for cancellation, provided he is not in arrears for premiums due the fund and has given to the commission written notice of his intention to withdraw within thirty days before the expiration, of the period for which he has elected to insure in the fund; provided that in case any employer so withdraws, his liability to assessments shall, notwithstanding such withdrawal, continue for one year after the date of such withdrawal as against all liabilities for such compensation accruing prior to such withdrawal.

Sec. 101. *Audit of payrolls.* Every employer who is insured in the state insurance fund shall keep a true and accurate record of the number of his employees and the wages paid by him, and shall furnish to the commission, upon demand a sworn statement of the same. Such record shall be open to inspection at any time and as often as the commission shall require to verify the number of employees and the amount of the payroll.

Sec. 102. *Falsification of payroll.* An employer who shall wilfully misrepresent the amount of the payroll upon which the premiums chargeable by the state insurance fund is to be based shall be liable to the state in ten times the amount of the difference between the premiums paid and the amount the employer should have paid had his payroll been correctly computed; and the liability to the state under this section shall be enforced in a civil action in the name of the state

insurance fund, and any amount so collected shall become a part of such fund.

Sec. 103. *Wilful misrepresentation.* Any person who wilfully misrepresents any fact in order to obtain insurance in the state insurance fund at less than the proper rate for such insurance, or in order to obtain payment out of such fund, shall be guilty of a misdemeanor.

Sec. 104. *Inspections.* The commision shall have the right to inspect the plants and establishments of employers insured in the state insurance fund; and the inspectors designated by the commision shall have free access to such premises during regular working hours.

Sec. 105. *Disclosures prohibited.* Information acquired by the commission or its officers or employees from employers or employees pursuant to this chapter shall not be opened to public inspection, and any officer or employee of the commission who, without authority of the commission or pursuant to its rules or as otherwise required by law shall disclose the same shall be guilty of a misdemeanor.

ARTICLE 6.

Miscellaneous Provisions.

Section 110. Penalties applicable to expenses of commission.
111. Record and report of injuries by employers.
112. Information to be furnished by employer.
113. Inspection of records of employers.
114. Interstate commerce.
115. Penalties for false representations.
116. Limitation of time.
117. Duties of commissioner of labor.
118. Unconstitutional provisions.
119. Actions or causes of action pending.

Sec. 110. *Penalties applicable to expenses of commission.* All penalties imposed by this chapter shall be applicable to the expenses of the commission. When collected by the commission such penalties shall be paid into the state treasury and be thereafter appropriated by the legislature for the purposes prescribed by this section.

Sec. 111. *Record and report of injuries by employers.* Every employer shall keep a record of all injuries, fatal or otherwise, received by his employees in the course of their employment. Within ten days after the occurrence of an accident resulting in personal injury a report thereof shall be made in writing by the employer to the commission upon blanks to be procured from the commission for that purpose. Such report shall state the name and nature of the business of the employer, the location of his establishment or place of work, the name, address and occupation of the injured employee, the time, nature and cause of the injury and such other information as may be required by the commission. An employer who refuses or neglects to make a report as required by this section shall be guilty of a misdemeanor, punishable by a fine of not more than five hundred dollars.

Sec. 112. *Information to be furnished by employer.* Every employer shall furnish the commission, upon request, any information required by it to carry out the provisions of this chapter. The commission, a commissioner, deputy commissioner, or any person deputized by the commission for that purpose, may examine under oath any employer, officer, agent or employee. An employer or an employee receiving from the commission a blank with directions to file the same shall cause the same to be properly filled out so as to answer fully and correctly all questions therein, or if unable to do so, shall give good and sufficient reasons for such failure. Answers to such questions shall be verified under oath and returned to the commission within the period fixed by the commission therefor.

Sec. 113. *Inspection of records of employers.* All books, records and payrolls of the employers showing or reflecting in any way upon the amount of wage expenditures of such employers shall always be open for inspection by the commission or any of its authorized auditors, accountants or inspectors for the purpose of ascertaining the correctness of the wage expenditure and number of men employed and such other information as may be necessary for the uses and purposes of the commission in the administration of this chapter.

Sec. 114. *Interstate commerce.* The provisions of this chapter shall apply to employers and employees engaged in intrastate, and also in interstate or foreign commerce, for whom a rule of liability or method of compensation has been or may be established by the congress of the United States, only to the extent that their mutual connection with intrastate work may and shall be clearly separable and distinguishable from interstate or foreign commerce, except that such employer and his employees working only in this state may, subject to the approval and in the manner provided by the commission and so far as not forbidden by any act of congress, accept and become bound by the provisions of this chapter in like manner and with the same effect in all respects as provided herein for other employers and their employees.

Sec. 115. *Penalties for false representation.* If for the purpose of obtaining any benefit or payment under the provisions of this chapter, either for himself or any other person, any person wilfully makes a false statement or representation, he shall be guilty of a misdemeanor.

Sec. 116. *Limitation of time.* No limitation of time provided in this chapter shall run as against any person who is mentally incompetent or a minor dependent so long as he has no committee, guardian or next friend.

Sec. 117. *Duties of commissioner of labor.* The commissioner of labor shall render to the commission any proper aid and assistance by the department of labor as in his judgment does not interfere with the proper conduct of such department.

Sec. 118. *Unconstitutional provisions.* If any section or provision of this chapter be decided by the courts to be unconstitutional or invalid, the same shall not affect the validity of the chapter as a whole or any part thereof other than the part so decided to be unconstitutional or invalid.

Sec. 119. *Actions or causes of action pending.* This act shall not affect any action pending or cause of action existing or which accrued prior to July first, nineteen hundred and fourteen.

ARTICLE 7.

Laws Repealed; When to Take Effect.

Section 130. Laws repealed.
131. When to take effect.

Sec. 130. *Laws repealed.* Article fourteen-a and sections two hundred and fifteen to two hundred and nineteen-g, both inclusive, of chapter thirty-six of the laws of nineteen hundred and nine, as amended by chapter six hundred and seventy-four of the laws of nineteen hundred and ten, are hereby repealed.

Sec. 131. *When to take effect.* This chapter shall take effect immediately, provided that the application of this chapter as between employers and employees and the payment of compensation for injuries to employees or their dependents, in case of death, shall take effect July first, nineteen hundred and fourteen, but payments into the state insurance fund may be made prior to July first, nineteen hundred and fourteen.

Sec. 2. This act shall take effect immediately, except as provided in section one hundred and thirty-one as re-enacted hereby.

State of New York,)
Office of the Secretary of State.) ss:

I have compared the preceding with the original law on file in this office, and do hereby certify that the same is a correct transcript therefrom and of the whole of said original law.

MITCHELL MAY,
Secretary of State

NEW YORK STATE JOURNAL OF MEDICINE

A Journal Devoted to the Interests of the Medical Society of the State of New York

JOHN COWELL MAC EVITT, M.D., Editor

Business and Editorial Offices: 17 West 43d Street, New York, U. S. A.
Address Journals sent in Exchange to 1313 Bedford Avenue, Brooklyn, N. Y., U. S. A.

Vol. XIV. NOVEMBER, 1914 No. 11

EDITORIAL DEPARTMENT

THE RELATIONSHIP OF THE WORKMEN'S COMPENSATION LAW TO THE MEDICAL PROFESSION.

IT is to be considered that the administration of the Workmen's Compensation Law in the State of New York is at the present time in an experimental, or rather let us say, developmental stage.

The labor of the Commission is vast and comprehensive; new problems for solution present themselves hourly. The aim of the Commission is not alone to protect the rights of the injured employee but to conserve as well the rights of the employer and to arbitrate all claims, including those for medical attendance. No doubt in the adjustments of contentions, dissatisfaction and dissension will arise, until time crystalizes precedents into well established rules. Notwithstanding many expressed views to the contrary, we are of the opinion that it is one of the most just laws enacted this many-a-day for all concerned. Furthermore, the medical profession has every reason to be grateful as it is the first time that our legislative body has, by the enactment of a law, recognized the rights of medical men in and out of hospitals to be paid for their services when rendered to injured workmen in the employment of employers financially able to meet the charge for such services. In the past no matter how honest the injured wage-earner was, his enforced idleness and loss of salary, together with the expense of supporting his family, left him so heavily in debt that paying the doctor for his services was beyond his power.

Heretofore also it was the practice of many employers, including corporations of wealth, to cause their injured workmen to be ambulanced off to a hospital and there thrown upon the charity of the institution for food and nursing, and upon doctors (serving gratuitously) for medical attention—pauperizing the patient and stealing from charity. The Workmen's Compensation Law does away with this species of contemptible duplicity—for which let us give thanks!

"THE FEE BILL AND HOW DETERMINED."

The Medical and Surgical Fee Bill was published in the August number of the NEW YORK STATE JOURNAL OF MEDICINE. With it you should be conversant.

In the report which the Secretary of the State Medical Society, Dr. Wisner R. Townsend, presented to the House of Delegates at its Annual Meeting in New York, April 27,

1914, he stated that it seemed desirable for the society to appoint a committee of five members representing different parts of the state, to appear before the Workmen's Compensation Commission and present their views on questions affecting medical men.

The recommendation was approved by the House of Delegates, and the President appointed the following committee: Chairman, Dr. Alexander Lambert, Dr. James S. Cooley, Dr. Frederick H. Flaherty, Dr. Thomas H. McKee, Dr. John J. Moorhead and Dr. Frank Van Fleet.

At a meeting of the Council of the State Medical Society Dr. Darlington, a member of the Commission, Mr. Archer, Secretary of the Ohio Industrial Board, and representatives of several insurance companies appeared, and a free discussion was held on the subject of surgical and medical fees.

The committee, fortified with the fee bills of the different county societies, held several other meetings with members of the Commission and representatives of insurance companies, and, after adjustment of differences, and reciprocal concessions, a tentative fee bill was agreed upon for a trial of one year.

On the 23d of July the committee of the State Medical Society appeared before the Commission at its headquarters in New York City and presented to it for ratification this bill. Several objections were raised to its adoption, the most trenchant one was that the fees allowed were too high, *higher, in fact, than those of any of the states in which the Workmen's Compensation Law was in operation.* However, after a prolonged discussion it was adopted as a basis for settlement of medical claims for one year by the Commission and the insurance companies.

It is true that the fees agreed upon for specific surgical operations appear small and ill-proportioned. They are small when viewed from the heights of surgical eminence, but to the vast majority of surgeons the certainty of their payment lends to them a delightful attractiveness in the knowledge that formerly they received from this class of patient—*nothing.* The axiomatic is old saw about half a loaf being better than no bread would be here wasted, for in these warring times a muffin is not to be despised.

The committee of the State Medical Society has come in for a great deal of condemnatory criticism. It is the belief of many that it accomplished little or nothing. We will not attempt to confute this belief nor will we recount the value of its efforts but simply relate a couple of items of the many which should change this criticism into commendation.

In the Commission's "original bill." The fee for amputation of the foot was $40. The operation alone $25. Total limit for subsequent attention $15. Complete charge $40.

At present. Amputation of the foot $50. Operation alone $35. Total limit of subsequent attention $15. Complete charge $50.

In the Commission's "original bill." The fee for an ordinary visit to the patient's home, including antiseptic dressing, $1.50.

At present, $2.

Hospital or dispensary visits now $1.00, formerly nothing.

As we have stated, the fees allowed by the Commission in New York are greater than those of any other state. On page 547 you will find a comparison of the fees paid in Ohio in contrast with those paid in New York by the respective Commissions.

"FROM WHOM DOES THE DOCTOR COLLECT HIS FEES?"

The compensation to the injured employee, including medical care, is ultimately paid by the employer. Some employers, such as corporations, manufacturing and contracting firms, carry their own insurance. They are permitted to do this by depositing securities and cash with the Commission in an amount deemed adequate to insure their employees receiving the benefits of the Workmen's Com-

pensation Law. The insurer on the fifteenth of each month receives from the Commission a statement of all amounts paid out during the month and a check for this amount must be returned to keep the amount intact. Many employers of this class have salaried physicians in their employ to attend to their sick and injured workmen (where an employer takes care of his own injured employees, the State Fund makes a reduction of 20 per cent on their premiums). Such an employer will undoubtedly seek to make arrangements with hospitals to receive their injured employees and permit these salaried physicians to treat them whether these physicians be members of the particular hospital staffs or not.

Employers not carrying their own insurance will indemnify themselves against loss by taking out insurance policies with casualty, liability, mutual and other insurance companies allowed to do business under the laws of New York and supervised by the State Insurance Department or with the State Fund. Hence it follows when serving on the staff of a hospital which permits you to collect and retain the specific fees, or when attending an injured employee in his own home, to collect your bill your first duty will be to secure the name of the employer of the injured employee, and within ten days after the disability have the injured employee, or some one representing him (yourself if desired), notify in writing both the employer and the Commission in accordance with Article 2, Section 18, W. C. L. Upon the receipt of this notification the Commission will send to the hospital or the physician, making the report, blank forms to be filled out and returned in their sequential order. You will also receive blank forms from the employer or his insurance carrier which are to be treated in like manner.

REPORTS.

The filling out of these reports in duplicate, some of them calling for the most elaborate details, you will find most annoying and a serious encroachment upon your time, particularly so in minor cases. To prevent fraud and for statistical purposes, reports of this character are necessary, but it does seem that this, for the most part purely clerical labor, should be paid for. However, the Commission no doubt views it as a necessary part of the medical attendance for which you are to be compensated.

There exists an erroneous opinion that the sickness or injury must be of fourteen days duration before the injured employee receives any benefit from the Law. "The employer is compelled to promptly provide for the injured employee medical, surgical and other such requirements including nurse, hospital service, medicine, crutches and any apparatus that may be required or be requested for a period of sixty days after the injury. Should he fail to provide the same the injured employee may do so at the expense of his employer provided he has in advance requested his employer to furnish the same and he has refused or neglected to do so." It is only after expiration of fourteen days that the employee is entitled to receive the award of his scheduled wage rate.

"AGREEMENT BETWEEN HOSPITALS AND DISPENSARIES WITH THEIR MEDICAL STAFFS."

Many medical men are in a quandary as to the attitudes the hospitals will assume to their attending staffs in the matter of a division of the charge for attendance within the hospital. It will be somewhat difficult to differentiate between the surgeons' individual rights against those of the hospital as their mutual services are so intimately interwoven.

To secure some definite information on the subject the JOURNAL sent the following letter to seventy different hospitals in Greater New York, with the request that they would reply to the question asked on an enclosed card.

"October 21, 1914.

"GENTLEMEN:

"It is our intention to comment editorially in the November issue of the NEW YORK STATE JOURNAL of Medicine upon the 'Relationship of the

Workmen's Compensation Law to the Medical Profession.' Judging from the character of the inquiries which we have received many of our readers are at a loss to interpret the law regarding their rights to compensation for surgical and medical attendance rendered to injured employees coming under the law in their hospital affiliations.

"The JOURNAL will feel under great obligation to you if you will reply to the following questions (on the enclosed card) at your earliest convenience.

"Most gratefully yours,
"JOHN COWELL MACEVITT,
"Editor."

The JOURNAL feels under deep obligation to the officials of the hospitals of Greater New York who most courteously and promptly replied to its inquiries and who in many instances entered into explanatory details. We take this method of extending our thanks and request of them the pleasure of reciprocating in kind should the occasion ever arise.

Many of the hospitals expressed their inability to answer the questions propounded owing to the fact that the questions were still under consideration. Notably among these were the Department of Public Charities including Bellevue and allied hospitals and the Department of Health. Others stated that replies would be sent after the next meeting of their Board of Managers. There was such a lack of uniformity in the replies to the different questions that the best we can do with the space we have at our disposal, is to summarize the answers under each question without indicating the number of hospitals replying to each individual question. Answers to the questions will follow in numerical order.

* * * *

1. Will the —— Hospital permit members of its staff to collect and retain the fees allowed by the Commission for services rendered in the hospital to injured employees coming under the Workmen's Compensation Law?

Answers.—Yes.——No.——Under certain regulations.——With approval of hospital.——Yes, for hospital cases; no, for dispensary cases.——No. except for private room cases.——Still under consideration.——Will refuse to contract for treatment under the law.——Will make no distinction from ordinary hospital cases.——Patients treated in our pay wards must arrange for physicians and hospital as in any other case.——Fees, except in private rooms, will be turned into the hospital fund.——Expect to change our rules to permit visiting surgeons to collect fees.

2. Will the —— Hospital assign in regular order injured employees coming under the law to the surgeon on duty in accordance with the existing rules of the hospital or will it assign the patient to a member of the surgical staff selected by the employer sending the case to the hospital?

Answers—First part, yes.——Second part, yes, if requested.——To private room cases.——Where under contract with a special corporation.

* * * *

3. Will the —— Hospital permit a surgeon not on its staff to operate on or treat an injured employee coming under the law at the request of the employer referring the case to the hospital?

Answers—No.——Yes, when treated as private patients.——Yes, when occupying private rooms.——Yes, when approved of by the physician or surgeon-in-chief.

* * * *

4. Will the —— Hospital make a contract to receive and treat injured employees for a stated sum which will include the fees allowed by the Commission for operations and attendance, thus depriving the members of the surgical and medical staff from receiving or retaining such fees?

Answer—No.

* * * *

5. Will the —— Hospital permit members of the Dispensary Staff to collect and retain the fees allowed by the Commission for medical or surgical attention in the dispensary to injured employees under the law?

Answers—No.——Yes, under consideration.——Half only, other half to hospital. Hospital will collect.——Dispensary collects and turns over to doctors.——Dispensary is allowed to give emergency treatment only to Compensation Law cases.——Yes, when the dispensary is used as an accident department and the staff thereof treat employees under the law.

* * * *

The reply we received from the Superintendent of Roosevelt Hospital,* sheds so much light upon the question at issue, and points out a mode of procedure definite in scope and so simple in performance, that we publish it in the belief that it will be of mutual aid to hospital and staffs not as yet in agreement upon their plan of action.

* See page 547.

Original Articles

THE CORRECTION OF .NASAL DEFORMITIES BY MECHANICAL REPLACEMENT AND THE TRANSPLANTATION OF BONE (WITH LANTERN DEMONSTRATION).*

By WILLIAM WESLEY CARTER, A.M., M.D.,
NEW YORK CITY.

FROM the point of view which I have maintained in my work on deformities of the nose, the framework is the basic, essential structure with which we have to deal. This framework which constitutes the nasal arch, may be considered an arc built up of an indefinite number of segments assembled on a curved line in such a way as to retain their position when the structure is supported extraneously only at its two extremities. Broadly speaking, the displacement of one or more of these segments produces a deformity amenable to the bridge-splint operation, while the absence of one or more of these segments would suggest the transplantation of bone to replace it.

FIG. 9.—Same as Fig. 8 after correction by transplantation of bone.

The septum strengthens the nasal arch, but it does not support it, for it may be entirely removed without endangering this structure, provided that its upper edge, which acts as the keystone of the arch is left undisturbed. Several cases of depressed deformity of the nose have come under my observation which resulted from the submucous operation, the keystone of the arch having been destroyed either at the time of the operation or by a subsequent infection.

The proper use of a mechanical contrivance for the correction of a nasal deformity necessitates that we have clearly fixed in our mind not only the results which we wish to accomplish, but what is of far greater importance we must understand the mechanics of the apparatus employed. The lines of force exerted by a mechanical appliance are definite and invariable, and when it is applied the results obtained are fixed with mathematical precision.

FIG. 10.—Specific deformity.

The action of the bridge-splint is intended to duplicate the forces employed by nature in the development of the flattened nose of the infant into the more prominent organ of the adult. When it is applied in the case of a depressed deformity it corrects this by reversing the direction of the forces that produced it.

The use of this instrument presupposes that there remains in the nose a sufficient amount of bony and cartilaginous framework to sustain it in its proper position after the removal of the artificial support.

The bridge-splint, with which many of you are already familiar, consists of two fenestrated, curved-steel wings, hinged together in the middle. The edges of these wings are padded with rubber and the distance to which they can be separated is regulated by a thumb-screw. To be used in connection with this bridge are two intra-nasal splints which are moulded out of sheet gutta-percha at the time of the operation and made to conform to the roof of the patient's nose. These are attached to silk sutures which are threaded into large curved needles.

Thorough mobilization of the framework in old cases is essential and is accomplished by means of a specially devised chisel-forceps, a chisel for intra-nasal use and the Adams forceps.

The chisel-forceps has a flat blade which is padded with rubber to protect the skin and when used rests on the outside of the nose. On the end of the other blade, and at right angles to it is a narrow chisel. This blade is passed into

* Read at the Annual Meeting of the Medical Society of the State of New York, April 29, 1914.

the nose and is used to cut through the nasal bones near their attachment to the frontal. The depth to which the chisel can cut is regulated by a set screw on the handle of the instrument.

The intra-nasal chisel is used for separating the nasal bones from the nasal processes of the superior maxillæ, or for splitting off a portion of the latter for use in building up the nasal arch. This instrument consists of a narrow chisel protected on either side by a blunt guide. The shaft is slender and near the handle is a cross-bar to facilitate the turning of the instrument in splitting off the piece of bone.

The Adams forceps is used for general mobilization of the tissues.

In describing the use of the bridge-splint, we will assume that we have a broad, irregularly flattened nose due to traumatism. The interior of such a nose is always badly deformed, the septum is crushed and one or both nasal cavities are obstructed. We will find that the nasal bones have been broken or disarticulated from their attachments to the frontal bone and that they override the nasal processes of the superior maxillæ, which may also be broken. The cartilaginous dorsum has become detached from the ends of the nasal bones and at this point there is a step-like depression. The intra-nasal condition is frequently the predominant cause of the patient's discomfort, and the fact that this too may be relieved by the bridge-splint is one of the strongest points in favor of its use. If, however, we have a massive, irregular septum it is better to do a submucous operation before putting on the bridge-splint. If the patient is under fourteen years of age Gleason's operation is recommended instead of the submucous.

In such a case as I have described we must first completely mobilize the entire framework of the nose by means of the instruments I have mentioned. The bridge-splint is then applied in the following manner:—the sutures to which the intra-nasal splints are attached are passed from within the nose through the cartilaginous dorsum just below the ends of the nasal bones. By means of these sutures the splints are pulled up against the roof of the nose. The lower ends of the splints should lie just within the vestibules, and the upper ends partially beneath the nasal bones. The bridge, the wings of which have been well padded with gauze, is then placed over the nose. The sutures attached to the intra-nasal splints are passed through corresponding fenestræ in the bridge and the dorsum of the nose lifted to the desired height; they are then tied together over the hinge of the bridge. The bony side-walls are then moved nearer together by means of the adjustment screw; this narrows the base of the nasal arch.

It will be seen that the opposing forces applied by means of this instrument tend to construct a normal nose. It will also be observed that these forces equalize each other, and, therefore, the instrument is self-retaining—in fact, it cannot be easily displaced. It should remain on about two weeks, but the bridge should be loosened up each day and the spot on either side of the nose where the wings rest should be bathed with alcohol in order to guard against necrosis of the skin.

In bridge-splint cases bony union occurs in three weeks, and the gaps between the bones caused by raising the bridge are usually filled in with bone in six weeks.

If the septum is too short, which is frequently the case, it can be readily understood that it will hold the dorsum of the nose down when the attempt is made to raise it. In such cases the septum may be lengthened in two ways: First by making a diagonal incision through the septum from the floor of one nostril upwards to the roof of the other. Then when the bridge of the nose is raised the two segments slide partially by each other and the septum is lengthened without leaving a perforation.

By the second method the septum is built up in the following manner: By means of a sharp, two-edged knife a flap, including a portion of the lateral cartilage is cut from the sides and roof of each nasal cavity, and the incisions are joined from side to side under the dorsum of the nose. The flaps being attached by their pedicles to the septum, are lifted up and fall together when the intra-nasal splints are applied. We thus add materially to the height of the septum which then supports the bridge in its elevated position. This method is particularly useful where there is a step-like depression at the ends of the nasal bones.

I have on several occasions used this method for correcting slight depressions of the cartilaginous dorsum without applying the bridge-splint. When this is done the flaps are held in their proper position by means of crossed-mattress sutures which pass through the dorsum of the nose.

My experience with the bridge-splint during the past seven years has been most satisfactory. I regard it as the ideal method for treating both recent and old traumatic cases, lateral deformities, etc. In fact its use is indicated in all of those cases where there is displacement (not destruction) of some of the primary segments of the nasal arch.

Some of my oldest cases have been under constant observation, and I can assure you that the good results obtained by this operation have been maintained, and in the case of children, their noses have attained to the symmetrical proportions of normal adult organs. I would particularly recommend the use of this instrument in fresh fractures where there has been considerable crushing of the bony parts of the nose. In these cases it should be applied as soon after the injury as possible.

In the light of my experience in a large number of cases, I will say that this method of

treating depressed deformities of the nose is founded upon sound mechanical principles, and it aims at the ideal in surgery: Namely, to restore the form and function of this organ by the replacement of its own tissues into their normal position.

Transplantation of Bone.

The limitations of the bridge-splint operation first suggested to me the idea of transplanting bone for the correction of those deformities due to a deficiency in the bony framework; a class of cases for which hitherto little or nothing had been done. A living tissue was chosen for the reason that in the opinion of the writer the introduction of foreign bodies into the tissues for the correction of a nasal deformity still remains a procedure of unfixed utility. And the healing in and permanent retention of these bodies in a fixed and satisfactory position is a matter of considerable doubt. Furthermore foreign bodies introduced into the tissues invite infection and they cause disintegration and absorption of the surrounding tissues.

In general we may say that depressed deformities in which there is a deficiency in the bony framework are suitable for bone transplantation. This deficiency may be due to:

(1) Congenital defects.
(2) Traumatism, accidental or operative (submucous operations).
(3) Abscess of the septum.
(4) Destructive diseases, such as syphilis, lupus and atrophic rhinitis.

The transplantation of bone into the tissues of the nose is an operation of extreme delicacy, and satisfactory results cannot be obtained unless the laws of antisepsis and asepsis are strictly observed. Infection destroys the life of the transplant and it either sloughs out at the time or is subsequently absorbed. Then, too, if strong antiseptics are used during the operation the cellular activity of the bone and the receiving tissues are impaired. After the first incision is made I use only physiological salt solution (9 gm. to 1,000 c. c.) freshly sterilized.

Preparation of the Patient.

The patient should be in good physical condition. If the deformity is due to syphilis we must be sure that there are no active manifestations of the disease present, and that the Wassermann test is negative. If due to atrophic rhinitis the usual accompanying sinusitis should be attended to, and the hygiene of the nose improved as much as possible. Several hours before the operation the nose and face and the right side of the chest should be scrubbed with green soap and water, followed by alcohol and a wet bichloride dressing (1-5,000) applied. At the time of the operation the eye-brows are covered with collodion and both operative fields are painted with tincture of iodine.

The nose is first prepared for the reception of the transplant.

There are two points at which the incision may be made through which the tissues are elevated and the transplant introduced:

(1) Through a curved incision made between the eyebrows.

(2) Through an incision made from within the nose at a point corresponding to the lower edge of the upper lateral cartilage. Considerable discretion, however, should be exercised in select-

Fig. 1.—Congenital deformity bone with periosteum—seven months after transplantation.

Fig. 2.—Same as Fig. 1. Bone transplantation with periosteum—fifteen months after operation. Note development of canal in center.

Fig. 3.—Same as Figs. 1 and 2. Bone transplantation with periosteum—twenty months after operation.

Fig. 4.—Bone transplantation without periosteum—seventeen months after operation.

ing which method shall be used in a given case. The first method is preferable in the majority of cases; these include the most marked deformities and those in which the nasal cavities are foul from old sinus suppuration.

A curvilinear incision, convexity downward, is made between the inner extremities of the eyebrows through the skin and subcutaneous tissues down to the periosteum. Through this the tissues are elevated by means of a special sharp elevator over the entire nose, and in some instances where there is considerable scar-tissue far out under the cheeks. The semilunar flap is then lifted up and a short horizontal incision is made through the periosteum just below the glabella. At this point the bone itself is incised in order to excite an osteogenesis, which will unite the transplant to the frontal bone. The so-called periosteum over the frontal bone is not an osteogenetic membrane, and is utilized in this operation merely to fix the upper end of the bone-graft.

Fig. 5.—Bone transplantation without periosteum. Note increased thickness of transplant when it comes in cantact with nasal bones. Note development of central canal—twenty-one months after operation. Same case as Fig. 4.

Fig. 6.—Bone transplantation without periosteum. Note remarkable growth of bone when transplant comes in contact with frontal and nasal bones—two years and four months after operation.

If the intra-nasal route is chosen, which may be done in cases of moderate severity and where the nasal cavities can be kept clean, the incision is made through the mucous membrane at the lower edge of the upper lateral cartilage, and through this the tissues are elevated and the bone introduced. A pocket is also made towards the tip of the nose in which to place the lower end of the transplant.

The field, having been prepared for the reception of the bone-graft, is then covered with sterile gauze, and we proceed to the next step in the operation, the removal of about two inches of the 9th rib on the right side. This is done with the costotome, the periosteum on the anterior surface only being preserved. This piece of rib is then split in its transverse diameter and the cancellous tissue scraped from the outer, periosteum-covered strip of compact bone. Recently I have attempted to imitate the shape of the nasal bones by making side wings to the dorsal strip of bone. This gives a better shape to the bridge and prevents the slight falling in which sometimes occurs on either side of the dorsal strip such as I have usually employed.

The transplant is then placed in its position in the nose; the lower end reaching nearly to the tip, and the upper end being anchored under the periosteum just below the glabella. The blood clot which has already formed in the wound is not expelled, for this nourishes the bone temporarily and later favors osteogenesis. The initial incision is then accurately closed with horsehair sutures and a collodion and gauze dressing applied. The sutures should be removed in three days.

In placing the transplant either the convex or the concave surface may look forward, depending on the deformity. If the deformity is not corrected by one strip of bone, several pieces may be superimposed. If there is much scar tissue, and especially if the deformity is extreme, lest the tension on the skin be too great, it is better to be content with establishing at the first operation a bony foundation firmly attached to the frontal bone, upon which to build subsequently. At least six months should elapse before the second operation.

When all of the bony structure has been destroyed, and there is no support for the dorsal strip of bone, I support the latter by means of an inverted V-shaped pier made of two additional strips of bone, which rest on the superior maxillæ on either side of the nasal notch. The correct position for these strips is shown in one of the X-ray plates. In other instances I have used the bridge-splint to support the transplant.

In one case I completely corrected the deformity by reversing the curves of two pieces of rib; the anterior strip being anchored under the periosteum over the naso-frontal process. The result in this case was particularly good.

In one case where the nose was absent, I first grafted the bone into the tissues of the arm, and at a subsequent operation grafted the flap containing the bone on to the face. When this had become united I severed the flap from the arm and shaped it into a fairly respectable nose, through which the patient now breathes, and with which she is highly delighted.

Where only the cartilaginous dorsum is involved in the deformity, cartilage transplants may be used, these should be introduced intranasally. I have frequently used in these cases large bony or cartilaginous spurs removed sub-

mucously at the time the deformity is corrected. I have recently examined a case in which rib cartilage was transplanted 2 1/2 years ago. The correction has been maintained, and there has been no change in the size of the transplant, but it had not become fixed to the underlying bone.

Fig. 7.—Showing the pier operation used when there is no support for transplant. Bone without periosteum.

The rib is selected for transplantation, as I stated in my first presentation of this subject, because it is suitable in shape, is conveniently located, its removal causes the patient little or on discomfort, and it is quickly reproduced. Furthermore, it is abundantly supplied with minute nutrient foramina.

Fig. 8.—Specific deformity.

The autoplastic operation, *i. e.*, the use of the patient's own tissue for transplantation is preferable to all others because, as I have previously pointed out, the chemical constitution, *i. e.*, the arrangement of the atoms in the molecule, is the same in both the transplant and the receiving tissues, so that there is no chemical antagonism between the two to interfere with the nutritive processes. These conditions would rarely be met, save in the tissues of the same individual. I have tried bone from another patient on two occasions without success. I consider the autoplastic operation the only one we are justified in doing.

Fig. 11.—Same as Fig. 10 after correction by bone transplantation.

The use of several small pieces of bone is preferable to large ones, for they are more easily nourished, and, besides, small fragments possess relatively greater osteogenetic power.

When introduced into the tissues, each particle of bone is surrounded by a serous pablum which nourishes it temporarily. This is followed by the development of new blood vessels from the surrounding parts and the proliferation of the osteoblasts contained in the transplant. In a case where I did a second operation two years after the first transplantation, I found the original transplant securely imbedded in the tissues and covered by a firm periosteum.

Bone transplanted into the soft parts, as into the nose, will give us a better idea of its individual characteristics than when it is used in filling in defects in the long bones, for in the latter situation it is being placed in its natural environment where its own characteristics will be confounded with those of neighboring tissues, namely, the periosteum and the bare ends of the injured bone.

The value of the periosteum and the ultimate fate of the bone transplant are subjects which have received considerable attention from writers

on this subject, and the wide divergence of opinion leads me to believe that much that has been written is based upon conjecture rather than clinical observation. Or else it is due to a difference in technique and in the local conditions in the operative field which may have affected the vitality of the transplant.

Bone is a tissue comparatively slow in its metabolic processes, therefore time is an essential element in estimating the change that occurs when it is transplanted into another part of the body.

My work in this field is, as far as I know, the first systematic effort made to correct nasal deformities by transplanting bone. Some of my cases, therefore, are of long enough standing to enable you to draw conclusions. Furthermore, all of my work has been done upon human subjects, and many of the cases have been under constant observation, so that conclusions drawn have direct practical value, and they are based upon historical facts and not upon prophesy, which would be the case if sufficient time had not elapsed since the operation, or if our experience had been limited to animal experimentation.

I have transplanted bone both with and without periosteum, and my oldest cases are of over four years standing. A detailed account of these cases would serve no useful purpose, I will therefore offer the following conclusions which are drawn from clinical observation and from repeated X-ray examinations. In my opinion they show the true status of autoplastic bone transplantation.

If the wound becomes infected the transplant may be expelled at once. If the infection is controlled by prompt, efficient means the transplant is probably dead and will in time be absorbed. But if the deformity was properly corrected it will remain so, as the absorption of bone is a slow process, and it is replaced by connective tissue, cartilage or bone which maintains the correction.

When live bone is properly and aseptically transplanted into the nose the results are as follows:

(1) Bone with or without periosteum and free in the soft tissues is osteogenetic and also probably acts in an osteo-inductive capacity.

(2) Bone uncovered by periosteum when connected with live, periosteum-covered bone is osteo-conductive and osteogenetic. The points of greatest growth being where it comes in contact with the periosteum.

(3) A periosteum-covered transplant in contact with live, periosteum-covered bone establishes a firm, bony union with the latter in three weeks, and it continues to live and grow practically unaffected by its change in environment. I have, as yet, noticed no overgrowth in such transplants, and I believe that their development is regulated by the physiological requirements of the part.

While the periosteum is not necessary for the preservation of the transplant, it certainly adds to its vigor and growth and contributes to the success of the operation. In view of my experience in these cases I cannot subscribe to McEwen's views; that the periosteum is merely a limiting membrane and that it has no osteogenetic function.

In conclusion I will say that the transplantation of bone offers a very satisfactory means of relief for a class of nasal deformities for which hitherto so little has been done.

Discussion.

Dr. E. B. Gleason, Philadelphia, Pa.: "I have seen cases operated by Carter's method of bone transplantation and carefully studied his technique demonstrated upon the cadaver before the Philadelphia Laryngological Society. The results of his operation are excellent and his technique apparently leaves nothing to be desired.

"If we divide cases of flattening of the bridge of the nose into two classes: those where there is lack of bone and cartilage, either as the result of actual destruction of the parts or lack of development; and those where the bony and cartilaginous parts are simply distorted or displaced, it would seem that for the first class of cases Carter's method of bone transplantation was one of the best, probably the best method of repair. In some of these cases the deformity is so great that even if bone transplantation does not produce a nose of classic beauty, at least there is a great improvement as regards the original deformity.

"However, in cases where the deformity is slight, I cannot help feeling that the injection of paraffin is the best treatment. It is generally advisable to have present one of the patient's family or friends and abide by their decision as to the shape of nose that will best satisfy the patient; because there seems a great difference of opinion as to what constitutes a beautiful nose. Paraffin smoothes out depressions and fills up hollows, but it is impossible to make a large sharp-ridge out of this material that will be firm enough to support the skin of the nose, and therefore, transplanted bone is better for this purpose.

"The first group of cases or those where there is no loss of bone and cartilage may be divided into recent and old deformities. In recent fractures the swelling of the soft parts is usually so great that it is difficult to determine the exact nature of the injury, nor when the fractured bones have been accurately replaced. In the case of professional pugilists a certain amount of deformity causes no unfavorable comment; but it is far different with æsthetic individuals. In such cases it is better to carefully replace the fractured bones under ether and then apply Carter's splint; because the mere replacing of the fragments without a general anæsthetic and retaining them in position with an improvised splint of

gauze and collodion usually results in at least some deformity.

"In old cases of saddle-back nose there is one precaution to be observed, no matter what method of operation is employed; and that is to so thoroughly destroy the resiliancy that there is no tendency for the deformity to be reproduced. If this is not done, it will make but little difference what splint is employed to hold the parts in position because the deformity will be reproduced at least partially. I have had the mortification to have had this occur in two cases several months after I had congratulated myself on a creditable result."

Dr. Herbert M. Goddard, Philadelphia: "I heartily agree with Dr. Yankauer when he says Dr. Carter has presented his papers so thoroughly that there seems very little left to be said. However, I want to say that it was my privilege some months ago, when Dr. Carter was a guest of the Philadelphia Laryngological Society, to see Dr. Carter's operations demonstrated on the cadaver.

"Some months ago it was my privilege to be present at a meeting before the New York Section, at which time Dr. Carter presented several of his cases of bone transplantation, and the results were very gratifying. These were cases of some years standing; in fact, I believe among his earlier cases. I was very much pleased that Dr. Carter emphasized the fact that his bridge-splint could be used upon long-standing as well as recent cases, and in this particular method I am sure we have something which will help overcome the many difficulties that have confronted us in the past in overcoming various nasal deformities which have always caused more of less anxiety in the past."

Dr. Sargent F. Snow, Syracuse: "This discussion would be incomplete without mention of the methods used by Roe, of Rochester, in correcting flattened, saddle-backed, or ordinary depressed deformities by submucous plastic operation using the anterior portion of the nasal bones for filling in the depression. This rather difficult procedure is performed by Dr. Roe under local anæsthesia, as a rule, and the three cases that I have had under observation have proven to be permanent successes after a period of from three to five years. The method, in brief, is to enter the submucous tissues with a slender round pointed knife, beginning at the juncture of the skin and mucosa of one alae sweeping the knife over, but behind the triangular cartilage, persistently working the knife upward and over the whole bridge of the nose until there is a complete separation of the mucous membrane from the bone and cartilage from the sides of the nose to well up beyond the nasal bones. A small saw is then introduced through the entrance secured at one alae, carried up in the freed submucous space to the anterior edge of the nasal bone of that side, and such a portion of it carefully sawed through as can be secured; this is grasped by slender forceps and worked over along side of and on top of the depressed portion of the septum; the same procedure is carried out on the other side and the two severed nasal bone sections are then moulded into place until the bridge of the nose is of required form. This is secured under a carefully molded splint held upward and in place by adhesive strips. Although perhaps not of universal application, this method has been very successful in Dr. Roe's hands and is of undoubted value."

Dr. W. W. Carter (closing): "Dr. Skinner is to be congratulated on his original and successful method of correcting the deformity in his difficult case. As to the use of extension flaps, they frequently become cyanosed and slough off from lack of circulation. In one such case I placed a leech on the distal end of the flap, determining the flow of blood into the flap and saving it after it was apparently dead."

REPORT ON THE RECENT DEVELOPMENTS IN OTOLOGY.*

By THOMAS J. HARRIS, M.D.,
NEW YORK CITY.

A REVIEW of the recent literature in the field of otology during the past two years to which this report is limited, reveals no strikingly important contribution, rather a commendable advance in many directions of work that has already been done. This is equally true of the proceedings of the Boston meeting of the International Otological Congress, and of the Section on Otology of the International Congress in London last year. It is manifestly impossble in the time at our disposal to attempt a complete resumé. We shall confine ourselves to the brief consideration of a few of the more important subjects which to us seem deserving of particular emphasis.

(A) In the treatment of chronic affections of the ear a Russian by the name of Maljutin recommends (*Archiv fur Ohrenheilkunde,* Vol. 90, p. 245) the application of heated bog soil. Where this is not obtainable, he has substituted recently simply dry heat. By this method he has treated a long series of different non-suppurative aural conditions with marked benefit. These he divides as follows:

1. Different forms of exudative otitis where ordinary treatment does not remove the exudate in the middle ear.

2. Adhesive catarrh.

3. Different diseases of rheumatic or gouty nature, involving the bony articulations in the ear.

* Read at the Annual Meeting of the Medical Society of the State of New York, April 30, 1914.

4. Otosclerosis in its beginning stage.

5. Syphilitic affections of the sound receptive apparatus.

The method is so simple that it is deserving of careful trial.

(B). *Re-education of the Deaf.*—Where the aural disease is of long duration and has produced an extensive loss of hearing, nothing in recent years offers so much encouragement for relief as the methods for re-education of the hearing brought forward by Maurice, and others in Paris, in the last few years. So far as we know, this has not been seriously taken up on this side of the water. The French literature at present contains many contributions on this subject. Maurice's latest article (*Archives Internationales de Laryngologie, D'Otologie, et del Rhinologie,* September-October, 1913) distinctly states that he does not pretend to cure the cause of the trouble. He insists that both deafness and its cure are relative terms. He does not claim to restore hearing where total deafness exists. Re-education is not the only treatment employed by him. The principle involved is the same as the cultivation of the sense of touch in the blind, or of the eyes in those who use the microscope. Urbantschitch was the first to make use of the principle involved.

The human voice is the simplest method, but its range is limited and it is comparatively inflexible. The sound waves should be regulated for each ear and should be sufficiently amplified to produce a pronounced massage. Maurice has has devised an instrument for this purpose which he calls the kinesiphone. It is an electric apparatus producing vibrations from 100 to 4,000 per second. He claims a fivefold action for the instrument on the ear of the deaf. "It mobilizes in a physiological manner the organ of hearing; it stimulates the auditory receptivity of the deaf; it excites the labyrinth in which the nerve fibres have become sclerosed and atrophied; the sonorous massage produces a vasodilatation which is decidely marked; and the vibration stimulates the ciliated cells in the organ of Corti." We have seen no extensive case records, but the author states that he has been successful by means of the method in affecting a cure in a large series of cases. The length of the treatment will depend upon the duration of the disease, the age of the patient and the cause of the deafness.

(C) *Otosclerosis.*—Since the contribution on the subject by Manasse, a résumé of which was given by the writer at the recent meeting of the American Otological Society, a valuable paper has appeared from the pen of Citelli (*Archives Internationales de Laryngologie, D'Otologie et de Rhinologie,* November-December, 1913) in which he refers to a contribution on the same subject by Denker, read at the Boston meeting of the International Otological Congress. Denker, in that paper, suggested disease of the hypophysis as an important etiologic factor. Citelli believes the disease to be a vascular osteoporosis of the labyrinthine capsule, but does not think that any one condition, but a number, may produce it, including syphilis, osteomalacia, rickets, tuberculosis, different dyscrasias of uric acid origin, and diseases of the endocranial glands, especially of the hypophysis system. He divides the disease, as regards the pathologic condition present, into cases in which there is only an ankylosis of the stapes and which show the characteristic Bezold triad; second, cases with bony fixation of the stapes and other foci of the spongifying process in the labyrinth, associated with an atrophy of the labyrinthine membrane, the so-called mixed cases; and third, an intermediary group where there are multiple, disseminated foci without any ankylosis of the stapes, showing particularly involvement of the cochlea. Based on these grounds, he would abandon the term of "otosclerosis" as a distinct disease, and substitute for it the term "otosclerotic syndrome," or, preferably, "oto-spongifying syndrome."

Treatment of this disease remains altogether unsatisfactory. Citelli claims to have found benefit to the tinnitus in the use of extract of hypophysis in tablet form. Certain German authorities are still advocating phosphorous without any evidence that it is of real benefit. Ortloff, working the ear clinic of Bloch, in Freiburg i. Br., has tested the Roentgen ray, but at the conclusion of his article pronounces it a failure.

We would again urge upon those who are connected with institutions where autopsies are possible, the supreme importance of making necropsy findings in all cases of otosclerosis, especially in young persons taken off by some intercurrent disease.

(D) The presence of the streptoccocus mucosus has been generally regarded as rendering the prognosis peculiarly grave. The importance of early operation in these cases has been recognized particularly at the New York Eye and Ear Infirmary recently, and the subject has been carefully gone into by Zemann (*Archiv fur Ohrenheilkunde,* Vol. 92), who gives the findings in twenty-one cases where this organism was recovered. Based on a study of these cases the author is of the opinion that, first, operations dependent upon an otitis of streptoccocus mucosus origin are relatively frequent. The course of the disease in about 50 per cent of the cases is typical; *i. e.,* a long prodromal stage with slight symptoms and characteristic drum appearance, with a late development of the suppuration, or a complete absence of the same. In most cases there is no fever and sudden development of complications. In other cases the mucosus suppuration presents the clinical picture of an influenza otitis with no particular difference from an ordinary otitis. He agrees with all other observers that mucosus suppurations

are apt to lead to mastoid and endo-cranial operations.

The pathologic findings are typical, many scattered areas later merging, and separated by more or less healthy bone substance. The inflammation is located primarily in the mucous membrane, and the cells of the mastoid process. In his opinion the peri-sinus abscess is the most frequently met with of the endo-cranial complications. The tendency of the mastoid ostitis towards a perforation of the cortex externally is slight, but towards the inner cortex, pronounced. He urges a careful observation of all patients during the prodromal symptoms, and insists that a bacteriological examination of the pus, because of the possible presence of the streptococcus mucosus is always important. The examination should be a careful one as there are certain peculiarities in the organism which may lead to error. Every elevation of temperature after the operation, excluding other causes, points to an area of suppuration elsewhere, and demands further operation. Primary suture of the post-auricular wound in contra-indicated in his judgment. The duration of the healing is very long. In the twenty-one cases reported by him it averaged sixty-two days. He feels that the prognosis can be pronounced favorable when it is possible at an early date to eliminate altogether the foci of suppuration. This would agree with the recent views of reporters in this country. His contribution is of decided merit and particularly calls attention to the importance of careful bacteriological examinations of the pus in every case of ear discharge.

(E) *Vaccine in the Treatment of Suppurative Affections of the Ear.*—Perhaps no subject is interesting aurists more today than the employment of vaccines for the cure of suppuration of the middle ear. The work of Hiss and Dwyer with the Hiss leucocyte extract in endo-cranial complications of otogenous origin, has passed beyond the experimental stage. The reported number of cures has now reached not an inconsiderable total. The situation in regard to the vaccine therapy is quite different and much remains to be done before a final verdict can be passed. A number of papers have appeared since the notable contribution by Nagle before the American Laryngological, Rhinological and Otological Society in Washington four years ago. The results secured by her thirty-nine cures out of forty cases of chronic suppuration, have so far as we know, never been equalled. All writers on the subject have insisted upon the supreme importance of a proper technique in recovering the organism, and of its proper and careful growth. The most recent contribution upon the subject is by Haskin, before the Section on Otology, of the New York Academy of Medicine this winter. Haskin insists, just as Nagle did, on the importance of allowing a considerable length of time, two years or more, go by before a cure can be definitely pronounced. This has not elapsed in his cases. In thirty-three cases of o. m. p. c. under treatment by him he has for the time being succeeded in stopping the discharge in twenty-five.

(F) *Indications for Operation in Labyrinthine Disease.*—No more perplexing or important question has presented itself to aural surgeons in recent years than when to operate in suppurative affections of the labyrinth. The subject is so comparatively new and our experience so limited, that all operators have had to feel their way. Many have hesitated to follow the indications set forth by the so-called "Vienna School," that is, by the staff of the Urbantschitch Clinic. An authoritative statement, then, from the first assistant of Professor Alexander, of the Vienna Polyclinic, based on the total number (twenty-seven) of cases operated upon in that hospital in the last six years, is peculiarly welcome at the present time. The indications as set forth by Leidler, are so clear and on the whole so conservative, that many of us will be prepared to agree with him. These are as follows:

First.—Every diseased labyrinth dependent upon a purulent otitis whether acute or chronic, combined with a labyrinthogenous intercranial complication, must be operated upon at once. Of these complications, the lightest degree is represented by a persistent headache on the side of the affected ear.

Second.—Every labyrinth which shows involvement as a result of an acute or chronic otitis with symptoms of acute diffuse labyrinth suppuration, advanced nystagmus of the third degree toward the healthy side, and lack of response to the turning test must at once be operated upon in case the temperature is more than 38 c., or the symptoms do not abate within four days.

Third.—A labyrinth which, as the result of an acute or chronic otitis is completely destroyed functionally, and does not comply with the indications just given, must at once be operated upon, in connection with the radical opening of the antrum, in case a spot in the bony capsule shows a pathologic opening into the peri or endolymphatic space (fistula, cholesteatoma, sequestra, tumor, etc.), or where there are persistent symptoms of irritation of the labyrinth, dizziness, nystagmus, vomiting.

These indications for operation are based entirely upon clinical experience and have no relation to pathologic and anatomic questions, especially that of the differential diagnosis between acute purulent and serous disease of the labyrinth. This latter question is met in the second indication. Leidler states that general diffuse labyrinthitis must be at once operated upon if the temperature rises above 38, or the symptoms persist in the same degree more than four days. It is his experience that a serous labyrinthitis never shows a higher temperature than 38, nor

symptoms which do not begin to abate in intensity within four days. The twenty-seven cases are reported in detail. In most of the cases a typical labyrinthine operation was performed; *i. e.,* after the radical operation, the dura in the middle and posterior fossæ was freely opened and the labyrinth cleaned out. In all of the twenty-seven cases the labyrinthine disease depended upon a chronic otitis. In fifteen cases cholesteatoma was present.

Analyzing the results according to the three groups of indications, to the first group—operation because of a purulent otitis combined with labyrinthogenous and intercranial complication—belong thirteen cases. Four cases were operated upon according to the second indication, the temperature being more than 38, or the symptoms not abating within four days. In the third group operated upon because with an acute or chronic otitis there was found a labyrinth completely destroyed, but showing a pathological opening, belong twelve cases. There were, then, of the twenty-seven cases, fifteen complicated by intercranial disease. These represent four labyrinthogenous circumscribed purulent meningitis, seven cases of labyrinthogenous diffuse purulent meningitis, one case of serous meningitis and one of cerebral abscess. In sixteen cases there was a fistula, for the most part in the horizontal canal. In five cases there was more or less extended sequestrum in the labyrinth. Six were subacute, ten acute, nine chronic, that is, a latent diffuse purulent labyrinthitis. Of the twenty-seven cases, nineteen were cured, eight died, a percentage of 29.6 per cent of deaths and 70.4 per cent cures. In estimating the prognosis, in Leidler's opinion, two cases are to be excluded where meningitis had already developed. The twenty-five others represent 24 per cent of fatalities and 76 per cent of cures. Such remarkably good results warrant careful consideration of the indications upon which the operations were based. It will be noted that the first indication is virtually to operate upon the slightest appearance of meningitis, but not before. The second indication is also to be regarded a conservative one. It is, in effect, that serous labyrinthitis never is to be operated upon. Where the temperature is more than 38, or symptoms do not improve within four days, the labyrinthitis present is of a purulent nature, and calls for operation. His last indication is equally conservative, where he advises, in connection with the radical operation upon the mastoid, the opening of the dead labyrinth only in case a pathologic opening exists or is found, or there are symptoms of irritation still persisting. (*Archiv fur Ohrenheilkunde,* Vol. 93.)

(G) *Brain Abscess.*—A number of articles have appeared upon the subject of brain abscess, but a recent paper by Sharpe read before the Eastern Section of the American Laryngological, Phinological and Otological Society, is so clear and instructive, that it is deserving of comment. The author, after reporting several cases, dwells, as regards the diagnosis of brain abscess, upon "first, the importance of the history, particularly of a previous otitis media; second, the periodicity of its symptoms and signs—there being intervals of complete relief and comfort; third, the frequent absence of signs of endo-cranial pressure in the fundus of the eye, when the abscess is situated above the tentorium; fourth, the great frequency of abscess in either temporo-sphenoidal lobe, and the value of the several aids for a definite localization of the abscess in them, as well as in the frontal and cerebellar lobes."

His views, in regard to the treatment, are particularly timely. "Operation for brain abscess is usually an exploratory procedure. Puncturing the dura 'blindly' with a needle in search of the abscess is a dangerous and unsurgical procedure. The danger of not only a meningitis, but also of medullary edema is very great in trying to locate the abscess with the needle through a small opening and especially through an infected area, such as the mastoid." He advocates "the advisability of a subtemporal decompression in abscesses situated above the tentorium both to lessen the endo-cranial pressure and thereby to avoid impairment of vision and the danger of medullary edema while waiting for the abscess to localize itself and also to lessen the danger of a meningitis. In abscess of the temporo-sphenoidal lobe, the decompression allows a careful exploration of the entire lobe in search of the abscess." Finally, he feels that "in abscess of the cerebellum the great danger of medullary edema should be avoided by a large opening, together, if the tension is very high, with the removal of the posterior half of the foramen magnum."

All these various observations warn against the danger of a blind hunting for the abscess with the needle, and are particularly to be commended. It would also seem from his cases that the operation for decompression while waiting for the abscess to localize is worthy of favorable comment.

(H) Not less important than such papers as those adding to our exact knowledge in regard to brain abscess, is the work that is being done in regard to the diagnosis and treatment of otitic meningitis. While probably representing no advance in our therapeutic agents, the scientific work of Kopetzky and Haines on this subject cannot be too highly commended. In the same connection the contribution of Day, made at the recent meeting of the American Laryngological, Rhinological and Otological Society, on the "Surgical Treatment of Meningitis by the Haines' Method," warrants equal approval. Apart from this work, the discussion on this subject before the 1912 meeting of the German Otological Society was of a highly scientific order, and the predominant note was one of distinct encour-

agement as regards the curability of this dreaded complication. A number of papers were presented, the first of which was by Preysing. Preysing rightly states that the proper approach to the discussion of the curability of meningitis is not "is meningitis curable," but "what forms of meningitic disease are curable, and what different terms have we for these different forms." In his opinion the answer is to be found in an inquiry into the channels by which the infection has proceeded. Of the various divisions of meningitis, that of Alexander, according to the pathologic condition present, is the one that he recommends:

(a) Meningitis with uncomplicated acute purulent otitis.

(b) Meningitis with complicated chronic purulent otitis.

(c) Meningitis with otitic brain abscess.

(d) Meningitis with otitic thrombosis and extra-dural abscess.

(e) Meningitis with purulent labyrinthitis.

Bacteriologically, streptoccocus infection gives more grave prognosis and with staphlococcus albus the prognosis is better. He agrees with Lemoryez that the channel of infection is usually through the labyrinth. Heine's statistics of sixty-three cases of meningitis where acute otitis was as frequent as chronic otitis as the precedent disease, is contrary to the statistics of most observers. Heymann's statistics showed in twelve cases eleven followed chronic otitis. Preysing states succinctly his indications for treatment:

"1. In meningitis following acute otitis, lumbar puncture, or according to the circumstances lumbar drainage. No opening of the dura.

2. Meningitis following chronic otitis without labyrinthine complications, or with labyrinthine irritation symptoms, perform the radical operation and most carefully remove the channel of infection. If everywhere a healthy brain is found, treatment is to be as for meningitis following acute cases, which are treated by lumbar drainage.

3. In chronic cases where an extra-dural abscess is found and the symptoms do not disappear after emptying it, if the dura in the vicinity appears necrotic, or in a wider course does not granulate, it is warrantable to incise the dura and seek for subdural necrosis.

4. In chronic otitis existing with clear labyrinthine symptoms, the radical operation is to be made, and where there is a fistula, resection of the inner ear is to be carried out. If dural changes are then discovered, according to Wittmaack and Stacke, the dura and the posterior fossa in the direction of the internal auditory canal are to be opened as far back as the sinus and drained. Whether an entirely otherwise healthy dura is to be opened, or further operation will be left to depend upon the result of the operation upon the temporal bone, must be decided by the operator.

5. If one finds in the radical operation for chronic otitis with meningeal symptoms, a distinct dural fistula with drainage of pus, a thorough broad opening in the temporal bone is to be advised, and the diseased dura resected and drained."

Preysing feels that from the cases in the recent literature, a distinct optimism is warrantable in regard to the curability. At the same time, we have no right to be too optimistic. Based on the large number of reported cases, lumbar puncture, especially for acutely advanced and diffuse meningitis, is to be regarded as of distinct value, but in the meningitis of an abscess-like type, or where it is encapsulated, and advancing slowly, so long as there has been no operation, it is questionable whether lumbar puncture will not propagate the disease. Urffenorde from the Gottinger Clinic agrees with Preysing that the genesis of meningitis is usually labyrinthine. In thirty-nine cases treated in the Gottinger Clinic, twenty-two, or 56 per cent, received the infection through the labyrinth. Prognosis in cases of labyrinthine suppuration with meningitis is unfavorable, if no operation is performed. Where operation is performed, the prognosis is encouraging; in fifteen cases six recoveries took place through operation.

His treatment is the same as that of Preysing, the radical removal of the focus of the disease by operation upon the middle ear, and then repeated lumbar puncture. He has collected fifty cases in the literature of cured purulent leptomeningitis. This does not represent in his judgment by any means all of the cases. He also is quite optimistic in regard to the prognosis and believes that the few cases of recovery point to further success in the future.

Brieger, who presented the third paper, went into the subject most carefully. He dwells particularly upon the necessity of lumbar puncture to establish an accurate diagnosis, and when not a true meningitis is present. He does not believe, however, that where changes in the spinal fluid have taken place it can be any longer said that only a prodromal meningitis exists and so feels that it is not justifiable to say that cases cured with pus found in the spinal fluid, were not true cases of meningitis. His statistics show sixty-five cases of otogenous meningitis with six cures. Cerebro-spinal fluid showed purulent meningitis in five cases, bacteria were present in four, and in only one was there no characteristic organism. In this case, which was a meningitis of acute origin, there was only a moderate degree of perturbed lumbar fluid, with a fair amount of multineuclear leucocytes.

Brieger studied these cases by inoculation into dogs and monkeys, but is not yet able to satisfy himself in regard to their genesis. His experiments showed, however, a possibility of a healing

of experimental meningitis, and he feels that our clinical experience in men are confirmed to a large degree by the experimentation in animals. Spontaneous healing took place four times in fourteen cases of dogs inoculated with the organism producing the meningitis, and not treated, and once in three monkeys where meningitis had been experimentally produced. His experience is in agreement with Preysing and Urffenorde, that the present stage of our knowledge warrants only the cleaning out of the original focus of the disease and then repeated lumbar puncture. None of the authors are enthusiastic over drainage by incision into the dura.

Finally, we desire to speak briefly of the so-called symptom-complex recently brought forward by Barany. Barany has seen in the last few years more than forty cases with symptoms of first, dizziness; second, tinnitus; third, difficulty in hearing, suggestive of disease of the inner ear, often false notes on diseased side, beginning directly back of the ear and radiating to the occiput and also forward; fifth, tenderness directly behind the mastoid over the exit of the emissary vein; sixth, pointing deviation outward of the hand on the diseased side. Barany regards these symptoms characteristic of increased pressure in the cysterna pontus lateralis, which is the cysterna of the cerebello pontine angle.

The heightened pressure is due in the first place to adhesions of the arachnoid with the pia on the edges of the cysterna; second, to the lateral choroid plexus which has its origin inside the cysterna, secreting in a fluid in a normal or increased manner. Inside the cysterna lies the facialis, cochlealis and the vestibularis. While the facialis probably does not suffer because of its stronger resisting power, the cochlealis and vestibularis become diseased. The interference with the drainage of the fluid, even whether the secretion is normal or increased, must lead to increased pressure. Inside the cysterna is found the center of the cerebellar cortex for the movement of the wrist inward. Pressure would paralyze this and there would be a deviation of the joint outward. The causes of this heightened pressure are to be found, according to Barany, first in middle ear suppuration; second, in migrain; third, in syphilis; fourth, in rheumatism. In certain cases he has been able to relieve the condition by the use of atropin internally, which reduces the amount of the secretion. The result, however, has not been lasting. In place of a reduction of the secretion, he has, therefore, sought to increase it to such an extent that the adhesions would be broken. This took place in one case where the patient was in the habit of using alcohol. He recommends particularly lumbar puncture which has given excellent results, although recurrences can take place. In three cases after the lumbar puncture, he freed the dura in the posterior fossa from the mastoid process. In one case it was necessary to incise the dura in order to get a cure. The pointing test referred to has been recently described by Kerrison in a paper having particular reference to cerebellar abscess, as follows:

"*Method of Applying Test.*—If we irrigate with cold water, let us say the right ear, there is developed a well-marked rotary nystagmus to the left, and the individual, attempting to stand, tends to fall to the right. Now, quickly; *i. e.,* while the nystagmus is still active, test his pointing accuracy in the vertical plane by the method already described. It will be found that, having located by touch the examiner's finger with his own, his hand in being lowered will swerve somewhat from the vertical plane to the right, and again in being elevated it will deviate further to the right. His hand, therefore, in being depressed and elevated describes a V falling to the right of the object he is trying to reach. Stating this reaction in the form of a rule, we may say that the pointing deviation resulting from vestibular irritation is invariably in the direction opposite to that of the induced nystagmus. It, therefore, corresponds with the direction of the falling tendency; *i. e.,* the direction in which, if he attempted to stand, he would demonstrate a tendency to fall.

The loss of pointing accuracy characteristic of a cerebellar lesion may be demonstrated in the following way: The patient, being blindfolded, the pointing accuracy of the two hands is separately tested by the method already described. In a case in which the symptoms are present it will be found that the arm corresponding to the cerebellar lesion will regularly deviate outward, while the opposite hand (*i. e.,* that corresponding to the sound side) will continue to point with normal accuracy. Thus in a lesion of the right cerebellar hemisphere, the right hand deviates outward, *i. e.,* to the right; with a left cerebellar lesion the left arm deviates to the left, the arm corresponding to the sound cerebellar hemisphere maintaining in either case the normal pointing accuracy. This is the first part of the test. We must now corroborate the result thus obtained by testing the reaction to vestibular irritation.

Supposing, for example that in a case of suspected cerebellar lesion we have tested the pointing accuracy of both arms and found that the right arm shows unmistakable outward deviation (*i. e.,* to the right) while the left arm points accurately—this so far as it goes, would indicate disease of the right cerebellum. We must now test the reaction of the right arm to vestibular irritation. This is done by syringing the left ear (*i. e.,* the ear of opposite side to the supposed lesion) with cold water. This is followed by a rotary nystagmus to the right, during which in a normal individual both hands in pointing would deviate to the left. If now in the presence of an induced nystagmus to the right the

right arm does not deviate as normally to the left, but continues as before to deviate outward (*i. e.,* to the right), while the left hand shows the normal reaction to the left, we have a clear and positive indication of a lesion involving the right hemisphere of the cerebellum."

Discussion.

Dr. Edward B. Dench, New York City.—It gives me great pleasure to open the discussion on Doctor Harris' paper, and, in the first place, I wish to emphasize the gratitude which this Society should feel toward a man who is willing to give in such a concise and clear manner a resumé of important advances which have been made in any subject during a year. Special literature is so extensive at present, that comparatively few men are able to devote the time necessary to keep thoroughly abreast of the recent advances. A paper, such as the one presented by Doctor Harris, is, therefore, of great value.

Regarding the re-education of the deaf by means of mechanical devices—I have looked into this subject rather thoroughly during the last year. The apparatus advised by Maurice is similar in many respects, I judge, to the Zünd-Bourguet apparatus. The apparatus so highly commended by Marage, and depending upon re-education of the deaf ear by means of various musical notes produced by a siren, is also along this particular line of thought. I, personally, have had some experience with the Zünd-Bourguet apparatus, and have not found it to be of the least benefit. I have seen some of the records kept by those who were enthusiastic over the particular instrument devised by Marage, but have not felt that the results were convincing. I do believe thoroughly in the possibility of education or re-education of the deaf ear or of the hard-of-hearing ear, but I do not believe that any special form of apparatus is necessary. It has also seemed to me that the human voice was the best instrument for the re-education of these cases, and I feel fairly certain that if these patients would spend the same amount of time in exercising their defective ears, using the human voice as the instrument—that the results would be equally satisfactory. One has only to observe the marvellous results obtained in young children with very defective hearing, where the oral method of instruction is used, as, for instance, in the Wright Oral School—to be convinced of the value of this method. In my opinion, however, no mechanical device can ever take the place of the human voice for such a purpose. Whether instruments of this character are injurious or not, remains to be seen. I believe, however, that a too violent or too prolonged stimulation of the ear by any sound, will in the end do damage. If mechanical devices, of this kind, are to be employed therefor, a certain amount of caution must be exercised in their employment.

Regarding the work in oto-sclerosis, we all regret that more advance has not been made in the treatment of this condition. I cannot allow the subject to pass, however, without pointing out the fact that in many cases, where the examiner is inclined to make a diagnosis of oto-sclerosis upon the first examination, the condition within the tympanum ultimately proves to be of a different character. In other words, the cases of true oto-sclerosis are comparatively rare. Too much stress, therefore, cannot be laid upon the necessity of being absolutely convinced that the disease is oto-sclerosis before an unfavorable prognosis is given. It has been my experience to see a comparatively large number of cases which, at first, impressed me as cases of true oto-sclerosis, and in which I was inclined to give an absolutely unfavorable prognosis. Many of these cases have improved considerably under local treatment. Had these cases been neglected, the tympanic lesion would certainly have advanced, and the hearing would have become much more impaired.

In this connection, I cannot but emphasize the fact, that, in a certain percentage of, apparently, hopeless cases, the much-discredited operation of ossiculectomy, has been advantageous, and I have cases under observation at the present time, where the ear operated upon many years ago provides the patient with all the hearing that he possesses. Operative interference, therefore, in a certain number of cases of this character, is of undoubted benefit.

I have nothing to add regarding the remarks made about the streptococcus mucosus infection, except to state that when these cases are seen early and are freely drained, that they may recover without any mastoid involvement. In a series of thirteen cases of streptococcus capsulatus infection, only three came to mastoid operation. The chief danger of streptococcus capsulatus infection, is the insidious manner in which the symptoms develop, and the presence of this germ should make the surgeon more than usually watchful. The value of the X-ray in ascertaining the actual condition of the mastoid, is of great assistance, and in determining the necessity for operation, in cases where the symptoms are obscure. The systematic radiography of every case of middle ear inflammation with even the slightest evidence of mastoid involvement can not be too strongly advised. To Dr. Geo. S. Dixon, of New York Eye and Ear Infirmary belongs this credit of perfecting this work.

Regarding the vaccine treatment of middle ear suppuration, I have had no experience. I am familar with the article written by Doctor Nagle, as well as with some of the work done by Doctor Haskins. It must be remembered that a certain number of cases of chronic middle ear suppuration are cured by attention to cleanliness alone, and I believe that the actual value of vaccine

therapy, in this particular condition, has yet to be demonstrated.

I have listened with great interest to the remarks upon the indications for operation in labyrinthine disease, and would say that my own experience in a general way agrees with the rules laid down in Doctor Harris' paper. I believe, naturally, that where there are any symptoms of intracranial involvement present in a case where the labyrinth has been invaded—the complete exenteration of the labyrinth is the proper procedure. I am certain, however, in some cases we may have all the symptoms of a dead labyrinth, such as loss of function and loss of caloric reaction, due simply to a perilabyrinthine inflammation. I have seen at least one case of this character clear up completely after a mastoid operation, without any operative intereference upon the labyrinth. I also believe that where we have a dead labyrinth with fistula, and in which there are no evidences of intracranial involvement, other than headache, that the extensive operation of Neumann is not called for in every instance, and that simple drainage of the labyrinth, through the horizontal canal above and the cochlea below, is all that is necessary. In the presence of intracranial symptoms, however, I believe the Neumann procedure to be the ideal operation.

The remarks on brain abscess I heartily endorse, especially the advisability of doing a decompression operation, not only for the relief of the tension, but also to favor the so-called pointing of the abscess. The performance of the operation in two stages, that is, first doing a decompression operation, and later opening the abscess, was suggested by me in 1906, in a paper read before the American Otological Society. The decompression operation and the two-stage operation for brain abscess is naturally confined to those cases in which no direct route of infection can be found leading from the middle ear to the abscess cavity. If the route of infection can be found, a better result will be attained by opening the abscess along the line of infection, for here Nature has effected what we desire, in part, at least, to do by our two-stage operation, namely, has caused an amalgamation between the meninges, so that the abscess cavity can be entered safely, without danger of meningeal infection. In all other cases, however, where the avenue of infection cannot be traced, I am heartily in favor of first doing a decompression operation through a sterile field, and later, exploring the brain substance for the abscess, in the hope that pus will find its way to the surface along the line of least resistance.

I have very little to add to the remarks upon the treatment of otitic meningitis, so ably presented by the writer of the paper. I feel greatly flattered to find that these remarks contain so many suggestions already made by me, in a paper read before the International Otological Congress, held in Budapest, in 1909. In this particular paper, I drew attention to the value of lumbar puncture as a therapeutic measure, also, the necessity of clearing out the primary focus of infection, and of free drainage of the subdural space. I am glad that the independent work of Preysing emphasized the points suggested in my article, written in 1909.

Decompression in meningitis certainly prolongs life, as I have had an opportunity of demonstrating in two cases which have come under observation during the last year. Whether this operation will, except in very rare instances, effect a cure, remains to be seen.

Serum therapy in meningitis has certainly been of absolutely no value in my hands.

DR. HARRIS, in closing, said he regretted not to be able to agree with Dr. Dench in his opinion of the value of the human voice in re-education of the hearing. He was supported in this by a recent visit to the Royal Deaf and Dumb Institute in Vienna where Urbantschitsch methods had been carefully carried out, but had proven a complete failure.

CLINICAL IRREGULARITIES OF THE HEART BEAT.*

By ALEXANDER LAMBERT, M.D.,
NEW YORK CITY.

A YEAR ago, at Rochester, in the discussion of myocarditis and its symptoms, the irregularities in the cardiac rhythm were not emphasized as an evidence of the myocardial degenerations. The general opinion at that meeting seemed to be that the myocardial diseases were recognized antemortem with difficulty and that they seemed to be morbid processes which, although of serious import to the patient, could only be accurately recognized by the pathologist. It seems, therefore, worth while to make an attempt to present for discussion the irregularities of the cardiac rhythm and to endeavor to see if the knowledge we possess of the myocardial degenerations can be correlated with these irregularities.

Irregularities of the rhythm of the heart beat have long been recognized and have been accepted as evidences of some form of disease in the heart. When these irregularities are present, are we, however, willing to accept the diagnosis of certain forms of myocardial degeneration being also present? For many years it has been recognized that irregularity of the heart beat most frequently accompanies mitral stenosis and mitral regurgitation. These form of endocarditis are known to exist in hearts in which the rheumatic inflammation has involved not only the valves but the auriculoventricular muscular

* Read at the Annual Meeting of the Medical Society of the State of New York, April 29, 1914.

ring from which these valves are supported, and it is an accepted fact that when we hear these murmurs in hearts beating irregularly, the real morbid process which makes the prognosis of the heart disease serious is not that these murmurs and valvular lesions are present, but that there has been and still is present a diseased condition of the myocardial muscle which surrounds the valves or composes the other portions of the walls of the heart. Murmurs are evidences of diseased conditions which have been present or are present in the valves, but as long as the muscle of the heart itself remains capable, they are rarely the crucial factor in cardiac disease. They are often negligible quantities in the morbid processes which are going on and in the prognosis. The most common form of the cardiac irregularities is that produced by the so-called auricular fibrillation. In a personal series of 125 hearts showing various form of cardiac disease in Bellevue Hospital, sphygmographic tracings showed that 46 per cent gave evidence of some form of irregular cardiac rhythm. Of these irregularities, 43 per cent were auricular fibrillation, 26 per cent showed some form of heart block, either partial or complete, 12 per cent showed extra systoles, and 19 per cent showed various forms of irregularities, such as sinus arrhythmia, tachycardia and pulsus alternans.

To understand these irregularities and their action, we must remember the physiological action of the heart and the sequence of its contraction in the normal rhythm. The contraction of the heart begins in the tissue around the superior vena cava, and passes down over the auricle and thence down through the muscular bundle of His connecting the auricle and the ventricle and from thence down into the ventricle. The myogenic or muscular theory of cardiac action is that the heart muscle possesses the power of contraction and of conducting an impulse from one fiber to the other and down through the His bundle from one chamber to the other; and that this contraction is due to the inherent contractile power of the muscle itself, without extraneous nervous stimulation, but which seems to arise at a node of nervous tissue, the sino-auricular node or so-called pacemaker of the heart, situated close to the superior vena cava. Passing down the remains of the original fœtal cardiac tube, it spreads out over the later developed muscles which have been formed and added on to this original tube by its bending and infolding to form the complete heart. In the heart of the eel, for example, where sinus, auricle and ventricle are separated, the contractions can be seen to follow one another down the length of the chambers. In the mammalian heart the sinus tissue is blended so intimately with the auricle that it cannot be distinguished from it in its time of contraction or in its sequence. The other theory, the neurogenic or nervous theory, which at present is the discarded one, but by no means disproved, holds that the nerves of the mammalian heart are so intimately connected with the muscles that they cannot be separted, that it cannot be shown that the muscle acts separately from the nerves, and that the heart is not an exception to the other organs of the body and that it responds to the nervous influences which excite, retard or control it as it occurs in the other viscera in the body. Hence, the contraction of the heart, its acceleration, retardation and each single contraction is due to a nervous impulse acting on the cardiac muscle. This theory points to the fact that a beat of the heart starts in its pacemaker, or nervous node, at the sino-auricular junction, and passing down through the bundle of His, which contains nerves as well as muscle, spreads over through the walls of the ventricles either by direct nervous conduction or by some nervously excited reflex.

It is of no consequence to us which theory shall prove to be the truth provided that we remember the fact that the contracting impulse starts and goes in a smooth, uninterrupted wave from a definite position in the upper portion of the sino-auricular junction, passing down from auricle to ventricle, and spreads from base to apex of the heart. With this contracting wave then passing definitely from one point to another, it is possible to conceive that pathological lesions injuring or destroying either the muscles or the nerves lying in these tracts can produce irregularity of contraction, irregular forms of cardiac beats and cardiac rhythm. Let us consider then, before we take up each individual form of cardiac irregularity, what are the various forms of myocarditis and how do they affect the muscle of the heart. The best conception and description of various forms of myocardial degeneration are those which have been published in the writings of Harlow Brooks of this city. They give a logical sequence to events and are based on both clinical and pathological knowledge collected in a wide experience both at the bedside and at the post-mortem table.

The mildest form of myocardial degeneration is acute albuminous myocarditis which follows all forms of infections and is usually the beginning degeneration in any one of them. This may go on in the intense infections, such as typhoid fever, diphtheria, or severe pyogenic sepsis, or in prolonged intoxications such as chronic alcoholism, into fatty degeneration of the muscle. This is a degeneration of the muscle itself and is not the condition of the muscle seen in those who have acquired large masses of adipose tissue from increased appetites and diminished exertions in which the fat is deposited by infiltration between the muscle fibres themselves and not in the muscle cells. This fatty degeneration may in itself be of such intensity as to cause death or it may go on to recovery and the recovery be complete, or it may go further on into a chronic

degeneration which produces brown atrophy of the muscle and the absorption and degeneration of the muscle fiber itself and give the fibroid replacement of the so-called cardiac fibrosis.

In diphtheria, for instance, the fatty degeneration is not always a generally disseminated process, but is often patchy and of great intensity at one portion and of very minor intensity at another portion of the same heart. Fatal injury to the cardiac muscle may be produced by this acute condition or it may go on to recovery or to chronic fibroid replacement. There can be left behind, therefore, patchy areas of degenerated fibrosis or patchy areas of permanent injury. Furthermore, long persisting intoxications, such as tuberculosis, cachexia of carcinoma, chronic poisoning by alcoholism fibroid tumors of the uterus, and those changes which bring about early senility, produce of themselves not the acute degeneration of the heart but produce the chronic brown atrophy and the fibrosis. Arteriosclerosis, in itself a process produced by the causes of early senility, in its turn produces in the heart, through the degeneration of the coronary arteries, the fibroid replacement. Arteriosclerosis is not a universally, evenly-spread process of degeneration of capillaries and smaller vessels alike, but in itself is one of localized degenerative process more intense in one portion and less intense in others of any given viscus; therefore, again, do we find that the arteriosclerotic conditions produce patchy degenerated areas in the cardiac muscle as elsewhere in the body.

The two main diseases which cause destructive lesions in the heart are rheumatism and syphilis. The rheumatic infection is one which causes in the beginning an albuminous degeneration and one which, like all severe infections may produce an intense fatty degeneration, but there are also nodules scattered throughout the cardiac muscles and especially surrounding the area of the auriculoventricular valves which are known as rheumatic nodules formed by peculiar-shaped, large cell deposits differing from the surrounding tissues. Hence, again, we have a disease of intense sepsis most prone to attack cardiac tissues, leaving its scars behind in patchy areas, for the rheumatic nodule heals like all inflammatory tissues with an increased connective tissue growth.

Syphilis has its own peculiar inflammation and is made up of three definite processes—the degeneration of the arteries, gummatous deposits and a primary syphilitic inflammatory increase in the connective tissue between the muscle cells. The syphilitic endarteritis does not differ from any other form in its injuries or in its results. It produces the same lack of nourishment, the same degeneration of the capillaries and the same degenerative fibroid processes in the heart. Again, is it localized more in some areas than in others. The forms of minute gumma in the heart produce areas of destruction and areas which can heal and leave behind their scars. The peculiar connective tissue inflammation which I have spoken of is not an evenly disseminated condition but varies in its intensity from place to place. Again is the disease one of patchy injury to the heart. These processes in syphilis or in rheumatism can and do heal and the activity of the process can cease and become quiescent, but when the inflammatory products are absorbed, there is left behind the fibroid replacement of muscle tissue, because there is left behind the cicatricial tissue of former inflammatory processes. The rheumatic inflammations are more prone to strike the mitral valve and the muscles surrounding it in the upper portion of the ventricle and the lower portion of the auricle. The bundle of His lies behind the mitral valve, between it and one of the cusps of the aortic valves, and, therefore, any severe inflammation striking at this point may extend either way from aortic or from mitral into the bundle of His and injure either nerves or muscle which pass down through this tract. The auriculoventricular connecting link is, therefore, prone to be injured by either rheumatism or syphilis.

Syphilis strikes particularly at aorta and aortic valves so much so that the vast majority of aortic lesions are surely syphilitic in origin. We see, therefore, that the diseases which injure the valves of the heart injure also the myocardium, and if the injury ceases, the valves heal as torn and scarred curtains more or less able or unable to perform their functions, but as long as the muscles of the heart are capable by increased work to produce the extra force required by a damaged valve, the heart can go on and be an effective pump. When, however, the wall of the heart is diseased and ceases to functionate, it is as useless as a dried and crumbling rubber bulb of a Davidson syringe.

With this conception of myocarditis, can we correlate it with the clinical irregularities of the heart beat?

Auricular fibrillation is that form of irregularity of the heart most frequently seen which has long been recognized as producing the irregularly irregular force, frequency and volume of the pulse. It is that which produces the tumultuous delirium of the contracting heart. The auricle does not contract as a whole but seems to rest immoble with a succession of fibrillary contractions in its muscles and when a sufficient mass contracts to send an impulse through to the ventricle, the ventricle follows with contraction. The usual pulse rate of this irregularity varies from 90 to 140. This condition is rare in the early years of life before 18, but becomes more and more common in the later years of life. Lewis states it is present in from 60 per cent to 70 per cent of all cases of cardiac failure which are brought in to a general hospital. The rheumatic group of patients in the early half

of life show the greatest number of auricular fibrillation, the non-rheumatic group showing the greatest number in the last half of life. In the rheumatic group those having mitral stenosis are particularly prone to this form of breakdown, because of the increasing and incessant overdistension of the auricular tissue. Syphilitic degeneration is not uncommon as a cause of this irregularity, in my own experience it being about half as frequent as the rheumatism. The pure arteriosclerotic conditions of old age and intense alcoholism as apparent causes of the cardiac breakdown are about half as frequent as syphilis. This form of irregularity is found, therefore, as a result of various processes. It is produced as a resultant of the forces of insufficiency in the valular mechanism, plus an inadequacy of the muscular tissue, to stand the strains put upon it.

Premature contractions or extra systoles of the heart are those which occur before the anticipated time of contraction and hence disturb the even rhythm of the heart's beats. What the causation of these premature beats is is at present unknown, but they seem to arise from irregular stimuli in some area outside of the normal place of origin of the cardiac beat. These impulses produce the same result as the normal impulses, but they are abnormal in the rapidity with which the impulse is formed, the explosion taking place just after the regular beat of the heart. They also lack successive continuity. The formation and explosion of this impulse thus take place too rapidly and with irregular frequency. This abrupt origin of the premature beat may arise in the ventricle or in the auricle or in the tissue between the two; usually it arises either in the ventricle or in the auricle. If it arises in the auricle it is followed regularly by ventricular contraction. Coming quicker than the regular beat, it upsets the rhythm of the heart so that the time for the sum total of two contractions of the heart is not equal; there is no so-called compensatory pause as in the ventricular contraction. This compensatory pause, characteristic of the premature ventricular contraction, is caused when the contraction arising in the ventricle produces a contraction as felt in the pulse, and with the rhythmically even contracting auricle the auricular beat which follows meets the quiescent ventricle which is refactory because it has just contracted and used up its energy, so that the pause which follows the ventricular contraction is long; it is waiting for another regular auricular contraction to stimulate it, and calculating the beats of the heart in pairs, the rhythm of the beat remains even because the period of the premature disturbance, plus the compensatory pause, is exactly equivalent to the length of two complete cycles of the normal rhythm. The premature beats, according to Lewis, have been recorded in patients from a few weeks old to old age, but during the first decade they are extremely rare. They most commonly occur, according to this same author, between fifty and seventy years of age. They, therefore, are usually an occurrence in the later years of life and most often occur with the forms of myocardial degeneration that are commonest in these years; hence they most frequently occur in the arteriosclerotic changes of early or normal senility. They show the presence of the fibroid replacement of arteriosclerosis. This is their most frequent accompaniment, and they occur also in acute intoxications such as from digitalis and its group of drugs, and following tobacco poisoning. they are also accompaniments for some unknown reason of reflex disturbances, of disordered digestion, and occur in dying hearts.

In hearts beating over 100 these premature contractions do not often occur, and it is said to be very rare in pulse rates of over 120. In fever and during severe exercise these premature contractions may disappear even in hearts in which they are ordinarily present. Following the cessation of these conditions, however, the premature contractions appear more frequently than ever. These extra systoles are the cause of one form of palpitation of the heart and the ventricular form with its premature beat and the compensatory pause following it, together with its forceful beat just succeeding the compensatory pause is often a source of noticeable distress to the patient.

Heart block, so-called, is a condition in which the impulse of the auricle is delayed or fails to pass through to stimulate the contraction of the ventricle. The causation of it is usually some injury in the bundle of His, although there are cases in which the muscular fiber of this bundle has not been diseased and yet the symptoms of heart block are present. This would make one believe that lesions in the nerves could perhaps cause the condition as well as lesions in the muscle fiber *per se*. Of the acute infections rheumatism has the first place as the causation of this condition Among others are those infections producing the more intense muscular degenerations such as diphtheria, influenza, typhoid and pneumonia. In chronic forms of heart block the great majority are rheumatic or syphilitic, and in one-fourth of those cases in which the post-mortem examination has been reported the lesion has been gummatous.

The condition of sinus arrhythmia is that condition of periodic irregularity in the length of the cardiac pulsation and is one in which the whole heart is evenly involved. It is the slowing and quickening of the heart that is heard normally in youth following deep inspiration, and is the form which varies at this age with a varying respiration. It occurs also following intoxications of tobacco and following acute intoxications such as alcohol, and personally I have seen it in poisoning from amyl alcohol and in

malnutrition from starvation. It also occurs in syphilitic hearts and in hearts poisoned by infections, such as grippe. Lewis mentions it as being frequently present in patients who have rheumatic hearts and are under the influence of digitalis. It appearently is an irregular increasing and relaxing control of vagus origin.

Simple paroxysmal tachycardia is usually classified as a clinical irregularity of the heart beat. What is so designated here is that form of cardiac frequency of contraction which is arbitrarily placed at from 110 to 200 per minute, usually running between 140 to 190. This is Lewis's arbitrary division, which divides it from the cases of auricular flutter, which we shall consider in a moment. Formerly all rates from 200 to 300 were designated as the paroxysmal tachycardia. The real difference, however, between the two conditions is that the beats are transmitted from auricle to ventricle in the tachycardia while in the auricular flutter the auricular contractions are two or three times as many as the ventricular. There is, therefore, in the flutter, a heart block which seems to begin at about the 200 rate. The supposed origin of this tachycardia or increased contracting impulse is believed to be outside of the true pacemaker in some abnormal position, and Lewis believes he has proved this through his electrocardiographic curves. The abnormal focus, however, while generally seated in the auricle, may be in the the ventricle. This irregularity occurs at all ages, the most frequent occurrence being between twenty and thirty years of age. Rheumatic fever is the only infection which seems to be at all common. A few of the patients have been syphilitic. This form of irregularity at times occurs immediately after severe infections of malaria, measles and scarlet fever. It has been noticed in hearts in which there were no valvular lesions, in which dilatation was present and in which dyspnœa on exertion and serious signs of cardiac failure have given evidences of the existence of a degeneration of the myocardium. It would seem to justify the conclusion that it is connected in some way with degenerative changes going on in the heart. Post-mortem examinations have shown fibroid replacement, brown atrophy and the resulting changes from arteriosclerosis, while in a few cases nerve lesions have been found, but whether these nerve lesions have any association with the specific condition under discussion has not been determined.

Auricular flutter, as I mentioned above, is a condition in which the auricle beats at a rate varying from 200 to 350 per minute. The auricle beats regularly at this tremendous rate; the ventricle lags behind, beating from 130 to 160 per minute. The beart block which separates the equal regularity of rhythm of auricle and ventricle here is frequently not of severe type as far as the inability is concerned to block the impulse from auricle to ventricle, because exertion, often a very mild exertion, may cause the ventricle to endeavor to beat as rapidly as the fluttering auricle. This the human organism does not stand and unconsciousness quickly occurs, and it is evident that if persisted in, life could not long be sustained at this rate. The fluttering auricle, with the ventricle at about 150, can run on for weeks or months at a time. Mackenzie believes that it is a fairly common condition, while Lewis considers it rare. It is a condition of only recent recognition and the exact frequency of its occurrence and its exact relations to other conditions of the heart still remain to be shown. It seems to occur more frequently in the later years of life and is most often due to the arteriosclerotic type of heart. It has been observed in certain patients in whom the rheumatic and the syphilitic infections seem to be responsible for their degeneration, in others following sepsis, and in gouty individuals who evidently possessed arteriosclerotic myocardial degeneration.

Alternation of the pulse is a condition which is usually recognized only in instrumental taking of the pulse. It is that condition of the pulse in which each alternate beat is large and each alternate beat is small, that is, if the beats are numbered, all the odd numbered beats are large and the even numbered beats are smaller. It rarely is possible to feel this with the finger, but it shows distinctly in any sphygmographic tracing. The origin of it is not clear. It occurs in some cases of paroxysmal tachycardia. It occurs more frequently when the heart is beating normally, but when the conditions which bring about angina pectoris are present, that is, when there is a strain on the muscle of the heart which it is unable to overcome and which produces the signs of a failing and struggling heart. It is commonly seen in the elderly patient with high arterial pressure, with renal disease and with fibroid degeneration of the heart. These, as I have said, are the ones in which angina pectoris appears. It has been encountered in pneumonia just before the crisis and has been seen in patients under the influence of large doses of digitalis. The prognostic significance is more clear that its origin, for, as I have said, it means a struggling heart unable to carry its burdens.

These various irregularities of the cardiac rhythm constitute those that are usually recognized clinically. It is evident, therefore, considering the conception that we have given of myocardial degenerations and the occurrence of these degenerations in relation to the various clinical irregularities described, that these irregularities are expressions of myocardial degeneration. They are not the expression of normally functionating muscles. It is also evident that at present we cannot say that a given irregularity is due to a given definite form of myocardial change. The sinus arrhythmia occurs in the milder forms of myocardial changes due to the

intoxications in the mild forms in which recovery speedily occurs. The severe infections produce the intense acute degenerations which may occur evenly over the heart muscle or may be more intense in one area than in the others, thus producing the same localized intensity of injury that is produced by the chronic forms of myocardial degeneration. These clinical irregularities usually are the expression of the patchy fibroid cicatrical areas resulting from the morbid processes of rheumatism, syphilis and arteriosclerosis. We are, therefore, thrown back for our accurate diagnosis on the knowledge of what has gone before, on our knowledge of the diseases from which the individual has suffered. But we are forced to realize that these general diseases of rheumatism, syphilis, sepsis and the like bring about a change in the heart muscle as they bring about changes elsewhere in the body, and we must, therefore, be willing to accept the fact that if these diseases are present and there are evidences of disturbed cardiac rhythm, that the degenerative changes found post-mortem are existing antemortem before the pathologist sees them, and that clinically they exist when the heart shows the clinical evidences of this disordered mechanism. The inability, therefore, to diagnosticate myocardial degeneration is the inability to draw logical deductions from cardiac pain, dyspnœa on exertion and clinical irregularities.

A CONSIDERATION OF THE VARIOUS METHODS OF BLOOD TRANSFUSION AND ITS VALUE.*

By JOHN A. HARTWELL, M.D.

NEW YORK CITY.

THE transfusion of blood from one person to another, considered in its broadest sense, is a homologous transplantation of tissue. This is an aspect which has failed of proper emphasis. The blood has been considered as a chemical and physical mixture, unendowed with the attributes of living tissue. The conception of transfusion has been that it involved the introduction into an individual of a complex fluid, without living properties. This complex fluid possesses the peculiar chemical property of coagulation under certain conditions, and the first aim of all methods of transfusion has been to avoid the conditions which lead to this change.

Such avoidance is a *sine qua non*. The results following the transfusion of a blood which contains clots, or contains substances which could cause an intravascular clotting in the recipient, would prove disastrous. However, this is only a partial solving of the problem. Until we study in its entirety the broader aspect of the subject, we cannot know the value or the limitations of the procedure as a therapeutic agent.

In considering then the transplanting of blood from one individual to another, we must answer the following questions:

First.—Does the method employed guard against the changes involved in coagulation?

Second.—Does the method employed transplant the new tissue in such a manner that it can live in its new host?

Third.—Is the pathological condition existing in the host favorable or unfavorable to the continued life of the new tissue?

Fourth.—If unfavorable, can any good be accomplished by chemical or physical reactions between the new tissue and the host, which are not dependent on living activities?

Fifth.—Does any condition exist by which the new tissue may prove a detriment instead of a benefit to the host?

Sixth.—Is the quantity of blood administered an important factor?

But little attention has been paid to the question of the mass of the new tissue which should be used. The conception that blood transfusion meant simply the giving of blood to the recipient, has resulted in the attempt in most instances to give the maximum dose. We have no knowledge which determines whether a small dose will not produce the same effect by biological interactions. Smaller doses, frequently repeated, may be of greater service than one large dose. Again, there are no definite data upon which we may reasonably base a conclusion as to whether an actual transplant is needed, or simply a chemical effect. In short, our attention has been so occupied with the one problem of finding a simple practical means of transfusion without clotting, that the underlying principles of the subject have been almost entirely neglected.

So far as the writer has been able to review the literature, no worker on the subject has given these principles more than passing notice. Reflection, however, will convince anyone that there is only one condition in which a massive transfusion of whole blood is, on a priori grounds, indicated. That condition exists when an individual has suffered such a severe loss of blood from direct hemorrhage that life is endangered because of insufficient blood to maintain oxygenation of the tissues.

Before taking up the more particular phase of the subject given in the title of our paper, it would, therefore, seem wise to discuss in some detail the usefulness of transfusion in general, and the results so far obtained. Answers to the questions above propounded may well result in the limitation of transfusion in large quantities to the one condition

* Read at the Annual Meeting of the Medical Society of the State of New York, April 28, 1914.

just mentioned, and a substitution of more logical procedures in the widely varying conditions in which transfusion now holds more or less spectacular sway.

The literature during recent years shows this remedy is being very extensively used, but that in most cases its use is based on speculation rather than on sound reasoning. The conditions which have been so treated may be divided into three groups: first, for hemorrhage; second, for anæmias, both primary and secondary, arising in the course of diseases not attended with hemorrhage, and third, for toxic conditions, both bacterial and and metabolic.

In the first condition there can be no argument against the value of a transfusion properly done. The indication is to replace blood which has been lost. Provided no factors are present which will lead to a rapid hemolysis, or agglutination of either the blood of the donor or the recipient, the new blood meets the requirements. Ottenberg and Kalinski (1) (*Journal American Medical Association,* December 13, 1913), have carefully studied the possibilities and dangers of these accidents. They give valuable information concerning their avoidance, a precaution that must not be overlooked. It often happens that the red cells are ultimately destroyed more rapidly than normally is the case, but they serve the purpose of oxygen carriers during the critical period, and tide over the emergency until the bone marrow can replace those lost. The influx of blood from the donor may thus place the patient in condition to undergo some needed operation for the control of the hemorrhage. Examples of this are seen in ruptured ectopic gestations, in gastric and duodenal ulcers, and in typhoid fever. In this class of cases the loss of blood is a complication of the disease, and not an essential part of it. Replacement of the lost blood is a valuable aid to recovery.

When, however, the loss of blood is an essential feature of the pathological process, as in hæmophilia, hemorrhage of the new born, scorbutus, and other conditions, there is an added consideration entering into the treatment. Here the indication is not only to replace blood already lost, but to so alter the disease that more bleeding shall not take place. The former may require a massive transfusion; the latter may be equally well, or better attained by the use of a small amount of blood serum. Welch (2) (*American Journal Medical Sciences,* 1910, p. 800), demonstrated this, and proved its efficiency in the hemorrhagic diathesis of the new born. The difficult procedure of transfusion in the infant suffering from this disease, need not be attempted. Intramuscular injections of serum are simple and curative.

Clowes and Busch (3) (*New York Medical Journal,* 97, p. 16), report a very considerable amount of work done with the purpose of having the active principle of the serum—presumably thrombin—always at hand when needed. Experimentation showed that horses' serum yielded the best product, and in more than a hundred cases was free from objectionable factors. The serum was treated with a mixture of ether and acetone, and the resulting precipitate obtained by filtration under pressure. This method yielded an anhydrous friable powder, readily soluble in cold water. It has more power in promoting coagulation than does serum, and it retains this power for periods of two years at least, which serum will not do. Intractable hemorrhage in a variety of conditions was successfully treated by hypodermic injections of a solution of this powder.

Porbasco (4) (New York State Journal of Medicine, Vol. 12, p. 32), reviews the use of serum for the control of hemorrhage, and shows its value. It would seem that a more careful study than has been given to the subject might result in a wider usefulness of this simple procedure, and a consequent restriction of transfusion.

Lindemann (5) (*Journal American Medical Association,* March 28, 1914), gives figures which show that a normal donor rapidly regains the blood given up for a transfusion, and clinical experience teaches us that a nearly exsanguinated person will produce new blood with great ease, provided the loss of blood is stopped. Until, therefore, it is proved that the introduction of whole blood is more efficacious than the introduction of serum toward controlling intractable bleeding, the latter should be the choice in this class of cases, except where an emergency need of more red blood corpuscles is present. That this conception is not the one generally accepted is shown by a review of the literature.

Lindemann (loc. cit.), in the series of 135 cases which he reports, gives only a few detailed blood examinations. There is indirect evidence, however, that many of his cases were not of the emergency type, and that a serum injection might have well answered the purpose. Examples are: hemophilia, chlorosis, hemorrhoids, with secondary anæmia, post operative nephrotomy.

The last case is reported in some detail. A woman of 34 years showed a post operative hæmoglobin of 50 per cent., and R.B.C. of 2,960,000. Two days later she received 1,000 c.c. of blood, and the following day the hæmoglobin was 80 per cent., and R.B.C. 5,600,000. It is improbable that the doubling of the red cells was accounted for by the actual number introduced. The change rather arose from an increased activity on the part of the blood-forming elements, and it may well be that a

minimal transfusion, or even a serum injection, would have been as efficient an aid.

Bernheim (6) (*Journal American Medical Association,* 1913, p. 268, in a paper read before the American Medical Association), makes an appeal for a varied application of transfusion. He fails to differentiate the objects to be attained, but advocates the use of transfusion in a spirit of optimism, and somewhat of adventure. Such empiricism may yield results, but modern thought deprecates it, and rightly so. If, in desperation, we resort to a transfusion, with hope as our only justification, let us at least make such thorough study that our hope may be combined with reason in the next similar experience, or that even hope no longer leads us into doing that which is not reasonable.

There is, so far as the writer has been able to learn, no reported case in which a transfusion has been positively curative in conditions of primary or secondary anæmia existing in a disease not associated with hemorrhage. Its value in such conditions is purely a temporary one, and indeed, a very limited one. Underlying all such diseases is a pathology which destroys blood in *vivo.* The anæmia is a symptom, not the disease. Nothing, therefore, can be permanently gained by throwing into the circulation new blood which has no added power of resistance against the destructive process, unless this process is in some way controlled.

It may be that some elements in the normal blood will work a beneficial influence. Such a conception, however, does not rest on known facts, and experience has not demonstrated this influence. Transfusion may tide a patient of this class over an emergency in order that some other therapeusis may be of value, but it is not a curative agency. The literature, however, is filled with reports of transfusion being done for such conditions. Lindemann's series include many such, and Bernhein mentions them among the diseases he feels should be energetically attacked. The writer is, to some extent, willing to encourage this view, and advocates strongly the continued study of the value of transfusion for splenic anæmia, pernicious anæmia, and severe grades of anæmia of unknown origin. It is his desire, however, to arouse enthusiasm for a more intensive study. The cases reported show in many instances a very decided improvement after the transfusion. On the contrary, there are examples where the procedure has resulted in no change, and others where a severe pathological reaction appeared. Neither the hemolysis nor the agglutination seemed to account for these reactions, and they are recorded without comment. It is permissible to again emphasize the complexity of the problem to the end that careful laboratory study by our most competent hemotologists may be added to the clinical observations.

Vogel and McCurdy (7) (*Archives Internal Medicine,* December, 1913, p. 707), has made an excellent contribution along these lines. They studied the evidence of blood regeneration in cases of pernicious anæmia as indicated by the increase in the relative number of reticulated red blood cells seen by means of vital staining. Their important conclusion is that repeated small doses of transfused blood are more efficient than large doses.

This article will repay very careful reading. It is filled with valuable suggestions, and contains full references to the literature. The analysis of the cases, and of the cases referred to, bears out the impression that up to the present time transfusion as a therapeutic agent in pernicious anæmia has been of only temporary value. We, however, express definite hope for a betterment in the future.

The third class of cases in which transfusion has had a wide trial is in pathological states arising from bacterial infections. In April, 1910, the writer read a paper before the Surgical Section of the New York Academy of Medicine (8) (*Medical Record,* June 11, 1910), in which this phase of the subject was discussed as follows:

"In using a transfusion for infection, we may hope to bring about alterations through the bactericidal power of the introduced serum, through the addition of immune bodies, through the activity of the healthy phagocytes, or through the introduction of unknown substances existing in the blood of a normal person which have become vitiated in the patient. That such a hope has little justification in experience up to the present time is disappointing, because in many conditions the knowledge we possess of certain pathological processes due to bacteria and their antagonism by the living organism would seem to argue strongly in favor of transfusion as a therapeutic measure. A living bacterial organism gains admission to the body of an individual, and, finding a suitable medium, rapidly develops. The body defences of the individual come to the rescue, and the bacteria may be destroyed, with the return to health of the individual, with or without surgical intervention. In case this defense is not sufficient, the bacteria increase still farther, and the death of the individual may result. That this defense lies to a great extent in the blood is an established fact. The serum contains bodies which act either as inhibitors to the life of the bacterium, or as activators to the blood phagocytes, or as neutralizing agents to the toxins, in any case lessening the evil effects of the bacterial activities.

"The usual clinical study of the white blood cells gives us valuable evidence of the way

the battle is going, and in many cases a proper prognosis can be arrived at in this way. This, interpreted, means that under the stimulation of the invading organisms, the circulating cells become more numerous and more potent when the contest is turning in favor of the body cells, and less so when these are being overwhelmed by the micro-organisms. Experimentally, and clinically also, there is indisputable evidence that the serum contains bacteriolysins. When, therefore, we are confronted by a patient suffering from an infectious process, we might, with reason, hope to aid his defenses by means of a transfusion. And could we obtain as a donor, one who had recently recovered from the same infection, we would have further ground for hope by the possibility of introducing immune bodies with the elements of the normal blood. The agglutination of typhoid bacilli by the serum of a patient recovered from this disease, is an expression of this process. This reaction may exist in the serum over long periods in some instances. Since practically every typhoid patient shows the presence of the bacillus in the blood, a transfusion from a person recovered from typhoid ought to exert a very beneficial effect. In chronic infections it ought to be possible to increase the efficiency of the donor's blood by subjecting him to a treatment of vaccine made from the infecting organism.

"Certainly this problem is worthy of further experimental and clinical study. The writer feels that, notwithstanding the unsatisfactory results up to the present time, transfusion as judged from experimental findings, should be a valuable aid in the treatment of septic conditions. It must be remembered that the total number of cases in which it has been tried is small, and in most of these the conditions were unfavorable, transfusion being used only as a last resort."

These opinions were given four years ago, and unfortunately, the hope expressed has not been realized. Transfusion has now been given a very extended trial in septic conditions, both local and general. Some apparent successes have been recorded, but the failures have far outnumbered them, and one can only review the subject with a feeling of disappointment.

Welch (loc. cit.) reports some cases of bacteræmia in which the injections of repeated small doses of blood serum gave apparent benefit. This aspect of the subject should receive additional study. Here, as in the cases of the anæmias, we are lacking definite knowledge as to many of the details which are of value. The use of both transfusion and serum injection has been tried extensively, but the reports of the cases fail to reveal a complete analysis. We are in need of more definite experimental knowledge along these lines. Oft repeated transfusions of small amounts should be tried, and the effects studied in animals having received lethal and sublethal doses of pyogenic organisms.

The technique of transfusion, as will be discussed immediately, has been markedly simplified and improved in the past five years. Its difficulties have been almost entirely eliminated, and the procedure is now easily accomplished in any ordinarily equipped operating room or ward.

Lindemann (loc. cit.) has done nearly 150 transfusions. Bernheim (loc. cit.), while not mentioning actual figures, cites a large experience. Ottenberg and Kalinski (loc. cit.) include 125 cases in their study of hemolysis and agglutination, while many others report a fairly wide experience. The material at hand, therefore, is ample to carry out the studies suggested in our presentation of the subject, and the object of such presentation has been to emphasize the need of these studies, rather than of isolated case reports.

The writer has been able to find no extended or comprehensive study of most of the problems involved. Very satisfactory clinical analyses are given in the papers of Ottenberg and Vogel already cited, on certain phases of the subject. More of these are needed, and now that the technique of transfusion, as we shall immediately show, is simple and efficient, there should be ample opportunity to arrive at definite and accurate answers to the many questions involved.

The ideal technique of transfusion involves four factors.

First.—Absolute asepsis.

Second.—No blood change.

Third.—Ability to measure the quantity transfused.

Fourth.—Ease of accomplishment for the donor, the recipient and the operator.

The methods so far described, come under three classes.

First.—The passage of blood directly from the donor to the recipient, avoiding contact with anything but the intima.

Second.—The passage through foreign tubes from the donor to the recipient.

Third.—The use of an intermediate receptacle between the donor and the recipient.

The first is the method popularized in recent times by Carrel when the artery of the donor is sutured to the vein of the recipient. The canulæ of Crile, Elsberg, Buerger, Janeway, *et al* were devised with the object of making this procedure easy of accomplishment. This class of operation fulfills absolutely the first and second requirements mentioned above as being essential to the

ideal. None of them, however, give any knowledge of dosage, and it is often a matter of speculation as to whether a little or much blood has passed over.

The constant modifications being brought forward by different operators is evidence that ease of accomplishment is not an attribute of the method. The operation often assumes the magnitude of a major procedure, and is exhausting alike to donor, recipient and surgeons. A modification by which vein to vein anastomosis was done, has been introduced. The writer has used it effectively many times. This eliminates some of the disadvantages of the artery to vein method, and is somewhat easier of accomplishment for all concerned. It, however, affords no measure of amounts, and in some cases the venous pressure of the donor has not been sufficient to give a good flow. It falls far short of meeting the requirements of the ideal method.

The second class of operation includes all those in which some sort of a tube is used to act as a connecting link between the donor and the recipient. To prevent coagulation the tube is coated with parafine or a mineral oil. Sections of the vessels of the lower animals, carefully removed under aseptic precautions, and kept sterile in cold storage, have also been used with some success. This class of operation is easier of execution than the direct contact of intima to intima, and with the small tubes devised by Brewer (9) (*Surgery, Gynecology and Obstetrics,* 1909, 9, 293), or those of Carrel, or the double tubes of Bernheim (10) (*Journal American Medical Association,* 1912), a rapid anastomosis may be done. There is, however, always present the possibility of clothing. Again, no quantitative estimation is possible. Finally, the procedure seems formidable to the donor and the recipient, requiring as it does, a fairly delicate and extensive dissection, with the maintaining on their parts, of a very uncomfortable and tiring position for a considerable period. For these reasons the indirect joining of the vessel of the donor and recipient by any method yet described, does not meet the ideal requirements. So long as dependence was placed on either the direct or indirect vascular anastomosis, transfusion could not be universally practiced. While many men became very proficient in these methods, and practiced the operation easily and successfully, two obstacles were always encountered. The bystander—often the physician in charge of the patient—could not be convinced that blood actually entered the vein, and even acknowledging this, he or the operator could only hazard a guess as to how much was entering. The donor, at the conclusion of the operation, was fully satisfied that he had submitted to a formidable procedure, and was loath to help a second time, or to encourage others to do so.

These considerations have been the incentive which has kept alive a constant search for some method which would more nearly approximate the ideal, and it has been recognized that the use of an intermediate receptacle would eliminate most of the difficulties. Success in this class of operation lay in finding a means by which changes in the blood—particularly clotting—could be prevented. This has been attempted in two ways: first, by making the transfer so rapidly that the blood entered the recipient's vein in less than the normal coagulation time, and second, by adopting means to delay or prevent coagulation.

The first record found in the literature of a successful method of rapid transfusion, in less than coagulation time, by means of the syringe, is described by Von Ziemssen (11) (*Deutch. Archiv.* Bd. 50, p. 491). He used three syringes of the record type, and by rapid work was able to draw 20 c.c. of blood from a subcutaneous venous puncture, disconnect the syringe and empty it through a needle similarly placed in the recipient's vein before coagulation took place. By filling the syringes, one after another, he transfused as much as 280 c.c. at one sitting. He used the method successfully, and considered it as an efficient and satisfactory technique. His communication, however, seems to have attracted little attention, and is not quoted by most of the more recent writers. The common practice of drawing blood from the vein for the study of its bacteriology, the Wassermann reaction, and other tests, and the intravenous injection of salvarsan by subcutaneous venous puncture, demonstrated the ease of the procedure, and as a result there has lately been a return to the method of Ziemssen.

Moritz (12) (*Münches Med. Wochuschr.* 1911, lviii, p. 305), used a modification which was reported by Hürter (13) (*Beiheft. z. Med. Klinsch,* 1911, No. 12), as satisfactory.

Lindemann (14) (*Ref. Ped. Sect. N. Y. Acad. Med.,* April 10, 1913), and (15) (*Amer. Jour. Dis. Child.,* July, 1913, p. 28), added very essential improvements to the technique in 1913 by using a larger number of 20 c.c. syringes which were kept constantly washed by an assistant, and more particularly by devising a special nest of three cannulæ, the outer one of which is rounded on the end so as to avoid injury to the intima during the manipulations needed in transferring the syringes, one after another, from the donor's to the recipient's canula. He reports the use of this method (loc. cit.) in 135 cases. In his hands it is most efficient, and the writer has seen him transfer 800 to 1,000 c.c. of blood in ten to twelve minutes. Many other operators have done it with equal success, and it seems to meet the requirements of this type of technique admirably. An operator and two

assistants are needed, and a rather formidable array of syringes, wash basins, *et cetra*, give the impression of its being a rather major proceeding. Considerable experience is required to carry out all the steps needed to make the transfusion with sufficient celerity to avoid coagulation. It is, therefore, lacking in at least one of the attributes of the ideal method, absolute certainty in the hands of those of limited experience and lack of disturbing influences on the donor and recipient.

The attainment of the ideal seems to lie in the development of a method by which coagulation of the blood and other alterations are prevented during the time required to draw sufficient blood—1,000 c.c. for example—into a receptacle connected by subcutaneous venous puncture with the donor, and to empty it again through a similar puncture in the recipient, these two principals, if desirable, being in separate rooms.

Curtis and David (16) (*Journal American Medical Association,* Vol. 57, 1911, p. 1453), Satterlee and Hooker (17) (*Arch. Int. Med.,* Vol. 13, 1914, p. 51), and Kimptom and Brown (18) (*Journal American Medical Association,* July 12, 1913, p. 117), describe means by which this may be accomplished, the principle involved being the coating of the inside of the whole system with parafine. Blood in contact with a perfectly smooth surface of hardened parafine, as is well known to all laboratory workers, will not clot for many minutes, provided the container is not agitated. Sufficient time is thus allowed to fill the receptacle from the donor's vein, connect it with the recipient's vein, and empty the blood into the latter before coagulation results. One very serious objection is present in such methods. The complete coating of the whole system by a thin, smooth layer of parafine, is not very easy of accomplishment, and any error in this step results in certain coagulation with its accompanying evils. The Satterlee-Hooker method. To overcome this difficulty, Satterlee and Hooker have modified their apparatus and have perfected a method which nearly, if not quite, promises to fulfill the ideal requirements. Full descriptions of this will soon appear in *Surgery, Gynecology and Obstetrics,* and in a second communication, and I am much indebted to the author for permission to speak of it at this time, in advance of their publication.

They have entered very carefully into the details of blood coagulation by a theoretical and experimental study, and have taken great pains to avoid all factors which contribute to this change. Essentially, they have adopted the teachings of Howell (19) (*American Journal Phys.,* 1912, Vol. 29), as to the process of coagulation.

Howell says, "Circulating blood contains normally all the necessary fibrin factors, namely, fibrinogen, prothrombin and calcium. These substances are prevented from reacting and the normal fluidity of the blood is maintained by the fact that antithrombin is also present, and this substance prevents the calcium from activating the prothrombin to thrombin. In shed blood the restraining effect of the antithrombin is neutralized by the action of a substance (thromboplastin) furnished in mammals by the blood itself (blood platelets) and possibly the white corpuscles."

The thromboplastic substance is thrown off when the platelets and white corpuscles are mechanically injured, either intravascularly, or after being shed, or when they come in contact with traumatized tissue. It is therefore important to prevent the canula through which the blood is drawn from coming in contact with traumatized tissues. To accomplish this, Satterlee and Hooker introduce an outside canula through the donor's vein, which is exposed through a small skin incision. A second canula connected with the receptacle, and coated with parafine, is passed for a farther distance into the vein through this outer canula, thus receiving blood from a point remote from the injury in the vein wall. Its coating of parafine protects the formed elements, which contain the thromboplastic substance, from disintegration. In order to prevent coagulation after the blood is received into the receptacle, they have availed themselves of the psysiologists knowledge of hirudin—leech extract. This substance acts as antithrombin. It, therefore, has an affinity for the thromboplastic substance, and a minute quantity of it thus inactivates any of the latter which may be formed within the receptacle. So long as free antithrombin is present coagulation is impossible. The complete details, with experimental study, of the action of hirudin will be found in the forthcoming articles of the originators so that we need not give them here.

In brief, however, we may say that it has been experimentally shown by Bodong (20) (*Arch. für. Exp. Pathol. u Phar.,* Vol. 52, p. 254), and Able, Rountree and Turner (21) (*Jour. Pharm. and Exp. Thera.,* Vol. 5, 1914, p. 302), that hirudin in sufficient doses to totally prevent the coagulation of the whole circulating blood is not toxic; .051 to .075 gms. per kgm. is not harmful to rabbits or to dogs.

Franz (22) (*Arch. f. Exp. Pathol. u. Pharm.,* Vol. 49), states that .100 gms. are sufficient to prevent coagulation in 500 c.c. of blood for many hours. This amount is one-thirtieth of the amount of known safety, if injected into an individual weighing 50 kilos. It is, on the other hand, twenty or more times in excess of the amount needed as determined by Satterlee and Hooker to prevent coagulation over a period of thirty minutes, when used in con-

nection with their apparatus, *i. e.*, the amount used is not more than 1/6000 part of a known safe dose. .003 to .005 gms. prevent coagulation of 100 c.c. of blood when drawn into the receptacle according to the technique described by them. The hirudin is used in a 1 to 500 solution in 9 per cent Na Cl sol. It is found that about 2 c.c. of this solution, or .004 gms. of hirudin is sufficient to completely wet the inside of a 220 c.c. receptacle, and prevent coagulation for twenty minutes. This gives a large margin of safety over the time required to empty the receptacle through a canula already introduced into the recipient's vein. The amount of hirudin is too minute to be a danger to the recipient, even in cases of hemophilia.

The use of this apparatus greatly simplifies the operation of transfusion, and makes it possible to obtain the blood from a donor, if advisable pass into an adjoining room, and administer it to the recipient. But one operator with a nurse is required for the whole procedure, and there is none of the excitement and tension of all concerned, that obtains with other methods.

It may be well to add a word of caution against still farther simplifying the technique by using an ordinary needle and a subcutaneous venous puncture to enter the donor's vein.

Extensive experimentation by physiologists working on the subject of coagulation has shown that the tissue juices are very rich in thromboplastic substance. Satterlee and Hooper, by actual tests, found that the amount present was increased many times when the double canula was replaced by the simple puncturing needle.

Summary.—Blood transfusion is in reality a homologous transplant and must be so studied.

The technique of transfusion by the means of an intermediate receptacle—preferably that of Satterlee and Hooker—is now perfected to meet practically ideal requirements. It is no longer an ordeal for the operator, the donor, or the recipient. It can, therefore, be used in general hospital practice whenever indicated.

As yet, transfusion has proved of permanent benefit only in conditions resulting in the loss of blood by hemorrhage. ,

Some isolated cases give rise to the hope that it will be curative in the primary anæmias, but as yet the benefit in these conditions has been temporary.

The results have been disappointing when transfusion has been used for septic conditions, though exceptionally the benefit has appeared so striking that we may hope for farther advance in this direction.

The simplified technique will afford an opportunity for more careful study of the indications, the limitations, and the result of its use. Such study is greatly needed, since in the past the desire to develop a practical technique has overshadowed all else, and other phases have been neglected.

This paper is presented for the sole purpose of emphasizing this need, and urging that all interested workers shall aid in the requisite investigations.

THE REMOVAL OF FACIAL BLEMISHES AND EPITHELIOMATA.*

By E. WOOD RUGGLES, A.M., M.D.,
ROCHESTER, N. Y.

MANY dermatologists resent deeply the title "Beauty Doctor," which is sometimes applied to them and articles on the subject of this paper are very rare. Why the title should be considered a reproach, I cannot understand. To a large part of the population the matter of personal appearance is very important.

In spite of the much-lauded "Emancipation of Woman" it is still true, thank God, that the most fortunate possible culmination of a woman's career is a happy marriage; better by far than all the honors which colleges and politics can heap upon her. And in the selection of a traveling companion for life's journey, the man, no matter how well equipped mentally or how acute his perceptions in other matters is, to a great, generally preponderating degree, influenced by external attractiveness in his mating. He looks mostly for the beauty which "is only skin deep."

The matter of good looks is not alone important to the gentler sex. While beauty is not even a desirable quality in a man the presence of anything repulsive upon the countenance is a serious handicap to his success in any pursuit which brings him much in contact with other people.

I, therefore, personally rather glory in the fact that dermatologists are acknowledged to have the power, in many instances, of making the repulsive face less liable to attract unpleasant attention, of rendering the plain face attractive, and even of harmonizing the one discordant feature which mars an otherwise beautiful face.

To begin with, I am a crank on the subject of moles. One does see, rarely, a mole of the right size and hue and location to add piquancy to a woman's face, in the same manner as does the time-honored court-plaster. Generally, however, they disfigure the wearer to some degree, and uselessly, since they may easily be removed.

For this purpose parallel punctures through the mole with the electric needle, at the distance of one thirty-second, to one-sixteenth of an inch, is by all means the safest method. If through experience, one has become capable of judging

* Read at the Annual Meeting of the Lake Keuka Medical Association, July 9, 1914.

just how much treatment he can give without danger of causing a noticeable scar and is content to remain within this limit, even if he is forced to employ a second or third treatment, he will attain uniformly successful results and earn the gratitude of his patients. The quantity of current used varies between three-fourths and four milli-amperes and the time in inverse proportion. One judges if he has produced the desired effect by the whitening of the tissues and the bubbles of hydrogen gas produced rather than by the length of treatment; a technique which can only be acquired by experience.

This treatment is acutely painful in most patients—its only redeeming feature is that the pain is minute; did it extend over a considerable area it would be unsupportable. It can be eliminated by the injection of a few drops of coccaine or quinine and urea hydrochloride solution, but water is a good conductor of electricity and there is some risk of thereby causing a larger scar.

In the treatment of large moles I often reduce them greatly in size by the use of carbon dioxide. The credit for this modification of the liquid air treatment must be given to Pusey, of Chicago. Dade, of New York, was the first to utilize the effect of intense cold in the treatment of skin diseases. His first articles on the subject were published in 1905. Liquid air, which has a temperature of —130 degrees F., is applied with a cotton swab or tampon saturated with the liquid. The tissues shrink and become frozen, white and stiff in ten or twenty seconds. Upon thawing, a bulla forms and there is considerable pain. The superficial layers of the skin are destroyed to a depth corresponding to the length of the exposure and the degree of pressure.

Pusey's improvement in utilizing the snow formed by allowing liquified carbon dioxide to vaporize rapidly has made this method of treatment much more valuable, because the snow can be compressed, moulded and whittled into any shape desired, and thus exactly the required extent of surface be treated, while with a wet swab, this was impossible. The temperature of this carbon dioxide snow is —65 degrees F. The results with this agent are often truly remarkable. One young woman came to me with an elevated mole on her cheek as large as a man's forefinger nail, almost black in color and closely studded with black, beard-like hairs which she cut every week. I expected to be obliged to kill each hair separately by electrolysis, but being in a hurry made an application of CO_2 snow. She returned in six weeks with a light brown mark on the site of the mole, not elevated and containing but three hairs and was so pleased with the result that she abandoned further treatment.

Another great service of the carbon dioxide snow is in the removal of hyperkeratoses, the small horny growths which occur upon the face at all ages, but particularly as a senile degeneration. When these are present in a patient with epithelioma they should be removed immediately as they are certain sooner or later to become malignant, and it is advisable to eradicate them in all patients of forty years or more. Like all active treatments carbon dioxide snow is capable of producing unsightly scars if not skillfully employed and may even cause keloid.

Warts on the face are comparatively infrequent. They are of different type from those of the hand, being generally verrucæ planæ or verrucæ filiformes. The pedunculated variety is most easily removed by ligation below the base with silk thread. Either electrolysis or carbon dioxide snow may be used upon the larger growths.

That warts whether contagious or not are certainly auto-inoculable has been recently proved to me by the case of a young out-of-town physician who came to me with forty or fifty of these growths upon the bearded chin. He stated that there was only one for some time, but upon cutting it with the razor others appeared and although most of them had been removed with caustics the area was soon covered again.

I wish here to refer to the excellent work of Parker Syms, of New York, upon the "Precancerous Stage." He calls attention to the fact that a great many warts and particularly moles are the precursors of epithelioma. I removed eight months ago, a large epithelioma from a man's upper lip, which had existed as a wart in the moustache for thirty years. It had assumed a malignant form about four or five years ago and had been operated upon half-heartedly two years later.

Upon the first sign of change of any character in a wart or mole after the age of forty, whether in its simply growing more rapidly, becoming more corn-like in texture, ulcerating, bleeding easily, or returning rapidly after being accidentally cut off with the razor, it should be thoroughly and deeply removed.

It is an old superstition that if you remove a mole you are likely to cause a cancer. Nothing could be farther from the truth: an untreated mole may become a cancer; one properly removed never. This is a field where a cosmetic measure may save a human life.

The results from the removal of epitheliomata are so gratifying when properly performed that I cannot refrain from mentioning them. Here is a situation where, although mutilation should be spared if possible, the future of the individual is the first consideration. Methods vary but the chief aim is to destroy the tissues well beyond the new growth.

Many dermatologists, notably Dr. Wende, of Buffalo, treat moderate-sized epitheliomata by very thorough electrolysis, destroying the tissues

well outside of the growth and very deeply beneath it.

My own preference is for the method of Sherwell, of Brooklyn, which consists in a deep, extensive and ferocious curetting of the lesion, followed, after all bleeding has been stopped, by a cauterization with acid nitrate of mercury. A coating of bicarbonate of soda is then applied and the wound left exposed or covered according to the preference of the patient. In about twenty of these cases, several of five or more years standing since the operation, I have had no recurrences. There was one recurrence in a case treated by electrolysis. This was then treated successfully by the method stated above. One patient, with epithelioma of the upper lip where I had obtained a very satisfactory result locally with arsenical paste, died six years later from carcinoma of the stomach.

In favorable cases, where a good plastic result can be obtained in spite of a wide excision, pure surgical methods may be adopted.

The Roentgen rays have been employed with apparently very favorable results, but my personal feeling is that a radical removal should first be done and the X-rays be then used as a reinforcement of the procedure.

Of late there is a distinct furore over the use of radium in malignant tumors and possibly we shall have a branch of the "Radium Bank" in Rochester, so that we can rent at will a thousand or ten thousand dollar tube of this fabulously expensive remedy. The claims of the users of radium have, however, proved to be extravagant in many instances and the majority of conservative surgeons are very skeptical regarding its value in carcinoma.

Of eczema and acne of the face I will not treat since they are diseases rather than blemishes, although the latter often causes more mental distress than superfluous hair or moles.

Lupus erythematosus is a skin disease which produces facial lesions of such chronicity and obstinacy that they might well be termed blemishes. Before the advent of the CO_2 snow we dreaded to see these cases enter our offices as cure was so uncertain and the resulting scars so unsightly. Its lesions can now generally be removed in one or two treatments and the slight scar which remains seems to almost return to the natural texture and color of the skin under the influence of the sun and wind.

"Milia," the minute, intra-dermal pearly-white, cyst-like growths which occur principally below and externally to the eyes are occasionally so prominent as to be noticeable. These are best removed by puncture with a narrow-bladed scalpel, extrusion of the contents and slight scarification of the wall.

Telangiectases or "spider cancers" occur occasionally in an otherwise healthy skin and often in acne rosacea. The most frequent form is a varicosity of the capillaries with an outline resembling a miniature spider's web; hence the name "spider cancer." These are easily removed by electrolysis.

"Red nose" is the *"bête noire"* of both sexes. It is annoying to women because it detracts from their good looks and to men because of the suspicion, generally well founded, that they have "looked upon the wine when it is red" too frequently. It is the most prominent feature of acne rosacea, although the malar prominences and the chin may be equally affected.

The red color is not a pigmentation, it is due to chronic dilatation of the capillaries, in some cases diffuse only, so that no single capillary is enough enlarged to be visible In most cases, however, there is a combination of the two forms, a general redness and visible blood vessels in some areas.

Of course, if the condition is a symptom of acne rosacea the underlying disease must be treated in order to obtain permanent results. In these cases, however, multiple punctures, at right angles to the general course of the vessels often give remarkable results, and very rapidly. It is astounding how profusely the blood flows from these minute punctures, until the congestion is relieved. The wife of a local physician was almost entirely relieved of a very pronounced redness of the face in three or four weeks under this treatment, combined with general measures for the relief of her acne.

The most certain remedy, however, is electrolysis. One introduces a fine needle into the calibre of the vein and follows it as far as possible. It is very interesting to watch the bubbles of hydrogen as they whiten the veins often a half inch beyond the needle. The treatment seems to cause an obliterating inflammation of the vessel wall, even beyond where the needle was used. After all visible vessels have been destroyed the general redness can still be improved by judicious use of the needle.

Of all the less repulsive facial blemishes superfluous hairs have probably saddened more women's hearts than all the others combined Whether these will not be regarded as an advantage, in twenty-five or fifty years from now, when the distinctions between the sexes, both in dress and vocation shall largely have vanished and their mental attributes have become identical, is an open question. But at present they remain a grievous torment, even to the strong-minded female.

For their removal electrolysis is the only practical and safe method. It is tedious, painful and expensive but its effects are sure; *i. e.*, a hair properly treated will never return. However, even a skillful operator will fail to reach the papillæ of twenty or twenty-five per cent of the hairs, and these must be treated again. In the second place the tendency to hypertrichosis cannot be obliterated. Lanugo hairs will become heavier, stiffer and often darker,

so that repeated, though much less frequent, treatments are necessary after a patient's face has been cleared. There is another mooted point, as to just how fine hairs it is justifiable to treat. It is preferable to attack only hairs which have become beard-like, although I often yield to my patients' pleas and remove some rather fine hairs which are so long as to be noticeable. I always do it with misgiving as I have a well-defined conviction that electrolysis encourages somewhat the growth of hair upon the face.

One of my patients, trusting implicitly in the advertisement that the depilatory "Modene" permanently removes superfluous hairs, employed that nostrum for a year. When she ceased a beard nearly as luxuriant as a man's appeared. I have removed two thousand or more hairs from her face. This patient did not inherit a tendency to hypertrichosis from the mother. There are cases in which the use of a depilatory seems advisable but it is simply a substitute for shaving. The same care regarding scarring should be used as in the removal of moles and in addition the simultaneous removal of hairs at one-eighth inch distance apart and less should be avoided as it tends to scarring.

One of the most grateful patients I have ever had is a fine looking woman of about forty years of age, from whose face I have removed a heavy beard which she had been pulling out for years. She is able to wear decollette gowns, is no longer sensitive about her appearance and her husband informed me I had made her very happy.

I have left to the end the most distressing blemish, namely the nævus. Until the use of liquid air and carbon dioxide snow we were practically powerless in the presence of the large nævi.

We could and did remove a good many of them, but the resulting scars were often so horrible that we wished we had never interferred with the original lesion. Since the use of the liquid air and carbon dioxide snow, the outlook for these distressing cases is greatly improved. Even the worst forms with hypertrophy and irregular, papillary surface can be flattened out and most, if not all, of the color removed without the development of an unsightly scar, although, of course, a thin scar is apt to be produced. This, however, under the influence of the sun and wind tends to gradually approach the normal skin in color.

Persistence and good technique are required also considerable courage on the part of the patient as not only is the treatment somewhat painful, but considerable burning pain follows, often lasting for several hours. Pronounced disfigurement lasting from one to two weeks also occurs in every case which is at all extensive.

However, these drawbacks are only trifling compared with the happiness caused by the improvement in appearance of patients afflicted with nævi of the face.

ALFRED MERCER.

A MEMORIAL TRIBUTE.

By JOHN L. HEFFRON.

A FEW weeks ago there died in the city of Syracuse a man remarkable in many ways—Prof. Alfred Mercer, Doctor of Medicine. He was old, very old, but that was the least remarkable. His perfect mastery of himself should have assured him more than ninety-three and three-quarters years and doubtless would have done so had not an acute infection damaged his heart.

Dr. Mercer came of good, middle-class, English stock and inherited many of those qualities which most men have to strive for. He, of all men I ever knew, best illustrated the virtues of the middle course in life so exquisitely voiced by Horace. He was of medium height and of medium weight. He had strongly chisled features, the English clear complexion, kindly blue eyes, lips red as a cherry and ruddy brown hair and beard, luxuriant and but slightly gray at the time of his death.

I made his acquaintance in his late fifties. At seventy he was broader in his culture and more unerring in his judgment. In his eighties his intellectual preceptions were just as clear and his sympathies more comprehensive. At ninety his interests were broad and deep and his mind active and vigorous. He never became garrulous or senile and to the end he was responsive and most companionable.

Dr. Mercer had an inquiring mind capable of accurate if not rapid observations, and he had perfect intellectual poise. He was never enthusiastic, but he had a deep and abiding interest in every subject worthy a man's thought and action. His industry was indefatigable and was always guided by sound judgment. He was by nature temperate in all things and was never tempted to excess of any kind, even of work. It was but natural that such a man should accumulate a treasure house of knowledge and should mature judgments that were wound and increasingly convincing. He grew in knowledge and in wisdom all the days of his long life.

Thus as a student of medicine he instinctively attached himself to the ablest man of the period in his vicinity, and selected the Geneva Medical College, then one of the strongest medical schools in the country, in which to prosecute his medical studies. He took advantage in visits to his parents in England to supplement his preceptorial and lecture courses by "walking the wards" of hospitals in London and in Paris.

In practice he was painstaking and deservedly successful. He attended his first thousand cases of labor without losing a mother or a child. He performed many of the

major surgical operations before the days of anæsthesia and of asepsis with great skill and with nearly, if not quite, as successful results as are attained today.

He was one of the first reformers of medical education in the United States. When the Geneva Medical School was about to be taken over as the Medical Department of Syracuse University in 1872, it was he who voiced this sentiment: "We want not more medical school, but better." He was foremost in advocating a graded course of three years of eight months each, and this was made compulsory in the Syracuse Medical College in 1874. He was never reconciled to the demonstrating hospital clinic. He felt that students wasted valuable time in attending operating surgical clinics and clinical lectures when they might be studying at first hand the conditions demanding treatment. He felt that the preceptional method was better than this. Thus he was an earnest supporter of the plan to extend the laboratory method of clinical instruction into the hospital wards to groups of students under an instructor.

He was quick to take advantage of the latest improvements for medical and surgical diagnosis and treatment. It was he who in this vicinity used first and taught to others the use of the compound microscope in clinical as well as in pathological work.

He saw very early the relation of public sanitary conditions to the health of individuals in the community. His investigations in sanitation and preventive medicine were thorough and continuous and he became an authority on public health matters in city and in state. He was health officer of the city of Syracuse for six terms, President of the Syracuse Board of Health from 1882 to 1889 and member of the State Board of Health from 1884 to 1889. No one had a broader conception of this most important subject, and no one had more minute knowledge of all the details involved in preserving the health of the people. He wrote and spoke often and vigorously and convincingly on various questions of public health. He was the first professor of state medicine in the Medical School, having preferred this chair to that of minor surgery which he had held from the opening of the school. Down to within a few days of his death he was a visitor to the laboratories and bureaus of public health of the city and county. His advice was frequently sought, and always heeded, in the most important problems that came before the health authorities.

He early learned the withering effect of dogma, and was one of the earnest advocates of intellectual and spiritual liberty of thought. With the advent of dogmatic schools of medicine of various names, it was he who advocated the fundamental principle of requiring from all who would dare treat the ills of the body a common educational qualification, and the admission of all men so qualified to association in recognized medical societies.

Dr. Mercer's profoundest interest was in the development of medical science. He was a wide reader of all the advances published in English. His library is a treasure house and is eminent for the wisdom exhibited in its selection, both as an exponent of the history of medicine and as a reflection of all the best contributions of the more recent results of laboratory research. He was repeatedly honored by his confreres, not only by selection as President of the Syracuse Medical Socity, the Onondaga Medical Society, the Syracuse Academy of Medicine, and as first vice-president of the New York State Medical Society, but by frequent requests to present addresses historical or scientific at anniversaries of societies or of the college.

But Dr. Mercer was not narrow. His interests outside of his chosen profession were many and various, how various only those most intimate with him can judge. He has given a most significant reflection of his great interest in the cause of freedom and in the cause of child welfare in two clauses in his will. The first bequeathes a sum to be set aside for the occasional observation of the rescue of a runaway slave, "To keep green in memory the heroism of the men who rescued Jerry—men who could not look on a slave." Human slavery is dead throughout the entire civilized world. Human beings had long ceased to be chattels when this clause was penned. Is it not clear that Dr. Mercer when he made this bequest had in his mind the whole broad conception of what freedom is, freedom of mind, freedom of religious opinion, freedom of spirit, as well as freedom of body?

How clear his preception of what is the greatest good in the world is disclosed in the clause of his will commencing thus: "There is one true charity, providing for helpless children," and then follows a bequest to the Onondaga Orphans' Home. He devoted his life to repairing and bolstering up poor, worn, broken bodies, but he saw clearly that the hope of the world is in noble manhood and womanhood which he longed to help "helpless children" to attain.

I suppose it is possible that a man may be industrious, and accurate, and even generous, and yet lack that which we denominate character, that subtle something emanating from a man wherever he is, whatever he may be doing. I never came into Dr. Mercer's presence in his office, in his home, in the college, or in medical meetings but what I was conscious of being near one who radiated truth and justice and fraternal love. Emerson said in one of his essays: "That is what we call character—a reserve force which acts directly

by its presence, and without means. It is conceived of as a certain indemonstrable force, a Familiar or Genius by whose impulses a man is guided but whose counsels he can not impart; which is company for him, so that such men are often solitary, or if they chance to be social, do not need society, but can entertain themselves very well alone."

To the average individual the glorification of the man of superior physical and intellectual endowment who realizes his possibilities not only is not inspirational, but is distinctly disheartening. But here is a man whose life is a positive inspiration to every one of us. He had no extraordinary gift either of body or of mind, but he had perfect self-control. He ordered his daily living with judgment, not with caprice. He weighed the value of things, and developed the keenest preception of the relative importance of even the minor things in life. He cultivated method, and might have been the one who inspired the present movement for efficiency. He was industrious, and did not allow himself to waste a moment. He cared for his body with intelligence by correct habits of eating and by observing a due proportion between work and relaxation. He looked ahead and kept his knowledge up to the minute. How much of this was due to inherited balance and how much to personal effort I doubt if any man can tell. But see the result of such a method of life: He grew, year by year, to the very last. His accomplishments accumulated and the total is so vast that we stand in admiration of their extent and of their value. It is good that he lived amongst us and that we can take heart from the lesson of his life.

"I hold it truth with him who sings
To one clear harp with diverse tones,
That men may rise on stepping stones
Of their dead selves to higher things."

NOTES FROM THE STATE DEPARTMENT OF HEALTH

From small beginnings the Laboratory has become an essential factor in all medical work, and this change has come about within two decades. Out of early research and investigation practical methods have now been evolved which constitute an evergrowing routine of almost independent scope and purpose. Yet in no instance can routine laboratory work be divorced from research and investigation. These two phases of laboratory work must be cultivated hand in hand in order to attain the highest standards of efficiency and usefulness.

The State Laboratory at Albany has developed three distinct fields of work—the examination of public water supplies; the examination and diagnosis of specimens from cases of diphtheria, tuberculosis, and typhoid fever; the preparation and distribution of the antitoxins of diphtheria and tetanus, of typhoid vaccine and of silver nitrate solution for the treatment of ophthalmia neonatorum.

All phases of this work have recently undergone complete revision. The routine examination of public water supplies without careful inspection of the sources of these waters has been discontinued, in order that health officers and sanitary supervisors throughout the state may make careful inspections of their water supplies, and so lend to the laboratory examinations a significance hitherto impossible because the laboratory analysis simply determines the presence or absence of pollution; whereas the inspection at the source determines the nature of the pollution, and thus the significance of its presence or absence.

It is scarcely necessary to discuss the details of the technical procedures which have been adopted in the reorganization of the preparation of antitoxin in the laboratory, but it is gratifying to note that the results of these methods have already yielded an antitoxin which is purer and more potent than that produced in the past.

The demand for typhoid vaccine has grown rapidly, and there has been some difficulty in supplying the needs of physicians.

The new outfit for distributing silver nitrate solution has now completely supplanted the old form. It has given most satisfactory results.

The diagnostic work has also been greatly improved by the introduction of new information blanks and by collecting the mail at intervals during both day and night. Since the reports of the positive primary cultures, which have not been definitely diagnosed, have been sent by telegraph, considerable time has been saved in properly caring for diphtheria cases.

A special study of the accuracy of the methods used in the laboratory for the diagnosis of diphtheria has given most interesting and significant results. Taken in conjunction with the history of the case, the morphological diagnosis is reasonably accurate. The final differentiation of the bacilli of this group, however, requires a most extended study if final results are to be secured.

The examination of sputum for the tubercle bacillus is most satisfactory when these organisms are found, and physicians ought to take advantage of this opportunity of making an early diagnosis in tuberculosis.

The diagnostic work has recently been extended to the isolation of the bacillus typhosus from the stools of convalescent cases, or persons suspected of being "carriers" of this disease. The results of these examinations ought to help physicians to distinguish among their convalescent cases persons liable to harbor the bacillus typhosus and become "carriers."

Many special examinations have recently been made in the laboratory and much miscellaneous material has been accepted for examination. Unfortunately the results of these examinations are not always as satisfactory as might be desired on account of the difficulty in securing proper specimens, but occasionally results of practical value are obtained. This work requires a large staff and proportionately much more time than an established routine.

The most important field of laboratory work which the State Laboratory has not hitherto undertaken is the serum diagnosis of syphilis, generally known as the Wassermann reaction. This is now essential, not only in the diagnosis of the disease, but as a means of determining the effect and progress of the treatment. This work Dr. Biggs has authorized to be carried on as a special investigation until the legislature can appropriate funds for it to be carried on permanently. After this is once established physicians qualified to collect specimens of blood can procure outfits for mailing these specimens by filing the name, address, and diagnosis of the patient.

A. B. Wadsworth, M.D.,
Director, Division of Laboratories and Research.

"A COMPARISON OF THE WORKMEN'S COMPENSATION FEE BILLS OF NEW YORK AND OHIO."

The following was received from a reader with the request that it be published:

WORKMEN'S COMPENSATION FEE BILL.

	State of Ohio.	*State of New York.*
Fractures—Reducing and First Dressing.		
Femur	$25.00	$30.00
Patella	15.00	30.00
Tibia, fibula or both.	12.50	20.00—25.00 both bone
Clavicle	12.50	15.00
Scapula	15.00	20.00
Radius, ulna or both.	10.00	
Jaw	10.00	20.00
Humerus	15.00	
Nasal bones	5.00	10.00
Ribs	5.00	10.00
Finger or toe	5.00	5.00 (finger) 10.00—(toes) 1 or more
Amputations and First Dressings.		
At thigh	$50.00	$50.00
At shoulder joint	50.00	55.00
At knee	30.00	50.00
Of arm	25.00	40.00
Of both hands	25.00	
Of either hand	15.00	40.00
Of forearm	22.50	40.00
Of leg	22.50	40.00
Of foot	20.00	50.00
Through meta carpus or tarsus	15.00	20.00—2 or more 25.00
Of one finger or toe.	5.00	15.00
Of each additional finger or toe	2.50	
Dislocation—Reducing and Dressing.		
Hip	$15.00	$25.00
Shoulder joint	15.00	15.00
Wrist	8.00	10.00
Elbow	8.00	10.00
Finger or toe	2.50	5.00—1 or more toes 3.50—1 or more fingers
Ankle	8.00	20.00
Lower jaw	5.00	5.00

THE ROOSEVELT HOSPITAL.

October 26, 1914.

DR. JOHN COWELL MACEVITT,
Editor, NEW YORK STATE JOURNAL OF MEDICINE.

The enclosed literature in relation to Workmen's Compensation cases answer these question in your letter of recent date:

DEAR SIR:—Mr. ..... whose address is given as ..... has been admitted to this hospital suffering from an injury said to have been sustained while in your service.

From his statement, the case appears to be one that comes under the provision of the Workmen's Compensation Law and unless I hear from you to the contrary, you will be charged for the cost of his care at the rate of two dollars and twenty-five cents ($2.25) per day for each calendar day or any part thereof during his stay in our wards. This charge does not include X-rays, special appliances, serums, antitoxins, etc., which may be necessary for the proper treatment of the case.

A bill will also be rendered by the physician in charge of the case for professional services in accordance with a schedule of rates governing these cases.

Respectfully yours,

Date of admission.
Apparent injury.

DEAR SIR:—The patient named below has applied to this hospital for treatment for an injury said to have been sustained while in your service. From his statement, the case appears to be one that comes within the provisions of the "Workmen's Compensation Law."

Unless I hear from you to the contrary, you will be charged for the cost of his care at the rate of two dollars by the hospital for the first visit, and one dollar by the physician for each subsequent visit. These charges do not include X-rays, special appliances, serums, antitoxins, etc., which may be necessary for the proper treatment of the case.

Respectfully yours,

Name of patient.
Apparent injury.
Date of first treatment.

FORM OF BILLS RENDERED.

Emergency Department.

For first treatment in case of..... $2.00
Sundries .....
.....

Rendered under the "Workmen's Compensation Law."

This does not include the physician's services for which a separate bill will be rendered by him at the rate of $1.00 for each subsequent visit made by the patient.

DOCTOR'S BILL.

For professional services rendered in the case of ..... under the "Workmen's Compensation Law."

.....visits .....at $1.00 .....

Please mail check in payment of this bill to Superintendent, The Roosevelt Hospital, Fifty-ninth Street, West.

This bill is rendered by the physician who treated the case for professional services only, and does not include any charges that may be due the hospital.

HOSPITAL'S BILL.

For hospital care, board and sundries, exclusive of physician's services, under the "Workmen's Compensation Law."

In the Case of.....
Board.....days—from.....to.....at $2.25 per day ..... $.....
Sundries ....

This does not include the physician's services for which a separate bill will be rendered by him, in accordance with a schedule governing these cases.

USED ON BILLS WHEN ONLY ONE VISIT IS MADE.

"Unless this patient returns for further treatment, there will be no charge for physicians' services."

September 15, 1914.

ROBERT W. HEBBERD, Esq.,
Secretary, State Board of Charities.

DEAR SIR:—At at meeting of representatives of several of the larger hospitals of this city (called at the suggestion of Dr. Loughran of the Workmen's Compensation Commission), the following plan was outlined as a basis upon which treatment and care would be furnished cases coming under the Workmen's Compensation Law, whose employers were insured by the state or corporation engaged in this work.

For all minor cases not requiring ward care, the hospital, to cover the cost of this care, will make an initial charge of $2.00. This charge will cover the first visit only. The physician attending the case will be permitted to make a charge of $1.00 for each subsequent visit for professional services.

All ward cases will be charged by the hospital $2.25 per day to cover cost, and the attending physician will be permitted to charge for his services in accordance with a schedule compiled by the insurance companies and which, I think, is pretty generally accepted by the medical profession.

As most of the cases treated at this hospital will be of a minor nature and will be brought to the Emergency Department, or the Out-Patient Department, I write to ask if these charges will conflict with your rules governing dispensaries.

(Signed) Chas. B. Grimshaw,
Superintendent, Roosevelt Hospital.

September 17, 1914.

Mr. Charles B. Grimshaw,

Superintendent, The Roosevelt Hospital.

Dear Sir:—In answer to your letter of the 15th inst., with regard to the agreement entered into by the hospital representatives with relation to charges under the Workmen s Compensation Law, permit me to say that there does not seem to be anything therein which would interfere with the Board's rules governing dispensaries. (Signed) Robert W. Hebberd,
Secretary, State Board of Charities.

CORRESPONDENCE

October 17, 1914.

Dr. John Cowell MacEvitt,

Editor, New York State Journal of Medicine.

After a careful reading of Dr. Charles A. Rosenwasser's letter in the October issue of the New York State Journal of Medicine, I cannot help feeling that he is taking rather a limited view of the Towns Hospital matter.

At the outset I wish to state that I do not know either Dr. Lambert or Mr. Towns, and have never sent a patient to the hospital. Hence my position is decidedly neutral.

It seems beside the question for medical men to discuss violation of the statute in this instance. That is a question to be decided entirely by "the might and majesty of the law" whatever our personal opinions may be. However, there is reason to believe that the law was not framed with the object of preventing private sanitariums and hospitals from receiving, harboring, maintaining and administering to the care and comfort of invalids whatever the disease. If the law were so framed, then some of the best and largest institutions in New York City will have to close their doors.

At Battle Creek, Mich., a great hospital, founded by laymen, is now being maintained on a philanthropic basis—that is, patients able to pay for services rendered are charged accordingly, those unable to pay are treated free. Physicians work on salaries and charge fees according to arrangements with the sanitarium. The work done is of a high order and commands the respect of everyone, physicians and patients alike. Doctors, who themselves enter its doors as patients, are not charged. To be sure this hospital is in Michigan, not in New York State, but the principle is the same.

The Towns Hospital is, I understand, conducted along similiar lines—many of its patients have been unfortunates from our own beloved profession. All praise the benefits they have derived from the discipline and treatment accorded them.

Results count. Individuals and personalities are secondary. In our bickerings about ethics, well-intentioned as we are, the patient is sometimes lost sight of. If he is cured of his malady what difference does it make who effected this consummation. One law only applies both to institutions and physicians—to treat all seekers after aid with dignity, respect, humaneness and diligence. Then when the patient is cured to exact a "reasonable" renumeration for this effort. In Dr. Henry Van Dyke's *Legend of Service,* this noble altruism is beautifully described.

If the Towns Hospital is doing a worthy, an honorable, an efficient service, as I am led to believe, what difference does it make whether its kernel of efficiency lies in the brain of a layman or of a physician? There is enough work in the world for all of us to do and we ought to join hands in the doing of it.

Personally I cannot see how Dr. Lambert is going to injure the public or the profession by allying himself with the enemies of the drug terror.

Irving Wilson Voorhees.

October 24, 1914.

Dr. John Cowell MacEvitt,

Editor, New York State Journal of Medicine.

Dear Sir:—The letter of Dr. Rosenwasser's which appeared in the September number of your Journal requires an answer. His premises are so inaccurate that his conclusions are necessarily false. In the first place Dr. Rosenwasser quotes the following portion of the charter of the Charles B. Towns Hospital as follows:

"To erect, establish or maintain in the State of New York or elsewhere a private hospital, infirmary, dispensary or sanitarium, in which institution persons duly authorized or licensed by law to practice medicine may treat people suffering from physical iilness, ailments or injury, and also persons addicted to or suffering from the use of morphine, cocaine, opium or any other narcotic, or from alcohol or alcoholic liquor, upon such terms and conditions for the use of the accommodations, conveniences and facilities as shall be mutually satisfactory to the said institution and the physician and patient in each particular case, provided, however, that nothing herein contained shall be construed to authorize said institution to practice medicine nor to make any arrangement in violation of the laws governing and relating to the practice of medicine.'

This is a garbled quotation of the real wording of the certificate of incorporation, for Dr. Rossenwasser has stopped in the middle of a sentence and gives an absolutely wrong meaning to the whole sentence. The accurate quotation is as follows:

"To erect, establish or maintain, in the State of New York or elsewhere, a private hospital, infirmary, dispensary or sanitarium, in which institution persons duly authorized or licensed by law to practice medicine may treat persons suffering from physical illness, ailments, or injury, and also persons addicted to or suffering from the use of morphine, cocaine, opium, or any other narcotic, or from alcohol or alcoholic liquor; upon such terms and conditions for the use of the accommodations, conveniences and facilities of such institution as shall be mutually satisfactory to the said institution, and the physician and patient in each particular case; provided, however, that nothing herein contained shall be construed to authorize said institution to practice medicine, nor to make any arrangement in violation of the laws governing and relating to the practice of medicine, or the erection and maintenance of public hospitals in the state or country wherein the hospital, infirmary, dispensary or sanitarium herein provided for shall be erected, established or maintained."

It is very evident that the difference between the garbled quotation and the accurate one, is that in Dr. Rosenwasser's letter it is made to appear that the Towns Hospital has no right to treat patients as a hospital, nor to charge a fee for so doing, whereas, as a matter of fact, the certificate of incorporation gives the right to the corporation of the Charles B. Towns Hospital to establish a hospital in New York State, legally to practice medicine as a hospital, and as distinguished from charitable hospitals to charge fees for its services in every case; and it gives it further power to establish hospitals wherever else it pleases, provided that it shall practice medicine and act as a hospital in accordance with the laws of each locality in which it may found a hospital.

Dr. Rosenwasser's further contention is that even if the Charles B. Towns Hospital has been incorporated by the State of New York, the State of New York has no right to incorporate such a hospital under the Business Corporation Laws. All these are matters of law, and after consulting eminent legal counsel, I am duly in-

formed that hospitals founded only for philanthropy, not being permitted to charge fees for the care of patients, must be chartered under the Membership Corporation Law, but hospitals charging fees for the business of performing their functions and caring for patients must be incorporated under the Business Corporations Law. This latter law as finally amended and existing in force at the time of the incorporation of the Charles B. Towns Hospital is as follows:

"Laws of 1909, Chapter 484. An Act to Amend the Business Corporations Law, in relation to the incorporation of companies for practicing law. In effect May 25, 1909.

Section 2. Incorporation.—Except as provided in section 2a of this chapter, three or more persons may become a stock corporation for any lawful business purpose or purposes other than a moneyed corporation, or a corporation provided for by the banking, the insurance, the railroad and the transportation corporation law, or an educational institution or corporation which may be incorporated as provided in the education law, by making, signing, acknowledging and filing a certificate which shall contain: * * * '

I am further informed by counsel that section 2a referred to in this final amendment, prohibits incorporation for the business of practicing law. It is evident that hospitals are not in the exceptions under this law, and as they are not excepted from being incorporated by this law, they may be incorporated. Hence hospitals may be incorporated under the Business Corporations Law. The incorporation, therefore, of the Charles B. Towns Hospital is duly permitted by the laws of the State of New York, and the statement of Dr. Rosenwasser that the Charles B. Towns Hospital is not legally incorporated is contrary to fact.

The opinion quoted by Dr. Rosenwasser of Attorney-General O'Malley, given from the Attorney-General's office on June 8, 1909, some eight months before the incorporation of the Towns Hospital, has no value in law. It is only the opinion of a gentleman who occupied the Attorney-General's office, or some of the subordinates in his office to whose opinion he subscribed his name. Compared with the decision of the Appellate Division of the Supreme Court, and the decision of the Court of Appeals itself, its legal value is nil. The Appellate Division has decided in the case of People v. Woodbury Dermatological Institute as follows. Judge Laughlin, delivering the majority opinion for the Appellate Division, says:

"Strictly speaking, of course, a corporation can neither qualify to practice medicine nor administer medical or surgical aid. * * * As I view it, the only theory upon which this prohibition can be deemed to extend to corporations is that the Legislature recognized that while corporations may not obtain diplomas and register as physicians or actually treat patients, they may, through agents and employees, as all corporations are obliged to perform their functions, practice medicine by providing accommodations for patients and facilities for their care and treatment and physicians and surgeons to administer to them. This is and for many years has been done in hospitals, dispensaries, infirmaries and sanitariums with which the Legislature is presumed to have been familiar. Were the corporation authorized to receive, and by the aid of physicians and surgeons to treat patients, and by the aid of nurses and other employees to properly care for them, I am of opinion that they come within the exception contained in section 1 of the Statutory Construction Law, and are neither prohibited from practicing medicine, in that sense, nor from advertising such practice. Although, therefore, in a technical sense, a corporation cannot practice medicine, yet, if it be authorized to provide suitable accommodations for the care and treatment of the sick and to receive patients, and to employ physicians and surgeons to treat them, this law should not be construed as prohibiting it from advertising that which it is thus authorized to do."

The Court, after discussing certain other sections of the laws, continued as follows:

"I limit my opinion to the proposition that any corporation lawfully authorized to receive and care for individuals requiring medical or surgical treatment, to provide proper treatment for them either gratuitously or for hire, may advertise its business without subjecting itself to liability for a violation of the statute in question and that it is quite immaterial whether it advertises that it prescribes for and treats the patients or that this is done by its employees."

The Court of Appeals, passing upon the same Woodbury case, unanimously agreed to the following opinion written by Judge Willard Bartlett:

"The only difficulty involved in the adoption of this view grows out of the existence of *hospitals, dispensaries and similar corporate institutions which are unquestionably authorized by law to practice medicine*—although, of course, only through the agency of natural persons who are duly registered as physicians. * * * In reference, however, to hospitals and dispensaries it could hardly have been the intention of the legislature in the Act of 1907 to prohibit such corporations from advertising to do what they might do lawfully—that is to say, from advertising to practice medicine; yet it is argued that if we hold that the Act of 1907 makes it a misdemeanor for any corporation (making the term 'person' embrace a corporation) to advertise to practice medicine, we must also hold that incorporated hospitals and dispensaries fall within the prohibition. If this were the necessary result of the construction adopted in the courts below I think it would furnish a strong reason for rejecting that construction. It seems to me, however, that we can affirm this judgment *without in any wise denying the lawful right of hospitals. dispensaries and similar corporate institutions to advertise their readiness to exercise their lawful functions;* and this simply for the reason that the general medical law of 1907 is obviously not intended to apply to the case of such corporations at all. In other words, the prohibitions therein contained against the practice of medicine without lawful registration in this state or in violation of any of the provisions of the statute or against advertising by any person not a registered physician *were not intended to apply and plainly could not reasonably be held to apply to corporate bodies which by the express provisions of other statutes are authorized to carry on the practice of medicine upon compliance with their provisions and without registration.*" (Italics mine.)

These quotations make it clear that the Charles B. Towns Hospital is duly incorporated by the laws of the State of New York, that it was incorporated as the Charles B. Towns *Hospital,* that by its incorporation it has the right to care for patients and to employ and pay physicians to treat these patients, and to charge and collect a fee from patients for such services. That as a corporation, incorporated as a hospital and for the purposes of a hospital, in accordance with the decision of the Court of Appeals, which is the final arbiter and interpreter of the laws in New York State, it has unquestionably a right to carry on the practice of medicine and otherwise to carry out its legal functions by means of duly registered physicians employed for that purpose, and to advertise that it is so doing.

Dr. Rosenwasser sees fit, further, to criticize me for permitting my name to be used as one of the consultants of the Charles B. Towns Hospital. When I permitted my name to be used in this manner by this hospital it was the only hospital in New York in which I believed that a definite, known method of treatment was being carried on to unpoison efficaciously the alcoholic and drug addict. It was using a method that was known to all men, for I myself had published it, and there was nothing secret or hid in its method of treatment. It was being run in a strictly business, reputable manner, and there was a crying need—and had been for years—for just such a hospital in this city. True it is that because I have added my name to its consultants I have been severely criticized, because it was the first time in New York, in this genera-

tion, that a group of reputable physicians could connect their names in an honorable and ethical manner with a hospital treating exclusively alcoholism and drug habits, using an open, ethical and reputable treatment, and not secret remedies. Heretofore, as Dr. Rosenwasser well knows, the treatment of alcoholics and drug habitues had been mainly in the hands of quacks and charlatans using secret remedies and exploiting these unfortunates. There is no reason in law or ethics why any reputable physician should not be connected with the Charles B. Towns Hospital. Dr. Rosenwasser's letter was unfortunately based on ignorance of the law, supported by misquotation of existing documents, hence his conclusions are necessarily wrong and contrary to fact.

I deem any further correspondence on this subject unnecessary as far as I am concerned.

Respectfully yours,

ALEXANDER LAMBERT.

Medical Society of the State of New York

FIRST DISTRICT BRANCH.

ANNUAL MEETING, AT NEW YORK, OCTOBER 8, 1914.

Meeting was called to order at 11.30 A. M. by the President, Henry Lyle Winter, M.D., of Cornwall.

The minutes of the last meeting were read and approved as read.

Dr. Townsend moved that the Chair appoint a Nominating Committee to suggest candidates for office for the coming year. The motion being carried, the President appointed Drs. Walter Lester Carr, W. Hasbrouck Snyder and John C. Otis.

Dr. Carr moved the new By-Laws be read and received by the Society.

Dr. Townsend moved that as the new By-Laws can not be adopted until the next annual meeting that the reading be omitted and that they be received as presented and laid over until the next annual meeting. A copy to be sent to each member of the branch in advance of that meeting. Carried.

President's address, "Late Cerebral Spinal Manifestations of Inherited Syphilis," Henry Lyle Winter, M.D., Cornwall.

"Obscure Causes of Disease," W. Stanton Gleason, M.D., Newburgh. Discussion by Drs. Kerley, Crandall, Toms and Goodwin.

After luncheon the Nominating Committee reported the following candidates:—For President, James E. Sadlier, Poughkeepsie; Vice-President, Floyd M. Crandall, New York; Secretary, Charles E. Denison, New York; Treasurer, George A. Leitner, Piermont. On motion the Secretary was instructed to cast an affirmation vote for the ticket as presented.

Address by the President of the State Society, Grover W. Wende, M.D., of Buffalo, on "The Medical Society of the State of New York."

"Toxic Diseases of the Nervous System," by Edward D. Fisher, M.D., New York. Discussion by Dr. Neustaedter.

"Practical Clinical Demonstration of Early Diagnosis of Pulmonary Tuberculosis," S. Adolphus Knopf, M.D., New York.

"The Treatment of Malignancy by Physical Methods With and Without Surgery," Arthur F. Holding, M.D., New York. Discussion by Drs. MacKee and Mallett.

"Presentation of Dermatologic and Syphilitic Cases of Unusual Interest," Mihran B. Parounagian, M.D., New York.

"Puerperal Pyemia: Report of a Case," Edward C. Thompson, Newburgh.

Dr. Goodwin moved that a vote of thanks be extended to the President of the Hotel Martinique, Mr. Charles L. Laylor, for the gratuitous use of the rooms occupied by the First District Branch, at this Eighth Annual Meeting. Carried unanimously.

SECOND DISTRICT BRANCH.

ANNUAL MEETING, AT MINEOLA, OCTOBER 27, 1914.

At the business meeting the following officers were re-elected:—President, James S. Cooley; Vice-President, Arthur H. Terry; Secretary and Treasurer, Charles Eastmond.

The uniform By-Laws prepared by the special committee were presented and laid over for action at the next annual meeting.

The meeting was opened by an address by the President, James S. Cooley, M.D., which was followed by:

"The Changes Which are Apparently Indicated in Our System of Private Medical Practice, Judged from the Viewpoint of the Health Officer, Educator and Sociologist,' Walter S. Cornell, M.D., Director of Medical Inspection of Public Schools, Philadelphia, Pa.

"Medical Inspection of Schools—Interlocking Benefits Thereof," Charles A. Steurer, M.D., Medical Inspector of Schools, Port Washington, L. I.

The Care of the Abdomen in Infancy and Early Childhood," Eliza Mosher, M.D., Brooklyn.

Discussion opened by Frank Overton, M.D., Patchogue.

Preceding the meeting a dinner was given by the Queens-Nassau Medical Society which was greatly enjoyed by all present.

THIRD DISTRICT BRANCH.

ANNUAL MEETING, AT ALBANY, SEPTEMBER 15, 1914.

Meeting of the House of Delegates was held at the Albany Hospital, at 12.30 P. M. Present:—Albany County, Drs. B. V. O'Leary, Geo. W. Papen, Jr., Jerome Meyers; Uister County, Dr. Frank L. Eastman; Columbia County, Dr. R. C. Waterbury, together with the President and Secretary, *ex-officio*.

The meeting was called to order by President, Dr. Robert Selden.

Minutes of the previous meeting were read and approved.

The minutes of the Executive Committee meeting held on May 21, 1914, were then read and approved.

The election of officers was then declared in order and Dr. A. H. Traver, of Albany, was nominated for President, by Dr. Waterbury; the nomination was seconded, and a motion was made by Dr. O'Leary and seconded that the nomination be closed, and that the Secretary cast one ballot for Dr. Traver for President for the ensuing two years. Motion carried and Secretary announced that the ballot had been so cast.

For Vice-President, Dr. S. V. Whitbeck, of Hudson, was placed in nomination, and there being no further nominations it was moved, seconded and carried that the Secretary cast one ballot for Dr. Whitbeck for Vice-President for the ensuing year. The ballot was so cast.

For Secretary, Dr. R. C. Waterbury, of Kinderhook, was placed in nomination and seconded for Secretary for the ensuing year. There being no further nominations it was moved, seconded and carried that the Secretary cast one ballot for Dr. Waterbury. The ballot was so cast.

For Treasurer, Dr. Mary Gage-Day, of Kingston, was placed in nomination and seconded for Treasurer for the ensuing year. There being no further nominations it was moved, seconded and carried that the Secretary cast one ballot for Dr. Gage-Day. The ballot was so cast.

Under the head of "unfinished business" attention was called to the fact that there was an amendment to Section 3, Chapter 2 of the By-Laws which had been introduced in 1911, but had not been acted upon in 1912 or 1913. It was moved and carried that this amendment be laid on the table; the Secretary then read a communication from the Secretary of the Medical Society of the State of New York suggesting that the by-laws of the Third District Branch be changed

to conform to a set of by-laws which were to be presented to all the other District Branches for adoption.

The House of Delegates received this communication, and according to the by-laws the adoption of this new set of by-laws will come up for final action at the next meeting of the House of Delegates, at Hudson, in 1915, after due notice has been sent to each member.

The House of Delegates then adjourned to reconvene with the members of the District Branch at 2.15 when the President's address was presented by Dr. Robert Seldon, followed by the scientific session.

"Appendicitis," John H. Gutmann, M.D., Albany.

"Conception of Hay Fever as an Anaphylactic Reaction, Its Treatment by Active Immunization," Robert A. Cooke, M.D., New York.

"Present Attitude Regarding Certain Drugs Used in Heart Affections," Edwin H. Shepard, M.D., Syracuse.

"What is the Responsibility of the General Practitioner to his Patient who has Obstructive Prostatic Hypertrophy?" Paul M. Pilcher, M.D., Brooklyn.

"Tetanus, with Report of Two Recoveries," Alexander A. Stern, M.D., Kingston.

"Carcinoma of the Breast," John B. Harvie, M.D., Troy.

"Constipation: Its Diagnosis and Treatment," Jerome Meyers, M.D., Albany.

"Goitre: From the Medical and From the Surgical View," Charles P. McCabe, M.D., Greenville, and John L. Loutfian, M.D., Coxsackie.

Before adjournment the Secretary presented to the members of the Society the list of officers, and it was moved and carried by the members present that the officers as suggested by the House of Delegates be elected for the ensuing year.

It was moved and carried that the next annual meeting be held at Hudson, N. Y., the date to be fixed by the Executive Committee of the District Branch.

During the morning an interesting session of medical and surgical clinics was held at the Albany Hospital, and resolutions of thanks to the Medical Society of the County of Albany were passed for its cordial co-operation in the meeting of this District Branch.

FOURTH DISTRICT BRANCH.

Annual Meeting, at Gloversville, October 13, 1914.

The meeting, which was the largest ever held by the branch and surpassed all the previous meetings in the value of the papers, was called to order by the President, Dr. George Lenz, who delivered an address of welcome to the members present. Mr. Seymour A. Casler, President of the Eccentric Club, at which the meeting was held, gave an address welcoming the members to the city in behalf of the club.

Scientific Session.

Address—"The Sanitary Code in Its Relation to Physicians," Linsly Rudd Williams, M.D., deputy commissioner of health, Albany.

"Chronic Cystic Mastitis (Abnormal Involution of the Breast)," Parker Syms, M.D., New York.

"Trans-Urethral and Trans-Vesical Operations Upon the Bladder and Prostate," Charles H. Chetwood, M.D., New York.

"Psychoanalysis and Its Field of Usefulness," Charles Rocknell Payne, M.D., Westport.

"A Case of Osteitis Deformans," Albert Warren Ferris, M.D., Saratoga.

"Report of Case (Acute Myologenous Leukæmia)," Albert S. Fay, M.D., Warren B. Stone, M.D., Schnectady.

"Report of Case," Horace M. Hicks, M.D., Amsterdam.

The morning session closed with a luncheon served in the dining room of the club at which there were over one hundred present.

Business Session 2 P. M.

The following officers were elected for the coming year:—President, Julius G. Ransom; Vice-President, Lew H. Finch; Secretary, Frederic J. Resseguie; Treasurer, George H. Oliver.

The following amendments to the branch By-Laws presented at the last annual meeting were adopted:

Amend Chapter II, Section 2, relating to the election of officers, by striking out the words "by the duly elected delegates from the County Societies" at the end of the section. Section 2 will then read: The officers shall be elected by ballot at the annual meeting of the district branch.

In compliance with the State By-Laws the President was elected for two years.

The uniform By-Laws prepared for the district branches by the special committee of the Council were presented and laid over for action at the next meeting.

The place of next meeting was left to the Executive Committee.

Scientific Session 2.30 P. M.

Opening address by Abraham Jacobi, M.D., of New York City, who spoke on "Ancient and Modern Medical Education."

"The Value of the Study of the Umbilical Reflex in the Diagnosis of Typhoid Fever," Hermon C. Gordinier, M.D., Troy.

"The Reduction of Blood Pressure by the Removal of an Adrenal," Andrew MacFarlane, M.D., Albany.

"Some Phases of Cardia-Renal Disease from a Therapeutic Standpoint," Nishan A. Pashayan, M.D., Schenectady.

"State Health Work," Charles Samuel Prest, M.D., Waterford.

"Radium, Its True Therapeutic Value," Arthur F. Holding, M.D., New York.

"The Results of Artificial Pneumothorax Treatment in Advanced and for Advanced Pulmonary Tuberculosis," Charles C. Trembly, M.D., Saranac Lake.

"The Feeding of a Child After the Twelfth Month," Arthur Clesson Hagedorn, M.D., Gloversville.

"Some Causes of Feeding Failures," Frank vander Bogert, M.D., Schenectady.

FIFTH DISTRICT BRANCH.

Eighth Annual Meeting, Syracuse, October 1, 1914.

The meeting was called at 10.10 A. M. About 170 members were present.

Dr. Frederick H. Flaherty read the President's address. Adjournment was taken for luncheon at 1 P. M.

Meeting again called at 2.40 P. M. The election of officers took place which resulted as follows:—President, William D. Garlock, M.D., Little Falls, N. Y.; Vice-President, Harriet M. Doane, M.D., Fulton, N. Y.; Secretary, George B. Van Doren, M.D., Watertown, N. Y.; Treasurer, George B. Broad, M.D., Syracuse, N. Y.

After a short business meeting the literary program was again resumed.

The program was valuable and instructive.

Considerable interest was shown by the discussions.

SIXTH DISTRICT BRANCH.

Annual Meeting, at Norwich, October 6, 1914.

One hundred and twelve physicians, many with their wives, attended the meeting, which was held in the Masonic Temple and the Chenango County Medical Society showed themselves to be pleasant and agreeable hosts.

The meeting was called to order at 11.22 A. M. by Dr. Thomas F. Manley, President, in the chair. In welcoming the members present he thanked the eminent members of the profession who were present from outside the district to bring to the members the inspiration of their advice and counsel. Medicine is progressing, but there are still advances to be made and strides must be made against the forces that tend to obstruct the work of the scientific physician. Education is the only means to forward the work of the scientific medicine. It should be personal and it should be the duty of every physician to do all in his power to instruct aright his patients and those with whom he is thrown in contact.

Dr. Henry B. Doust, of Syracuse, presented a paper on "The Early Diagnosis of Pulmonary Tuberculosis.' Figures show that physicians are apt to be careless in their examination of patients unless they take every care not to neglect any possible means of diagnosis. The significant symptoms are cough, expectoration, hemoptysis, lack of usual strength, feeling of malaise, indefinite pains through the chest, progressive loss of weight. The pulse is apt to be more irregular and rapid than normal. Temperature changes are important if the temperature is followed throughout the 24 hours. Rapid pulse, evening rise in temperature, progressive loss of weight, and cough with or without expectoration are symptoms which should be explained away before the diagnosis of pulmonary tuberculosis can be excluded. The physical examination should be thorough and on the bared chest. The employment of the auscultatory cough is most helpful in diagnosis. Repeated sputum examinations should be made in any suspicious case.

The discussion on the paper of Dr. Doust was opened by Dr. W. D. Alsever, of Syracuse.

Dr. Linsly Williams, Deputy State Commissioner of Health, spoke regarding the sanitary code. He detailed the cases of communicable disease which are required to be reported and who shall report them. He noted changes made in quarantine regulations. He said that an earnest effort should be made by the individual physicians to prevent efforts to break down the medical practice act.

Dr. Paul B. Brooks, of Norwich, briefly discussed the remarks of Dr. Williams.

Dr. Miles Wendell Johns, of Utica, spoke of "Modern Roentgen Technic in the Treatment of Malignant Conditions." He said that recent advancement in technic consisted in (1) Measurement of the vacuum of the tube; (2) Measuring the amount of the ray acting upon the patient; (3) Filtering out the undesirable rays. The cases suitable for treatment are rodent ulcer, superficial cancerous growth, sarcoma. Deep roentgen therapy should be done only with filtering out the irritating short rays. Massive doses are superior to the fractional method of treatment.

Dr. Homer E. Smith, of Norwich, discussed the paper of Dr. Johns.

Dr. Wisner R. Townsend, Secretary of the State Medical Society, was called upon and in his usual happy manner congratulated the members upon their attendance. He appealed for a larger membership of the State Society. Only through united and concerted action can the practice of medicine be furthered.

Adjournment was then taken for dinner which was served most acceptably by the members of the Norwich Eastern Star Society.

During the intermission for dinner the house of delegates of the Sixth District Branch convened.

The meeting reconvened at 2.15 P. M.

Dr. John Joseph Nutt, of New York City, presented a paper on "Operations Which Permit of the Discarding of Apparatus in the Resulting Paralysis of Acute Anterior Poliomyelitis." He described the method of transplanting the tendon of the extensor longus pollicis to the cuniform bone for valgus deformities. Foot drop may be relieved, artificial tendons made of silk ligatures inserted. Securing the upper end of tendons of paralyzed muscles may take the place of ligaments. Photographs and drawings were shown demonstrating the stages of the operations and results following the treatment by various operations of tendon transplantation.

The paper of Dr. Nutt was discussed by Dr. Frederick M. Miller, of Binghamton; Dr. Wisner R. Townsend, of New York; Dr. Robert T. Morris, of New York City.

Dr. Warren Coleman, of New York City, presented a paper on "The Typhoid Diet." He asserted that the diet must be individualized for each patient. If the food causes disturbance of digestion it must be reduced, but most patients can take more food than have been usually given. A mixed diet is best and frequent change should be made of diet. Preference should be given to the carbohydrates. Every effort should be made to maintain the patient's nutrition. Cream and sugar of milk can be added to the diet without disturbance to raise the caloric value.

The paper of Dr. Coleman was discussed by Dr. Allen A. Jones, of Buffalo; Dr. H. J. Ball, of Cortland, and Dr. F. D. Reese, of Cortland.

Dr. Aaron B. Miller, of Syracuse, presented a paper on "Consideration of Uterine Fibroids." Hemorrhage is a frequent symptom and careful examination should be made to exclude the possibility of malignancy. Myomatous tumors may grow irregularly and by their growth cause serious menace to the life of the individual. He discussed the palliative and operative treatment with especial reference to the treatment of these cases by X-ray with gratifying results.

The paper of Dr. Miller was discussed by Dr. Robert T. Morris, of New York; Dr. F. D. Reese, of Cortland; Dr. Willis E. Ford, of Utica; Dr. Anna W. Marquis, of Norwich; Dr. John H. Burch, of Syracuse.

Dr. Robert T. Morris, of New York, presented a paper on "Remote Effects of Enterior Toxins." Many times the effects of enterior toxins are due to a process of sensatization of the body to that toxin. The bacterial process many times is the precipitating agent of disease process. Cultural limitations are reached many times by the influence of enteric bacteria. He also discussed methods of treatment of this condition.

The paper of Dr. Morris was discussed by Dr. Willis E. Ford, of Utica, and Dr. Warren Coleman, of New York.

Dr. Allen A. Jones, of Buffalo, presented a paper on "Gastroptosis and Enteroptsis." Radiography is the best means we have for diagnosing the size, position and action of the stomach. A well regulated rest treatment in bed with over feeding and massage is one of the best forms of treatment. Exercises to develop the abdominal muscles are also of assistance. Colon flushings are more valuable than cathartics. An abdominal support is of value when the patient gets up. Certain surgical procedures are of value, but a careful, well-regulated medical treatment should be tried before resorting to the surgeon's knife.

The paper of Dr. Jones was discussed by Dr. Morris and Dr. Coleman.

The motion was made, seconded and unanimously carried that we extend a hearty vote of thanks to the visiting physicians who delivered the papers and to the Chenango County Medical Society, and to the physicians of Norwich who had proved themselves such acceptable hosts.

On motion the meeting was declared adjourned.

Many of the visiting physicians with their wives accepted the invitation of Dr. Reuben Jeffrey to remain for the evening and spend it as his guests at his elegant country home about two miles outside the city of Norwich.

The House of Delegates met at 1 P. M., with Dr. Thomas Manley, President, in the chair.

The following officers were present:—Drs. Thomas F. Manley, President; Arthur W. Booth, Vice-President; R. P. Higgins, Secretary. The following dele-

gates answered to their names:—Drs. Frederick M. Miller, Binghamton; A. J. Bowman, Horseheads; A. C. Knapp, Cortland; B. R. Wakeman, Hornell, and P. B. Brooks, Norwich.

The minutes of the last meeting had been printed and on motion were accepted as printed.

Dr. Townsend presented the matter of new uniform By-Laws for the various district branches.

Dr. Knapp moved that the amendment presented at the last meeting of the Sixth District Branch relative to the election of officers be passed. The motion was seconded and carried. This resolution was as follows:

Amend the By-Laws relating to the election of officers, Chapter II, Section 2, by striking out the words "By the duly elected delegates from the County Societies" at the end of the Section. The Section will then read "Section 2. The officers shall be elected by ballot at the annual meeting of the District Branch."

Uniform By-Laws proposed by the Council of the State Society were proposed, which By-Laws were to supersede the present By-Laws. These were laid on the table for action at the next meeting of the Sixth District Branch.

The invitation of the Chemung County Medical Society was accepted and the next annual meeting of the Sixth District Branch will be held at Elmira, on October 5, 1915.

The following officers were re-elected for the ensuing year:—President, Dr. Thomas F. Manley, of Norwich; Vice-President, Dr. Arthur W. Booth, of Elmira; Secretary and Treasurer, Dr. R. Paul Higgins, of Cortland.

SEVENTH DISTRICT BRANCH.

Annual Meeting, at Newark, September 22, 1914.

Meeting called to order at 11 A. M. by the President, Dr. W. T. Shanahan.

The President made a short address in which he advised all present to induce every worthy member of the profession to join the County, State and National Medical Societies.

The second paper by Dr. Grover W. Wende, President of the Medical Society of the State of New York, was not discussed.

"Prophylactic Treatment Against Scarlet Fever," Dr. Fred M. Meader, State Department of Health, Albany. Discussed by Dr. J. M. Swan, closed by Dr. Meader.

"Quarantine Fumigation and Disenfection in Contagious Disorders," Dr. Augustus A. Young, Newark. Discussed by Dr. W. A. Howe, State Board of Health.

"Cancer, a New Theory With a Hopeful Outlook," Dr. George W. Little, Rochester. No discussion.

"Blood Vessel Changes With Special Reference to Various Form of Autointoxications," Dr. Albert C. Snell, Rochester. Discussed by Drs. N. W. Soble and H. T. Williams, Rochester.

Adjournment for luncheon then followed.

Business Meeting.

Moved, seconded and carried that the reading of the minutes of the last meeting be suspended.

Moved, seconded and carried that an invitation to hold the next annual meeting at Geneva be accepted.

Moved, seconded and carried that Dr. W. T. Shanahan act as President for the ensuing year.

The vote was cast and Dr. Shanahan was declared elected.

Moved, seconded and carried that Dr. H. J. Knickerbocker act as Vice-President for the ensuing year. The vote was cast and Dr. Knickerbocker was declared elected.

Moved, seconded and carried that Dr. J. F. Myers act as Secretary for the ensuing year. The vote was cast and Dr. Myers was declared elected.

Moved, seconded and carried that Dr. M. A. Almy act as Treasurer for the ensuing year. The vote was cast and Dr. Almy was declared Treasurer for the ensuing year.

Dr. Shanahan then presented the uniform By-Laws prepared by the Special Committee of the State Society which will be acted upon at the next annual meeting.

A vote of thanks was rendered to Dr. Nevin for the fine entertainment given by him to the sixty doctors present.

Dr. W. B. Jones, Rochester, spoke about the good work done by Mr. Lewis, Counsel for the State Society.

"A Brief Review of the Rules and Diagnostic Procedures Applicable to the Diagnosis of Early Pulmonary Tuberculosis," Dr. Albert H. Garvin, Raybrook. No discussion.

"Syphilis and Nervous System," Dr. W. H. Montgomery, Willard. Discussed by Dr. S. W. Little, Rochester.

"The Management of Acute Perforations of the Stomach," Dr. Thomas Jameson, Rochester. No discussion.

"Further Report of a Case of Acromegally," Dr. Arthur I. Shaw, Sonyea. No discussion.

"Glandular Fever," Dr. Alfred W. Armstrong, Canandaigua. Questions were asked by Dr. Plum and others.

"Ectopic Pregnancy," Dr. Claude C. Lytle, Geneva. No discussion.

EIGHTH DISTRICT BRANCH.

Ninth Annual Meeting, at Niagara Falls, September 23 and 24, 1914.

Wednesday, September 23d.

Meeting called to order by the President, Dr. Arthur G. Bennett, at 2.20 P. M. On motion, the minutes of the last meeting were adopted as published in the Journal of the Medical Society of the State of New York.

The new By-Laws prepared by a special committee of the Medical Society of the State of New York were read and laid on the table to be acted upon next year.

The following officers were elected:—President, Carl G. Leo-Wolf, Buffalo, elected for term of two years; First Vice-President, Albert T. Lytle, Buffalo; Second Vice-President, Edward Torrey, Olean; Secretary, Edward A. Sharp, Buffalo; Treasurer, Charles A. Wall, Buffalo.

The scientific session followed the business meeting and the following papers were presented:

"President's Address, Arthur G. Bennett, M.D., F.A.C.S., Buffalo.

"Half a Century of Medicine and Surgery: A Retrospect," George E. Blackham, M.D., Dunkirk.

"Some Observations, Therapeutic and Otherwise, from a General Practitioner," M. Jean Wilson, M.D., Warsaw.

"Spasmophilia," Carl G. Leo-Wolf, M.D., Buffalo.

"Eiweiss Milk as Used in Finkelstein's Clinic, Berlin," Douglas P. Arnold, M.D., Buffalo.

"Contract Practice: An Economic Problem," Albert T. Lytle, M.D., Buffalo.

Dinner at Hotel Kaltenbach, at 8.00 o'clock P. M.

Thursday, September 24th.

Address by the President of the Medical Society of the State of New York, Grover W. Wende, M.D., Buffalo.

The paper by Dr. Richard J. Behan, of Pittsburgh, Pa., "Newer Researches in Regard to Cause and Origin of Abdominal Pain" was read by title.

"Abdominal Cæsarean Section: Indications for Operation, Technic and Report of Cases," Irving W. Potter, M.D., Buffalo.

"Functional Conditions," J. Henry Dowd, M.D., Buffalo.

"Ethics: Medical and Otherwise," Edward Munson, M.D., Medina.

SANITARIUMS.

The Homewood Sanitarium

GUELPH, ONTARIO

ESTABLISHED 1883

Situated seventy miles from Niagara Falls on the C. P. R. and G. T. R. The institution consists of seven isolated buildings, all erected within the past six years, permitting of the necessary segregation of the mental, nervous, and habit patients. Well equipped with continuous and hydrotherapeutic baths. Seventy-five acres of park.

Apply for information to

A. T. HOBBS, M.D., Supt.

BRIGHAM HALL

CANANDAIGUA, N. Y.

A Private Hospital for Mental Cases

ESTABLISHED 1855

ROBERT G. COOK, M.D.

RESIDENT PHYSICIAN

Dr. Barnes Sanitarium

STAMFORD, CONN.

For

Mental and Nervous Diseases

AND GENERAL INVALIDISM

Splendid location overlooking Long Island Sound and City. Facilities for care and treatment unsurpassed **Separate Department for cases of Inebriety.** 50 minutes from New York City.

For terms and information apply to

F. H. BARNES, M.D.

Long Distance Telephone 1867 **STAMFORD, CONN.**

BREEZEHURST TERRACE

FOR NERVOUS AND MENTAL DISEASES
DRUG AND ALCOHOL ADDICTION

Bungalows to live in if desired. Beautiful surroundings. 25 minutes from Penn. Station.

New York Office: 58 Central Park West
Mondays and Wednesdays, 11 to 1
Tel. Connections. For particulars apply to
DR. D. A. HARRISON or DR. D. R. LEWIS
Box 15 Whitestone, L. I. N. Y.

Crest View Sanatorium

GREENWICH, CONN. (TEL. 105)

Ideal Home. Beautiful surroundings. Nervous Diseases, also all forms of Gastritis, Neuritis and Rheumatism. 28 miles from New York City—N. Y., N.H. & H.R.R. F. ST. CLAIR HITCHCOCK, M.D.

ELECTROTHERAPY

N.Y. Office, 616 Madison Ave. Tel. 1470 Plaza

SANITARIUMS.

River Crest Sanitarium

Astoria, L. I., Queens Borough, N. Y. City

UNDER STATE LICENSE

J. JOS. KINDRED, M.D. *Consultant* — WM. E. DOLD, M.D. *Physician in Charge*

FOR NERVOUS AND MENTAL DISEASES

including **committed** and **voluntary** patients. **alcoholic and narcotic habitues.** A Homelike private retreat, overlooking the city. Located in a beautiful park. Eight attractive buildings for thorough classification. Easily accessible. Complete Hydrotheraphy (Baruch), Electricity, Massage, Amusements, Arts and Crafts Shop, etc.

Separate Building for Alcoholic and Drug Habitues
Attractive villa for special cases.
Moderate rates.

New York City Office, 616 Madison Ave., hours 3 to 4. Tel. 1470 Plaza. Sanitarium Telephone, 520 Astoria.

WEST HILL

252d STREET
Just West of Broadway
NEW YORK CITY

FLAVIUS PACKER, M.D., *Physician in Charge.*
AMOS T. BAKER, M.D., *Associate Physician.*

A private sanitarium for nervous and mental diseases in New York City. *Built on the cottage plan.* Opposite and overlooking Van Cortlandt Park Parade Ground.

Number of patients limited to twenty. Separate cottages if desired. Easily accessible by automobile or carriage from New York or Yonkers.

White Oak Farm, Pawling, New York, is now open for rest and recreation.

Telegraph and Post Office Address, West Hill, Riverdale, New York City

Telephones:

40 Kingsbridge, New York City 1150 Yonkers

Long Island Home

Licensed by State Commission in Lonacy

Fronting the Great South Bay and Atlantic Ocean

AMITYVILLE, L. I., N. Y.

For Nervous and Mental Diseases and Selected Cases of Alcoholic or Drug Habit

New York City, 61 W. 50th St. Office Hours, 9.30 to 10.30 A.M., Wednesdays.

O. J. WILSEY, M. D., Physician-in-Charge

Tel. { New York 2093 Plaza / Amityville 2.

The Westport Sanitarium

WESTPORT CONN.

A Private Institution for the Care and Treatment of Nervous and Mental Diseases

Pleasantly situated. Large private grounds. Homelike surroundings. Modern appointments. Separate building for Patients desiring special attendant. Single rooms or suite. Hydrotherapeutic apparatus. Terms reasonable. New York Office, 40 E. 41st Street 1st and 3d Wednesdays only, from 10:30 to 12:30. Telephone 6950 Murray Hill

For particulars address, Medical Superintendent,

DR. F. D. RULAND WESTPORT, CONN.
Telephone, Westport 4

MARSHALL SANITARIUM

TROY, N. Y.

A licensed retreat for the care and treatment of Nervous and Mental Disorders and Drug and Alcohol Addictions. Beautiful location and modern equipment. Terms moderate.

For circular, etc., address

C. J. PATTERSON, M.D., Physician in Charge.

PEARSON HOME

For the Treatmeot of

DRUG ADDICTIONS

Avoidance of shock and soffering casbles os to treat safely aod successfolly those extreme cases of morphinism that from loog coniinoed heavy doses are in poor physical condition.

HILLSDALE · · · BALTIMORE Co., MD.

SANITARIUMS.

"INTERPINES"

Beautiful, Quiet, RESTFUL, and HOMELIKE. Twenty-two years of successful work. Thoroughly reliable, dependable, and ethical. Every comfort and convenience. Accommodations of superior quality. Disorders of the nervous system a specialty.

FREDERICK W. SEWARD, Sr., M. D.
FREDERICK W. SEWARD, Jr., M. D.
Resident Physicians.

Phone, 117 Goshen **GOSHEN, N. Y**

DOCTOR BOND'S HOUSE

(Under State License)

YONKERS-ON-HUDSON, NEW YORK

For the scientific treatment of selected cases of NERVOUS and MENTAL DISEASES. Is free from institutional atmosphere or appearance and has exceptionally beautiful grounds, views and surroundings. Modern hydrotherapeutic installation.

The limited number of eight received assures close individual attention.

Thirty minutes from Grand Central Station, New York City. For illustrated booklet and information, address,

DR. G. P. M. BOND

960 North Broadway, Yonkers-on-Hudson

Telephone, 883 Yonkers New York

GEO. H. McMICHAEL, M.D.

ESTABLISHED 1893

75 WEST TUPPER ST. BUFFALO, N. Y.

DR. McMICHAEL TREATS EXCLUSIVELY

ALCOHOLISM AND DRUG HABITS

Physicians now realize that alcoholism and drug habits are curable, provided they receive skillful medical, hygienic and psychic treatment in a congenial environment by a specialist whose knowledge enables him not only to deal with the strictly medical aspect of each case, also to understand the feelings of the patient and to gain his confidence.

The course of treatment is both psychological and medical, adapted to the requirements of each individual case. The results are excellent and permanent.

BUFFALO REFERENCES:

DR. ROSWELL PARK — DR. GROVER WENDE
DR. HENRY C. BUSWELL — DR. L. G. HANLEY
DR. EDWARD J. MEYER — DR. WALTER D. GREENE

SCHOOL.

The Bryant School for the Treatment of STAMMERING

An educational institution for the correction of speech defects. Established by its present proprietor in 1880. The methods seek through drill in the technique of speech and a proper conception of the harmonious relations between its mental and physical factors to establish new and correct habits. Authentic references of the highest character, if desired. A pamphlet of the institution, giving our outline of treatment, may be had upon application.

F. A. BRYANT, M.D., Principal

62 W. 40th St. New York

TELEPHONE 1071 BRYANT

NEW YORK STATE JOURNAL OF MEDICINE

A Journal Devoted to the Interests of the Medical Society of the State of New York

JOHN COWELL MAC EVITT, M.D., Editor

Business and Editorial Offices: 17 West 43d Street, New York, U. S. A.
Address Journals sent in Exchange to 1313 Bedford Avenue, Brooklyn, N. Y., U. S. A.

Vol. XIV. DECEMBER, 1914 No. 12

EDITORIAL DEPARTMENT

SOMETHING NECESSARY FOR US TO DO.

THERE is no doubt whatsoever that during the coming session of the State Legislature Christian Scientists, Osteopaths, Naturopaths, Chiropractors and disciples of other cults engaged in exclusive methods of treating the sick will petition that body to grant to them the rights and privileges now accorded to legally qualified physicians to practice medicine and surgery. We have no desire to enter into any discussion of their methods of practice, nor will we criticise adversely their desire to secure legal standing as physicians. Their present legal status permits them to practice their exclusive methods, and with this they should be satisfied.

The following comments are written not so much for our medical readers, who will find them more or less in accord with their preconceived views, but with the intention of having them come under the cognizance of members of our State Legislature who will be called up to vote at the next session on bills concerning the health of the community. We will endeavor to dispassionately state our position and ask each legislator to devote a few moments to what we have to say. We feel that when life or death is the subject at issue political expediency will take flight and give place to a conscientious discharge of duty. We will furthermore ask each legislator who employs a legally qualified physician as his family medical adviser to affirm his confidence in such an adviser by voting against conferring the privilege this medical adviser enjoys—worthily won by a long course of study—upon a class of men unfitted by medical education to minister scientifically to others who may be in need of medical attention.

The history of medicine from the time of Hippocrates down to the present day is replete with the brilliant achievements of highly educated men of all enlightened countries, who, ever mindful of the high aim of medicine—the healing of the sick—devoted their time and thought through investigation, research and analytical experience, to its accomplishment. Plagues which devastated whole communities are no more. Epidemics of cholera, typhus fever, yellew fever, cerebrospinal fever, bubonic plague, diphtheria, smallpox, malaria, hook worm disease, syphilis, gonorrhœa, and other morbid conditions peculiar to internal medicine, are practically under control, and, together with the results obtained in abdominal and brain surgery, the miraculous seems almost apparent. Can any cultist controvert what we state? Has Christian Science, Osteopathy, Naturopathy or any other "pathy" contributed one iota to these results? Do you believe, can you believe, that should any of the above mentioned diseases appear in an epidemic form that Christian Scientists or their co-related adjuncts would be able to cope with them? Would you be willing to do away with the executive staffs of your national quarantine stations or your health departments, composed of qualified physicians, and replace them with the adherents of Christian Science, Osteopaths, Naturopaths and Chiropractors. What answer does common sense dictate?

The Christian Science Act introduced by Senator McClelland in 1914, "gives to any person who ministers to or heals the sick or suffering by mental or spiritual means, without the use of any drug or medicine or material remedy, the *right to practice medicine.*" Now, does any sane human being believe that a child in the throes of asphyxiation from a diphtheritic membrane occluding the windpipe can be relieved by mental admonition or the adjustment of a displaced spinal bone? If your own child was in such a condition would you send for a Christian Scientist, Osteopath or Chiropractor, or for a skilled physician, who, by a simple surgical operation, could give your child almost instant relief? And yet these cultists demand from you the privilege of treating such a case and others of like desperate nature in accordance with their mode of practice. Think of it! There are 430 practicing osteopaths in this state; 15 of them possess medical degrees; the remainder, 415, are not *qualified* by education to *practice* medicine, and yet they demand to be invested with all the privileges of a qualified physician—a travesty on Medicine.

The Osteopathic Act introduced by Senator Herrick in 1914*, gives a *Physician* (?) who is a holder of a registered license to practice osteopathy the same rights and privileges as the holder of any other license to practice medicine; and any rule, regulation or ordinance of a municipal department, body or officer respecting vital statistics, or the issuance of a burial permit, or otherwise which discriminates against the holder of such a license shall be null and void. This act also gives any incorporated osteopathic society affiliated with the New York Osteopathic Society the privilege to prosecute in the courts any person who practices illegally under the cover of any medical diploma or license and to *collect the fines.*

The Chiropractic Act, introduced by Senator Boylan in 1914, "To amend the public health law in relation to the practice of chiropractics." For the purpose of this article chiropractice is hereby defined to be a scientific method (?) of adjusting the articulation of the spine and other osseous structures of the human body to remove pressure or tension from the nerves. Chiropractics claim to cure by spinal adjustment. Under this act chiropractors can be given all the privileges of the public health law, and upon making application for a license admission to practice without one is given to the hordes of graduates to date of the chiropractic schools with a single course of four months.

The Naturopathic Act, introduced by Senator McClelland in 1914, "To amend the public health law in relation to the practice of naturopathy and providing for the appointment of a board of examiners and licensing of naturopaths to practice in the State." Naturopathy is a natural treatment, including water cures, neuropathy and scientific manipulation of any kind. This act will establish a State Board of Naturopathic Examiners, who will have the right to issue licenses to practice naturopathy without further examination.

* * * * * *

We are fully convinced that there is not a scientific physician in the State who is not opposed to the passage of these laws, and we furthermore feel that of this vast number, unless personally appealed to, not two per cent. will exert themselves to oppose them. The solution of this apathy is that each one relies on the other and *all* on the Legislative Committee of the State Society, who, unaided, labor under great disadvantage in preventing unjust medical legislation. We must not permit trickery to circumvent us as we did last year. Saved from defeat at the last moment by the courageous action of Governor Glynn, let it be said to his lasting honor.

We suggest (and this suggestion meets with the approval of the chairman of the Legislative Committee, Dr. Lewis K. Neff), that the president of each county medical society appoint subsidiary committees consisting, say, of two members, to wait upon each senator and assemblyman of the different election districts and place the truths of the issue squarely before them. These committees to report back to the County Society Legislative Committee the views they have obtained from the legislators, which committee will in turn report to the Chairman of the State Society's Legislative Committee.

It is contrary to our sense of honor to employ legal talent to represent us continuously during the session of the Legislature. We have sufficient faith in human nature to believe that the members of our legislative body need but be convinced of the arrant folly of these later day faddists to see their way clear to refuse to grant to them by their votes privileges exercised by members of a profession revered for its learning since the dawn of civilization.

* The introducer of the bill here designates an osteopath as "a physician."

Original Articles

THE PRESENT STATUS OF VACCINE TREATMENT IN ACUTE SUPPURATIVE INFECTIONS.*

By CHARLES NORRIS, M.D.,
NEW YORK CITY.

VACCINE treatment or specific bacteriotherapy is used to protect an animal or man against a disease he has not suffered from, as in the prophylactic vaccination of troops against typhoid or para-typhoid on the one hand, or, on the other, to increase the immunization processes occurring in disease, namely, active, immune-therapy.

Robert Koch was the first to immunize against a bacterial product by the use of tuberculin in 1890. In 1895 Denys and Leclef discovered the bacterio-tropic thermo-stabile substances in immune serum which rendered bacteria sensitive to phagocytosis. They observed that it required an addition of immune serum to develop the phagocytic properties of leucocytes. Leishman in 1902 developed an exact pipette method of measuring the phagocytic power of the blood, by which he was able to determine that phagocytosis was increased in the immune as against the normal serum. These observation formed the starting point of Wright's† work which led to the discovery of the existence of thermo-labile substances in blood serum which sensitized bacteria to phagocytes. To Wright belongs the credit of having introduced active immunization against the bacterial infections of man as a general therapeutic measure of wide application. Wright's re-discovery of the bacterio-tropic substances of normal serum, the opsonins and the information gained concerning the immunization processes during vaccination by use of the so-called opsonic index technique, placed vaccine treatment upon an apparently sound scientific basis.

For present purposes it may suffice to state briefly Neufeld's view that the tropins and opsonins are different bodies, that the tropins are thermostabile immune bodies, that the opsonins are present in normal serum and are thermolabile bodies of a complex nature which are active only in the presence of complement and amboceptor and that the immune opsonins have their specific amboceptors. Denys, and later Neufeld, showed that the tropins are specific immune bodies and are active only upon the bacteria by whose antigens they have been developed. Bullock and Western have likewise demonstrated the specificity of the opsonins in blood serum by means of absorption experiments.

According to Wright the injection of vaccines of various bacteria develops the specific opsonins and tropins which are intimately associated with and incite the reparative processes in infectious diseases by increasing the phagocytic properties of the leucocytes. He claims that the amount of bacterio-tropic substances in the organism runs parallel with the extent of phagocytosis in vivo, namely, that the opsonic power of the blood runs parallel with the opsonic index as determined in vitro. Ungermann's experiments on mice with typical and atypical pneumococcus strains seem to bear out Wright's contention in regard to the parallelism of the phenomena in vivo and in vitro.

A description of the methods employed to determine the opsonic index is inappropriate at this time. Many laboratory workers have been unable to follow the methods of Wright with success and precision and, it may be said, that the determination of the opsonic index during vaccine treatment has fallen into disuse and that it is no longer generally employed as a guide to treatment, namely, to the time and amount of vaccine to be given. On the other hand, Wright's method has been followed with success and approval by George Michaelis (1), W. Busse (2) and Neisser and Guerrini (3). The determination of the negative and positive phases after inoculation establishes the time and amount of dosage. According to Wright and Reid a subnormal index in tuberculosis indicates a localized lesion; also a subnormal index to staphylococcus suggests a localized staphylococcus. In tuberculosis if the index is found to vary, subnormal, normal and high, it suggests a general tuberculosis. The index has a diagnostic importance in a specific sense. A constant normal index means freedom from infection, a changing index indicates auto-inoculation of the organism with toxins or bacteria which enter the general circulation. Auto-inoculation may be produced by artificial means, such as massage, active movement and by Bier's hyperæmia. These methods have been employed to differentiate between a tuberculous and a gonorrhœal arthritis, by determining which of the opsonic indices is increased. Further, a comparison of the index of the blood serum and of peritoneal exudate, it is claimed, has been of use to determine the nature of the peritoneal lesion. Thus, if the index of the fluid is lower than that of the blood serum for tubercle bacilli, it would indicate a tuberculous peritonitis. The index has considerable prognostic importance in the determination of the severity and course of an infection, but it has received the most attention in the bacterio-therapeutic treatment of disease, in that it determines the dosage to be employed at the appropriate time. Small doses are recommended in acute focal cases of infection or in general sepsis, in order not to provoke a long or too intense negative phase; medium doses are given in chronic local infections; in other words, small doses in severe and medium doses in mild infection. Autogenous vaccines, when possible, are preferred.*

* Read at the Annual Meeting of the Medical Society of the State of New York, April 30, 1914.

† Wright: "Studies in Immunization," 1909.

* The foregoing brief presentation on vaccine therapy has been taken largely from the article by Georg Michaelis (1) and the references may be obtained from his article and from that of Neufeld article on the "Bakteriotropine and Opsonine," which is found in the same Handbuch.

According to Pearce (4), "The present widespread use of vaccines dates back only to 1902 and to A. E. Wright's advocacy of the use of dead bacteria in various chronic infections caused by these bacteria. At first the method was considered applicable only to chronic infections and for the most part to circumscribed lesions. Now, however, in the hands of its later enthusiastic advocates, it is applied to practically every form of bacterial infection, whether acute or chronic, local or disseminated.

"It is possible, therefore, to trace the development of the theory of vaccination through three stages: (1) The principle of prophylaxis, that is, the production of immunity through the development of a disease in a mild form (smallpox, anthrax, chicken cholera, typhoid fever); (2) the rapid production of immunity after infection, but before the disease manifests itself by its peculiar symptoms (Pasteur's antirabic vaccination), and (3) curative vaccination, or vaccination after the disease is established and has produced its local anatomic lesions and the attendant physiologic disturbances which we call symptoms.

"Concerning the scientific basis of the first and second of these principles, no question arises; only the third is in doubt."

Are the claims of the Wright school of vaccinators justified? Let us briefly attempt to review the scientific methods at our disposal which enable us to judge of the therapeutic value of vaccine treatment in infectious diseases. The empiric method: Although all methods of treatment are ultimately judged in this way, yet it is the most tedious and time-consuming of all methods of judging the value of treatment, for it fails to take into count the fact that disease is a complex problem. Disease varies in its severity according to race, sex and age and the individual, with his varying constitution, habits and the condition of his arteries and viscera. Imagine the complex problem of determining the value of a line of treatment in a disease such as pneumonia by the vaccine treatment. Any line of treatment in a severe case of pneumonia is given due credit for the recovery. The same is true of any severe case of disease where the correctness of the prognosis depends so largely upon the experience and common sense of the practitioner. It is quite evident that by such a method no real knowledge of the efficicacy of a treatment is gleaned. It may be said, once for all, that most of the reports of successful vaccine treatment are based upon such faulty reasoning.

What are the scientific methods that can be used to demonstrate the success of vaccine treatment? It is greatly to the credit of Wright and his pupils that they have made the attempt to put the diagnosis, prognosis and the therapeutic dosage upon a demonstrable basis of observation. Is their method accurate and reliable? And does it actually tell us all we should know to form a definite judgment upon what occurs in the organism during the processes of healing. Let me again quote from Pearce (4) and Theobald Smith (5):

"The enthusiastic supporters of curative vaccination stretch this possible application to cover all forms of vaccine treatment and assert that the introduction of large numbers of extraneous bacteria stimulates the natural immunizing process to greater activity, thus artificially fostering the slow process of naturally acquired immunity. For this extension of exact knowledge to cover more than certain localized or slowly developing infections there is no basis in fact. Such enthusiasts lose sight of the fact that there is no common mechanism of immunization. The process differs not only according to the type of infecting organism but also according to its virulence and the localization of its toxin in the host; also variation in the reaction of the infected host play an important part.

"No more important principle has resulted from immunologic studies than that the process of immunity in each infection must be studied by itself. The principles of immunity to one infection or poison cannot be applied to another, even if both are due to organisms apparently elaborating their poisons in the same way. For example, compare the difference in action of the specific serums for two organisms—the diphtheria bacillus and the tetanus bacillus—each of which produces a soluble toxin. One is curative, the other at best prophylactic.* If this difference occurs in the serum therapy of diseases produced by soluble toxins, and our knowledge of these is perhaps the most satisfactory, how unwise it is to apply a general rule to vaccine therapy, our scientific knowledge of which is so slight.

"Is it logical to apply the same procedure to a definitely localized lesion such as the staphylococcus abscess and also to a bacteriemia such as that due to the streptococcus or pneumococcus? Immunology has taught us that many co-operating and interacting forces are concerned, as antitoxins, bacteriolysins, opsonins, agglutinins and phagocytosis. Not all co-operate equally; in one disease, antitoxin formation appears to be the essential mechanism, in another phagocytosis, in a third bacteriolysin, and so on. In no two diseases is the interaction the same, and the reaction may vary according to the individual characteristics of the infected individual. These factors were emphasized by Wright, but are seldom considered by the present-day clinical vaccinator, who applies the same method to all infections. They are, however, the factors on which the scientific basis of vaccine therapy, if it is to be attained, must rest. As many of the known diseases cannot be exactly reproduced in animals, and as reaction vary in different hosts (species), the scientific basis of vaccine therapy can be obtained only through the careful studies

* The statement that antitetanus serum is at best prophylactic is questionable, for early intravenous administration has been followed by excellent results, and from recent reports the intraspinal inoculation has been succesful even in severe cases.

of clinical research controlled by the accurate methods of the experimental laboratory. As Smith stated some years ago, 'The practicing physician in co-operation with the clinical laboratory will have to work out his own salvation, and this can be done only with the aid of the most rigorous and painstaking methods which medical science can supply. Any other course is certain to lead astray.'"

The weight of evidence points to the conclusion that only Wright and his pupils agree that the technique of the opsonic index is accurate and reliable. Granting that the method is unreliable, except in their hands, we must conclude that we have no other way to judge of the efficacy of vaccine treatment except by clinical observations.

Does the injection of dead bacteria cause injury? We know that large doses do. We know that staphylococcus pyogenes aureus varies greatly in pathogenicity and toxicity, that small amount of boiled staphylococcus injected into rabbits may produce toxic necrosis of the kidneys and death in the course of several weeks. Is the toxicity of the bacteria we inject ever determined? No, for it takes too long. Why use very small doses of bacteria in a case of active sepsis when we admit that they do not produce the negative phase. Why should we introduce more poison in an already overwhelmed organism? Is it not to be presumed that the dead bodies introduced will have the same effect as those causing the infection, and why run the risk of still further injuring the tissues? Wright pre-supposes that the opsonins and leucocytes are the determinative causative factors in the healing of infection. Does this not necessarily exclude many other immunological factors? Pathology teaches that people frequently do not die alone from the effects of the invading organism, but that they die from other lesions which it may be true have been started or made worse by the infection. The absurdity of giving small or any kind of a dose in acute infections or acute suppurative conditions is apparent. Imagine giving vaccine treatment to the cases of acute streptococcus infection due to milk, as reported in the epidemics occurring in Boston, Baltimore and Chicago, namely, to cases overwhelmed with bacteria and suffering from hemorrhagic nephritis. Fortunately, these cases are not given vaccine treatment since the diagnosis is not often made, especially in the sporadic cases which occur not so infrequently judging from my post-mortem experience. Possibly the greatest danger of vaccine treatment resides in the fact that it has had a noticeably bad effect upon the treatment of acute local infections and sepsis. The surgeon has mostly escaped from the opprobrium of being satisfied to treat such cases by blandly calling upon the laboratory for an autogenous vaccine and waiting for it, to the damage of his patient and his own sense of observation. I may be pardoned the observation that although a laboratory man, and recognizing the fact that laboratory aids to diagnosis and treatment are invaluable and have come to stay, nevertheless, I feel that the laboratory has had not altogether a wholesome influence on clinical diagnosis and the care of patients. It is so easy to shove responsibility upon the other fellow. In acute infections, where foci are discoverable, and these often only after careful observation and palpation, the duty of the physician as well as the surgeon is still early incision for drainage and other measures which are not in my province to specify.

We may take erysipelas as an example of an acute, usually localized infection, often accompanied by suppuration, less often by acute septicæmia and by internal complications, as meningitis, pneumonia. Seward Erdman ([6]) has tabulated clinical observations on 800 cases of erysipelas treated by vaccine and 20 treated by erysipelas phylacogen. Several stock vaccines were used with varying dosage and intervals of injection which need not be here mentioned. Let me read the conclusions arrived at:

"1. Facial erysipelas is a self-limited disease with an average febrile course of less than seven days; therefore, any remedy employed must have an immediate effect if it is to influence the course of this form of erysipelas, as many cases do not come under observation until the third or fourth day.

"2. Vaccine treatment, as administered in the preceding series of ninety-five cases, will naturally be open to much criticism by enthusiasts in vaccine therapy, and it may be said by one or another that the preparation of the dosage. or the intervals were incorrectly planned and administrated. In answer, I can do no more than submit the results as seen in the ninety-five vaccine cases in the series of eight hundred cases and refer again to the fact that different preparations, doses and intervals were to some extent tried out. The difficulty of obtaining cultures and preparing autogenous vaccines and the short duration of the average case. render this form of vaccine very difficult to employ.

"From our experience with vaccines in erysipelas I must state that the duration of the disease was not at all lessened, the mortality remained at the same level, and there was no immunity guaranteed against recurrence, against spreading of the lesion, nor were complications. such as cellulitis and abscesses, prevented; from the statements furnished by the patients, moreover, I could not gather that there was any amelioration of the subjective symptoms."

The use of vaccines in chronic infections, especially those produced by the gonococcus, is apparently so amply justified by experience that it is difficult to say anything against their use. The same may be said for chronic streptococcus arthritis as has been shown by Davis ([7]) and Rosenau. The use of the various commercial mixed and unmixed vaccines may be dismissed with the statement that they have distinct commercial values and possibilities. The prediction was

made some years ago that the laboratory would be asked to manufacture vaccines of the fecal flora for use in intestinal intoxications. The prediction came true and the physician, I believe, injected a filtrate of the evacuation when not furnished with the highly polyvalent. to say the least, group of organisms. On every hand we see the vaccine craze staring us in the face. The house surgeon run down and suffering from a slight bronchitis acquires a severe infection of the hand through a needle prick. His hand is promptly incised; he has slight chills and high fever; the physician, however, must have his sputum cultivated to determine if the same organism (staphylococcus) is present in the washed sputum as in the pus in order that vaccines may be given to prevent septicæmia. It may be well here again to quote from the splendid article of Theobald Smith (8) on the use of the vaccines.

"All parasites tend to increase the resistance of the host in which they live and multiply. Out of this universal fact a number of practical problems arise. In any given disease is it worth while to try to raise this immunity, and how much energy will it cost the patient? If worth while, what is the best and most sparing way of raising such immunity artificially? In any localized infection we must ask: Is this a beginning process without attendant immunity, or is it a residual process associated with general immunity? If the latter, vaccines may be considered safe. In processes associated with fever and bacteriemia, science says "Hands off" until we know whether we have a progressive disease with gradual undermining of the resistance or a more localized affection in which the excursions into the blood are secondary. In any case, the use of vaccines in these cases must be regarded as experimental, and should not be undertaken, save in conjunction with one trained in immunologic problems.

"Judged from this point of view, as well as from the work of the laboratory as a whole, we should say that vaccines applied during disease will be rarely, if ever, life-saving, but they may hurry recovery, by bringing into play the unused reserves of various tissues."

It would seem that in the future our efforts should be directed towards active immunization combined with anti-serum, following along the lines of Besredka and others. Gay and Claypole (9) in their studies in typhoid immunization, have clearly cut the paths which we should follow, in determining the value of vaccine treatment.

In conclusion, I may say that in considering the promiscuous vaccination of the present day that I am always reminded of the celebrated lines of Pope:

"A little learning is a dangerous thing.
Drink deep or taste not, the Pierian spring
Their shallow draughts intoxicate the brain,
And drinking largely sobers up again."

and also:

"Who shall decide when doctors disagree
And soundest casuists doubt like you and me."

REFERENCES.

1. Michaëlis, Georg, *Handbuch der pathogenen Mikroorganismen,* Kolle u. Wassermann Zweite vermehrte Auflage, Siebenundvierigste Lieferung, Bd. III, seite 143-165.

2. Busse, W., Ueber die Fehlergrosse und die Fehlerquellen im Opsoninversuch. *Deutsche med. Wochenschr.,* 1909, Nr. 13, seite 569.

3. Neisser & Guerrini, Ueber Opsonine und Leukostimulation. Arb. a. d. Kgl. Inst. f. exper. Therapie zu Frankfurt A. M., 1908, H. 4.

4. Pearce, Richard M., The Scientific Basis for Vaccine Therapy. *Jour. of the Amer. Med. Assoc.,* Vol. LXI, No. 24, pp. 2115-2119.

5. Smith, Theobald, What is the Experimental Basis for Vaccine Therapy? Read at the Annual Meeting of the Massachusetts Medical Society, June 8, 1910. (Quoted from Pearce.)

6. Erdman, Seward, Erysipelas: Clinical Observations on 800 Cases, Including 95 Treated by Bacterial Vaccine and 20 Treated by Phylacogen. *Journ. of the Amer. Med. Assoc.,* December 6, 1913, Vol. LXI, pp. 2048-2051.

7. Davis, David J., Chronic Streptococcus Arthritis. *Journ. of the Amer. Med. Assoc.,* Vol. LXI, No. 10, pp. 724-727.

8. Smith, Theobald, An Attempt to Interpret Present-Day Uses of Vaccines. *Journ. of the Amer. Med. Assoc.,* Vol. LX, No. 21, pp. 1591-1599.

9. Gay, Frederick P., and Claypole, Edith J., The "Typhoid-Carrier" State in Rabbits as a Method of Determining the Comparative Immunizing Value of Preparations of the Typhoid Bacillus, and the Agglutinability of Blood and Agar Strains of the Typhoid Bacillus. *Archives of Internal Medicines,* December, 1913, Vol. XII, pp. 613-627.

Discussion.

Dr. Robert H. M. Dawbarn, New York City. —The very interesting and highly instructive paper just read by Dr. Norris seems of particular interest to me just at this time, in reference to the comment upon this means of treatment of erysipelas—theoretically our ideal and long-awaited plan, but practically in many instances shown to be an absolute failure.

Rather recently a prominent bacteriologist here in town explained to me the reason for this apparent contradiction. At the risk that many of you already may know the facts I will venture to repeat them. They are so interesting and significant that surely we all should know.

When Fehleisen and Kitasato discovered what they termed the streptococcus erysipelatosus, all the rest of the specialists with the microscope fought their claim to prefessional immortality, declaring with great unanimity that this was none other than identical with the streptococcus pyogenes. After several years of stenuous endeavor the gentlemen named tacitly yielded the point. And yet, by a strictly clinical means the truth is at length made clear, and we know that Fehleisen and Kitasato were entirely right in their contention.

These two streptococci cannot be distinguished from each other by microscope or by culture-cabinet. But if a vaccine obtained from strepto from a case of pus be injected for the cure of erysipelas, it will accomplish no good whatever. Whereas, if a vaccine obtained from strepto from another erysipelatosus patient be employed, its results are altogether different and are often brilliantly curative.

"A CONSIDERATION OF SOME METHODS IN THE TREATMENT OF PUERPERAL INFECTION WHICH HAVE GIVEN IMPROVED RESULTS." *

By RALEIGH R. HUGGINS, M.D.,
PITTSBURGH, PA.

IT IS unfortunate that we are not able to demonstrate the same relative advance in the differential diagnosis and treatment of infection following delivery that is so clearly demonstrated in the progress which has been made in the field of operative obstetrics. Many and varied have been the methods advised in the local treatment of the interior of the uterus. Gradually we are learning that if the local treatment is not too meddlesome an exact diagnosis may not be an absolute necessity, so far as the recovery of the patient is concerned, but that many patients may be saved, who otherwise die, if proper care is exercised early in the course of every case of puerperal infection.

A patient with symptoms of infection, following delivery, presents a number of conditions for analysis. There may be an almost infinite series of gradations from a slight infection arising from lacerations, to an inflammatory process involving the uterus, tybes, para metrium, lymphatics, and ovaries or extending beyond these into the blood stream resulting in a general systemic infection. Early diagnosis of the local lesion is important, because improper treatment may serve only to augment the spread of infection onward into the blood stream thus converting, what might remain a local process, into a wide spread infection. The infection usually starts in the uterus and the primary lesion is a wound infection at the placental site. It is here we have an ideal culture medium for the propagation of organisms easily and not infrequently introduced from without.

Pathologically speaking it is divided into two varieties: the putrid and septic. The former is caused by the simple putrafactive organisms or the ordinary pus organisms of lesser virulence and remains more or less limited to the endometrium. Sections through the wall of a uterus thus infected show a thick layer of necrotic material lining the uterine cavity. In the superficial layer of this membrane large numbers of the offending organisms are found. Beneath this layer of necrotic material lies a thick layer of small cell infiltration or the so-called zone of reaction.

Few of the organisms can be found in the reaction zone and none can be made out in the healthy tissue beneath (Bumm). Nature's method of preventing invasion is thus beautifully illustrated and does not differ here from all other parts of the body. In the septic variety this small cell infiltration may be absent or imperfectly developed and micro-organisms can be seen making their way downward along the line of the lymphatics through the muscle wall out toward the peritoneal covering.

Good knowledge of the pathology serves us well because it is from a keen appreciation of this fact that much of the progress made in the treatment of puerperal infection has been based. If the zone of reaction is removed by operative measures, the chances of the infection spreading are much greater than if the uterus is left undisturbed. It streptococci of the hemolytic type are present in the uterus they may pass directly through the wall of the uterus in spite of any barriers and without local reaction. Local treatment, which is done with the idea of cleaning out the uterus, removes what little defence there may be and will only expedite their spread. We have learned that this form of infection cannot be checked in its onslaught by any kind of intra-uterine treatment. The writer, as many others, was slow in appreciating the analogy between an open wound in the uterus and one in other parts of the body. A disposition to ignore the inside of the uterus has been cultivated and the results have been much better than when vigorous measures were employed to empty or irrigate the uterine cavity with various antiseptic solutions. The almost regular occurence of chills and elevation of temperature following the employment of various intra-uterine manipulations finally led us to the conclusion that little benefit was derived and that often much harm was done.

It was learned that a firmly contracted uterus is of as much value in the prevention of the spread of infection as it is in the prevention of hemorrhage.

One hundred and twenty-five cases of infection following abortion after the second month, or delivery, have all been treated in a conservative manner as far as the inside of the uterus is concerned, with the exception that where firm contraction of the uterus was not present or where is could not be secured by the use of strychnine, ergot, or pituitrin, the uterine cavity was firmly packed with iodoform gauze. This has been done for the purpose of securing firm contraction and incidentally, if the uterus has not been emptied, facilitating the expulsion of the contents. Both morbidity and mortality have been less than formally when the measures were more active; that is immediate cleaning out of the uterine contents. In the treatment of abortion at or before the second month, the uterus is emptied at once without the same regard to the danger of systemic infection. Here the infected area is not large and firm contraction of the uterus is best secured by freeing the cavity of all debris.

In all acute cases, care should be taken at the earliest opportunity to determine: whether the infection is confined to the uterus; has it extended into the parametrium or through the tubes into the peritoneal cavity; is there any evidence of infection extending upward behind the peritoneum through the retroperitoneal lymph

* Read at the Annual Meeting of the Medical Society of the State of New York, April 29, 1914.

glands; is it a thrombophlebitis, or has it penetrated all barriers and resulted in a blood stream infection. Cultures from the uterus show the nature of the local infection. Repeated blood cultures reveal the presence or absence of bacteria in the blood stream.

In this series strepticocci have been recovered from the uterus in 50 per cent of the cases. A hemolytic streptococcus has been present thirty times, but the test for hemolysis was not always made. Blood cultures were positive in thirty cases. There were three deaths. One patient was admitted ten days after the onset of symptoms with a complicating pneumonia. The second was complicated by a general peritonitis, and the third had a very low resistants as a result of profuse hemorrhage.

We learned that the presence of the most virulent bacteria in the uterus does not necessarily mean that the infection will spread. Also, do we conclude, that it is less likely to spread if the uterus is well contracted. While the methods used have been termed conservative, there is one feature of the treatment that may be considered somewhat radical, and that is the employment of gauze packing in the uterus where contraction or retraction is not present or secured by the use of drugs. This is done in septic abortion before the expulsion of the ovum, always excluding the possibility of perforating injury to the uterus. The same thing is done after expulsion of the ovum in the presence of retained placenta. If there is hemorrhage, the same method is employed. Unless there is hemorrhage or relaxation of the uterus, no local measures are used. If either of the above conditions are present and do not respond at once to pituitrin or ergot, the uterus is firmly packed with iodoform gauze. The presence of local infection beyond the uterus within the tubes or parametrium contra, indicates the employment of gauze. We have learned that a firm tampon does not increase the danger of spreading the infection, but, on the contrary, retards it.

There is certainly no fear of damming back the infection and thus permitting greater absorption. If the tampon is used it is removed at the end of twenty-four hours. If there is still reason to believe that foreign material remains in the uterus and it does not remain in the state of firm contraction, the gauze pack is again introduced without fear or harm. If the infection has not extended beyond the cavity of the uterus, the temperature in the majority of instances falls rapidly to the normal. If retained secundines are present they may be expelled, or if not, the activity of the infection subsides, so that in a few days they are are easily removed without severe reaction. Knowledge of the presence of hemolytic streptococci within the uterus does not assist either diagnosis or prognosis. Our experience corresponds with others, who report that the streptococcus is found in the uterus in more than half of all cases of puerperal infection, both mild and severe. This being true, our treatment must be a rational one. That means a careful preservation of the natural forces of resistance. If the protective zone is removed it may allow a spread of the infection, where, otherwise, it would be confined to the uterus. Patients are placed in the sitting position to assist drainage.

When infection spreads beyond the uterus attention should be paid to the lymphatics of the pelvis. The majority of exudates disappear spontaneously, yet many suppurate, and when this occurs drainage should be instituted as early as the condition can be recognized. This is true, particularly when it ascends and pus collections form in the retroperitoneal space. There is no region in the body which demands earlier drainage in the course of infection than does this one. Hysterectomy is indicated when the infective process spreads in the form of multiple abscesses in the uterine walls, or when a putrid endometritis causes a degeneration of myomatous growths within the uterus. Suppurative peritonitis should be operated upon early and the cavity thoroughly drained.

All patients with chronic thrombophlebitis, drifting on day after day from bad to worse, should be operated upon. This is true, particularly when the infection involves the ovarian veins. My experience leads me to be enthusiastic over the hope that lies in the operative treatment of some of these cases if undertaken early and proper judgement used in the operative technique.

The treatment of puerperal septicemia or bacteremia has been one of great interest. The employment of vaccines, sera, and various kinds of chemicals intravenously has been tried with uncertain results. The satisfactory results obtain from the use of magnesia sulphate locally in the treatment of erysipelas and various other forms of infection led the writer to try it in the treatment of puerperal infection. After experiments had proven its safety it was given intravenously and in many instances the results have been most satisfactory; at first it was given in a 1 per cent solution of saline and not more than thirty grains at one time. Later it was learned that much greater quantities of the drug can be given with safety if administered slowly. We have never given more than 100 grains of it at one time in a solution of 1 per cent, but Dr. Harrar has used 250 grains with no alarming effects. At the suggestion of Dr. Harrar distilled water has been used instead of saline and there has been fewer chills following the administration. Chills are less liable to occur if the fluid is given at the proper temperature. There has been no accidents from its use and we have given it more than one hundred and fifty times. It has been repeated several times in the treatment of the same patient at twenty-four intervals.

Experiments have not explained its action. It is not bactericidal, yet in certain instances the effect is so marked that one is inclined to the

belief that in some way the tissues are stimluated to greater resistance. Whether agglutination of the bacteria occurs as a result of its presence, or the production of opsinins increased, remains unknown. It has been given in the treatment of twenty-five cases of streptococcemia, with two deaths. Some of these patients were extremely ill and blood cultures showed the presence of the hemolytic variety of the streptococcus. It has been of undoubted value when administered in the acute stage of streptococcic toxemia before it has been possible to demonstrate the presence of bacteria in the blood stream and when we are unable to decide what the final extent of the infection may be. Its use intravenously in pneumococcic and other forms of streptococcic blood stream infection have not met with the same success. This leads one to be doubtful about its value in this form of infection, and, after all is said, the effects noted in so small a number of cases may only be a coincidence.

To summarize: The most rational treatment in the beginning of every case of sepsis starting within the uterus is based upon a keen appreciation of the pathology. The first and most important indication is to secure firm contraction of the uterus, the second is a healthy respect for nature's protective zone; in this way limiting the spread of infection. Good drainage is also an important factor and is secured by placing the patient in the sitting position. In addition to general measures, such as attention to diet and elimination, fresh air is the most important factor in the successful treatment of puerperal infection. These patients should be kept in the open air, winter and summer.

Discussion.

Dr. James A. Harrar, New York City.—The statements of Dr. Huggins are so clearly in accord with modern teachings concerning the management of puerperal infection that there is left little to add and nothing to criticise.

The elimination of the postpartum douche after normal labor, and in fact of all douching and curetting in infected cases, has been one of the greatest factors in the reduction of morbidity and mortality. The isolation of the offending organism from the interior of the uterus is always interesting, but it is questionable if such information is of much value in directing the treatment. However, the finding of the pyogenic organisms should be all the greater contra-indication to intra-uterine manipulation of any kind.

What *is* important is to determine as early as possible whether or not we are dealing with an infection of the blood stream, *i. e.*, with a true bacteremia; for we now seem to have a treatment of some value in bacteremia if we can institute it before the establishment of secondary localization of the infection. This treatment, as originally advocated by Dr. Huggins four years ago, is the intravenous infusion of hypotonic solutions of magnesium sulphate. In some way this increases the patient's resistance, perhaps by increasing the phagocytic activity of the leucocytes.

I have used the intravenous infusions of 2 per cent solution of magnesium sulphate in freshly distilled water in a number of cases of streptococcic toxemia, and in twelve cases of streptococcic bacteremia prove such by repeated positive blood cultures.

Dr. Huggins has been extremely fortunate in securing such a large number of bacteremias upon which to test out the method, and his results have certainly been extraordinary. In a large service, such as that at the Lying-In Hospital, of over 5,000 puerperal women a year, including infected postpartum cases sent in by doctors and midwives, we have had in three years but twelve cases of bacteremia upon which to use the injections. That bacteremia is more often suspected clinically than is proved by blood cultures was demonstrated by our former pathologist, Dr. J. E. E. Welch. In 176 cases referred for blood culture prior to 1908, he secured positive cultures in but forty-six. Of these forty-six, forty-three died under ordinary methods of treatment. Since then in the twelve cases of bacteremia treated with magnesium sulphate the results have been as follows:

Three cases were admitted to the hospital late in the course of an acute pyemia with multiple abcess formation, and died shortly after a single infusion given as a last resort. Three more with such complications as peritonitis, panophthalmitis, and septic embolus in the pons, died after three or more injections with only temporary improvement. Six cases with hemolytic streptococci in their blood recovered. Some of these during their convalescence developed secondary abcesses, but with increased resistance were able to overcome their infection. Four of the six that recovered were desperately ill when first seen, delirious, and in a low typhoid state. These were of the type in which the prognosis heretofore has been quite hopeless. The other two were cases that ran high temperatures, but had no mental symptoms and did not give the impression of being in very bad shape at any time.

We should not leave the subject of bacteremia without a word of caution as to the importance of careful detail in taking the blood cultures. Contamination of the culture is the easiest thing in the world, and a very great responsibility rests upon the bacteriologist in making a positive diagnosis.

So much for the known value of magnesium sulphate injections in streptococcemia. As Dr. Huggins admits, the reported cases are as yet too few in number. Now, as to the dangers of these infusions. There are the usual dangers involved in the giving of any intravenous infusion. The aseptic technique, of course, must be perfect. There is also danger in using an infusion in cases of extensive thrombosis. Embolism may be produced by the breaking off of a portion of a thrombus with the increase of blood volume.

Dr. Meltzer warns against the depression of the respiratory centers by magnesium sulphate, but in considerably over a hundred intravenous injections of from two to four hundred cu. cm. of a 2 per cent solution of the salt I have seen no toxic effects of any kind.

The method seems to be a valuable one in fighting puerperal streptococcic bacteremia, especially in the early stages of the blood stream infection.

RETRO-DEVIATIONS OF THE UTERUS IN THE PUERPERIUM AND IN NULLIPAROUS WOMEN.*

By FRANCIS C. GOLDSBOROUGH, M.D.,

BUFFALO, N. Y.

RETRO-DEVIATIONS of the uterus are so frequently met with that it is not an easy matter to determine their significance. By retro-deviations I wish to be understood as meaning either retro-flexions or retroversions of the uterus. These are more frequently encountered in women who have had children, and this shows that during the period of involution following child-birth, the uterus often does not return to its former position.

It was noticed that the percentage of retro-deviations occuring in hospital patients examined two weeks after delivery was much smaller than in private patients examined at the end of four weeks. This would indicate that the displacement occurs rather late in the puerperium.

For several years past I have been examining patients at the end of two weeks, and again two or three weeks later, my idea being to try to determine what were the points in the causation of the retropositions, and how they could be prevented.

The points noted at the end of two weeks were the degree of relaxation of the vaginal outlet; the position of the cervix, both in regard to its level in the pelvis, and especially whether it is located towards the anterior or posterior part of the pelvis, and its direction. I have measured the distance from the anterior lip of the cervix to the lower edge of the symphysis, but I found this measurement does not give me the information I thought it would; for in different sized pelves this measurement may be the same and yet the relative positions of the cervix may be quite different. In determining the position of the cervix I usually examine carefully with one finger so as not to alter its position by my examination. I next examine the fundus of the uterus, determining its degree of involution and its position in the pelvis.

I have notes on ninety-one examinations made at the end of two weeks and again at the end of a month. I find that my prediction made at the end of two weeks of what the position would be at the end of a month is correct in seventy-six cases; of these in fifty-seven cases it was predicted that the uterus would be in normal position. In nineteen it was predicted that the uterus would be back. This leaves fifteen in which prediction was incorrect. Of these fifteen, in eleven it was predicted that the uterus would be in a normal position, whereas it was found to be back. I ought to say here that most of these occurred in my earlier cases. In the remaining four, in which the prediction was not correct, it was predicted that that uterus would be back and it was found in normal position. In two of these cases, however, my notes are not altogether satisfactory and I really think they should not be included in the series. For the other two, the uterus was very well involuted when examined at the end of two weeks, and at that time was easily brought up into good position, where it evidently remained. This, however, is the exception, for in practically all cases it is my custom to bring the uterus up into position and ask the patient to return in a few days, when a pessary will be put in. And, with the exception of the two cases just mentioned, I have found that the uterus has returned to its retroposition.

My reason for not fitting a pessary has been partly to see whether the uterus would remain up, but more particularly to be sure that the patient would return for observation, so that there would be no danger of a patient wearing an ill-fitting pessary.

From the figures I have given I think it can be seen that in many cases we can determine at the end of two weeks whether or not the uterus will become retroverted or retroflexed. In fact we can differentiate three groups:

First Group.—In which we can be certain that, as involution continues the uterus will remain in a normal position.

Second Group.—In which we can be certain that the uterus would become retro-displaced.

Third Group.—In which we will be in doubt. This last group will become smaller and smaller as we become more experienced.

In the first group it is not necessary to do anything except confirm your opinion at the end of four weeks. In the second group treatment can be begun, as I will speak of later, whereas, in the third group, an examination at the end of four weeks will be necessary, and then we can correct any abnormalities that may exist.

It might be argued that it would be better to wait till the end of four weeks for your examination, when, if any malposition were found it could then be corrected; and this is the method that is generally followed. However, there are several objections. At this

* Read at the Annual Meeting of the Medical Society of the State of New York, April 29, 1914.

time your patient is up and about and considers herself well and expects, after your examination, to be told that she *is* well, instead of which you have to inform her that there is a slight malposition of the uterus which requires correction, and this is more or less upsetting to the patient, especially if she is at all neurotic. She may worry over it and feel that there is something more serious that you are keeping from her.

Again, too, at that time it is often quite difficult to bring the uterus up into good position without causing considerable pain. In fact, it is sometimes necessary even to anesthetize the patient before the uterus can be replaced.

It is because of these objections that I have undertaken these observations, in the hope that in the cases that would require correction of a malposition, treatment could be begun early, at a time when the patient is just getting up and still considers herself more or less an invalid, and would attach no special importance to the introduction of a pessary, but would consider it ordinary treatment, and thus not get her mind centered on the position of the uterus; also at this time there is never any difficulty in getting the uterus in a proper position.

Let us now consider for a moment the points found on examination at the end of two weeks which help us to determine what will be the ultimate position of the uterus.

As we know, the uterus, after delivery, reaches nearly to the umbilicus; it rapidly decreases during the first days of the puerperium, and descends into the pelvis about the tenth or twelfth day. Then as involution continues, the fundus falls either slightly forward or backward. The position of the cervix is our best guide as to whether the fundus will go forward or backward. If we find the cervix far back in the pelvis, near the sacrum, as involution progresses the intra-abdominal pressure will cause the fundus to tip slightly forward, whereas, if the cervix is in the anterior part of the pelvis near the symphysis, the reverse will occur. Often we find that the cervix is about in med-pelvix at the end of two weeks, or a little anterior, and the fundus will be on the promontory of the sacrum. In such cases, as the uterus becomes smaller, it will be forced backward by the intra-abdominal pressure. Here, if we introduce a pessary which will hold the cervix in the posterior part of the pelvix, as the uterus involutes the fundus will not have room posteriorly, and will be forced into an anterior position. The amount of relaxation of the vaginal outlet does not seem to play any part in the process, for, in many cases, with considerable relaxation the uterus will be found in a normal position; while in others with an intact perineum the uterus will be found retrodisplaced. The length of the anterior vaginal wall seems to play a part, for when this is short the cervix is held near the symphysis and the fundus goes back.

And, too, the amount of relaxation of the utero-sacral ligaments probably plays a part also, for when they are relaxed they allow the cervix to lie in the anterior part of the pelvis.

The percentage of cases of retroposition that can be cured by the use of the pessary in the early weeks of the puerperium is quite large. I attempted to design a pessary for use at the end of the second week of the puerperium, however, I have found that the ordinary pessary serves the purpose very satisfactorily. It has not been my experience to have any difficulty in holding the uterus in place with a pessary, but I have found it somewhat difficult to correct a malposition at the end of four weeks. Now it is my practice to begin treatment at the end of two weeks in those cases where I feel that the uterus will be retroposed, and I only wait four weeks in the doubtful cases.

Let us now consider the significance of retro-deviations. It must be admitted that they do at times occur and persist throughout life without giving any symptoms whatever. On the other hand, we know that many women who have had children suffer from displacement of the uterus, and their symptoms can only be relieved by its correction. In the majority of these cases, if attention had been given to the position of the uterus in the puerperium the malposition could have been prevented or corrected, at that time, and would not have recurred. Thus, the patient would have been spared the suffering and the necessity for operative relief.

The question as to whether retro-deviations in nulliparous women cause symptoms is open to argument. From my study of the behavior of the uterus during involution I have reached the conclusion that in many, if not all nulliparous women with a retro-deviation of the uterus, that position must be considered normal.

In practically all of these cases, when a pelvic examination is made, it is found that the cervix is in the anterior part of the pelvis, and if an attempt be made to push the cervix backward the anterior vaginal wall is immediately put on a stretch, which shows that it is short. Now, if we consider the position of the uterus in infancy, and again in adult life, we will see that the process is somewhat similar to that of the change during puerperal involution. In infancy the uterus is an abdominal organ, the cervix being at the brim of the pelvis; there is no angle between the cervix and fundus—but they are on the same straight line. During childhood the uterus descends into the pelvis, and my theory is, that if the utero-sacral ligaments are short,

and the anterior vaginal wall long, the cervix is maintained in the posterior part of the pelvis, and the intra-abdominal pressure causes the fundus to tip slightly forward—the so-called normal position.

On the other hand, if the anterior vaginal wall is short, and the utero-sacral ligaments long, the cervix is held in the anterior part of the pelvis, the fundus is forced backward by the intra-abdominal pressure—and we have a so-called retro-deviation which must, in this case, be considered normal.

Whether further observations will show that the above reasoning holds good in all cases of retro-deviation occurring in nullipara I cannot say, but I must insist that a very careful study of a case be made before attributing the symptoms to a retro-deviation.

Discussion.

Dr. Ralph W. Lobenstine, New York City: It has afforded me real pleasure to listen to the excellent presentation of this subject by Dr. Goldsborough. At the outset I must take exception to two statements made by him. The first one is: that in my personal experience I have found it frequently impossible, at the end of two weeks—as he has found—to be sure what the position of the uterus is going to be at the end of six or eight weeks. It has been my own experience as that of a good many others, that frequently the uterus may apparently be in first class position at the end of two or three weeks, and yet be retroverted at the end of six weeks. The reverse is also sometimes true as was recently called anew to our attention by Dr. Austin Flint, Jr.

The second exception I am forced to take to the doctor's remarks is: He stated that if a pessary were employed early enough—even in the second or third week—should the uterus be retroverted, operation could, in the majority of cases, be avoided. In other words he believes that the majority of these cases of retroversion can be cured with the pessary and without an operation. I cannot agree with this dictum. Many will be cured, but *not* the majority.

In considering the etiology of puerperal retro-deviations, we find three essential factors that call for consideration; in the first place: a lowered general muscular tone unquestionably plays a part in their development; a second factor is to be found in "subinvolution," and, thirdly, an old or previously existing misplacement—especially of the congenital type—is always apt to demand attention.

Subinvolution is, I think, the most important of these causes. It depends chiefly upon lacerations of the cervix and perineum; but also upon great overdistention of the lower anterior uterine zone in difficult or prolonged labors. I personally regard this as the greatest factor in subinvolution. In those cases that are tedious and in which the cervix fails to be properly drawn up into the lower uterine zone as in the normal cases, the anterior lip is caught between the symphysis and the presenting part, with a resultant œdema of the cervix and a marked overstretching of the lower segment. Again subinvolution is favored by greater or lesser degrees of infection. In those cases of so-called "congenital or infantile retroversion" or retroflexion, it has been my experience that in the majority of instances, the misplacement will recur after labor. Parturition cures these cases only exceptionally.

THE CARE OF THE ABDOMEN IN INFANCY AND CHILDHOOD.*

BY ELIZA M. MOSHER, M.D.

BROOKLYN-NEW YORK.

ONE of the great satisfactions that comes to the medical practitioner, is the constant growth in knowledge regarding the human body, and the introduction of improved methods for its care, both in health and disease.

During the past few years the abdomen has had the "searchlight" of investigation thrown upon it, with the result that we no longer pass it by in the physical examination of a patient with a little palpation and percussion to discover the degree of flatulence present or the induration that reveals the presence of a tumor behind its wall.

Auscultatory percussion to the trained ear, the X-ray-bismuth examination, and multitudes of abdominal sections reveal conditions within the abdomen, the presence and gravity of which were unsuspected until Glénard, of Paris, Sir Arbuthnot Lane, of London, and others pointed them out to us.

Partial and general enteroptosis, even without a mobile caecum, kinks or bands, has a damming effect upon the contents of the gastro-intestinal canal of far-reaching importance. We frequently find in the history of enteroptosis patients, a chain of symptoms, indicative of this condition, that extends back to childhood and infancy.

The causes active in the production of these morbid abdominal changes are as yet but partially known. One of the tasks therefore, before the profession today is to discover them and to inaugurate the important work of prevention. It is the object of this paper to outline some of the conditions, which in infancy and childhood, induce, or at least favor, the production of abdominal enteroptosis.

The musculature of the abdomen, as the "retaining wall" for the viscera lying behind

* Read at the Annual Meeting of the Second District Branch of the Medical Society of New York State, at Mineola, October 27, 1914.

it, has a far more important relation to enteroptosis than has been generally accorded it. Its condition in women, who have born many children, illustrates the power of pressure from within not only to over-stretch the muscles but also the fibrous tissue framework of the abdominal wall. Enteroptosis in some degree results in many of these women, and accounts for the ill health so common during and after the child-bearing period.

It is only needful to recall the delicacy of the abdominal wall in infants and young children to realize that infinite care should be given to its protection and development.

During the early months of infantile life the horizontal posture of the trunk retains the abdominal viscera in place, and the almost incessant voluntary movements, up and down, of the little legs and feet provide the best physical exercise for the development of the muscles in the abdominal wall. During the succeeding period, creeping and rolling on the floor add the needed increment of exercise to continue the normal developmental work. During these important periods of the infant's life the abdominal wall is unable to bear the strain of great pressure from inside without distention, and yet mothers and nurses ignorantly hold their infants in the sitting posture, trot and dance them up and down, jounce them over rough pavements in baby carriages, and in other ways stretch the abdominal wall and lengthen the mesenteric folds, whose office it is to hold the intestine in normal place. A stomach distended with food and loops of intestines filled with it, are heavy, and by their own weight easily fall below their normal level. In these and many other ways stasis begins. In its train follows the diarrhœa of irritation with flatulence, colic, and crying—all of which place added strain upon the muscle walls and mesenteric folds. Constipation also results, and it is not necessary that it shall be extreme to drag down the loosely hung transverse colon. Angulation at the splenic flexure easily follows this, with the almost inevitable dilatation of caecum and ascending colon.

In the typical "pot bellied" baby the abdominal wall has become so thin that it is easy in a good light to distinguish with the eye the outline of the various sections of the digestive tube. Each of its sections is usually more or less dilated because of the temporary closure of some or all of the natural gastro-intestinal gateways, viz., the pyloric, duodeno-jejunal and ileo-caecal.

Although we must confess that our knowledge regarding the influence of intestinal toxins is still limited, we recognize their far-reaching deleterious effects upon the general body. We know that they lower its tone, making it less resistant to the entrance of germs, and we suspect that they inhibit the work of the ductless glands, exhaust the sympathetic nervous system, and disturb the nutrition of the brain. If such be the case, the question arises whether the cephalic changes which usually exist in close association with the so-called "pot belly" in infants, may not, in non-syphilitic cases at least, be secondary and not the primary lesion, as has been thought.

There is a possibility also that in some cases of enteroptosis in adults the disturbance had its beginning in a similar though less extreme condition in infancy or childhood.

Congenital abnormalities seem not to be as rare as has been supposed. Injury to the developing ovum could reasonably occur under the influence of intestinal stasis in the mother.

In an examination of the abdomens of one hundred and fifty epileptics by the writer, during the past summer, two girls (aged six and eight), were found with abdomens in which no normal arrangement of the intestinal tract could be outlined; extreme stasis was present in both cases and both were dements. The family history of one gave indication of a hereditary intestinal disturbance that might have had a bearing on the case.

During the past year, in the practice of the writer, four epileptic cases (three under the age of fourteen), have been recorded, in which abnormal conditions within the abdomen were present that must have begun in infancy and may have been congenital.

The mobile caecum has been thought by some to be a congenital defect. However, that may be, the history of stasis dates back to childhood in many of the cases in which it is present. Among the one hundred and fifty epileptics examined, four "mobile caeca" were found, and in one hundred insane women, five of the most melancholy and suicidal patients had mobile caeca. The extreme gastro-intestinal stasis that accompanies this condition was present in all these cases.

Granting that enteroptosis, sectional or general, is the chief underlying cause of stasis in the gastro-intestinal canal, that weakness and distensibility of the abdominal wall, together with the vertical posture of the trunk, are prime factors in its causation; that infancy and childhood are periods of especial danger because of the still undeveloped condition of muscle fibre and other tissues, the flexibility of the spine, and the inevitable crowding of the abdominal viscera between diaphragm and pelvis in early attempts to maintain the sitting posture—granting these, what can be done to prevent the occurrence of enteroptosis in infants and children?

A few of the things that can be done are self-evident. Proper feeding with especial reference to the time element and the quantity of food given; a longer continuance of the horizontal posture of the trunk than is common; a life in the open air—free from bumps

and jolts; prevention of mental forcing and early precocity; development of the abdominal muscles by every means possible.

In detail it may be said, that while the importance of breast feeding has always been recognized, little has been done for the protection and development of the breasts of young women. Although this matter is one of the utmost delicacy, very much could be done to fit the breasts to perform their important function, if only mothers and physicians could be convinced of the need of it.

Proper support of the abdomen during pregnancy and throughout the nursing period should indirectly affect the function of lactation favorably. May it not be that the secretion of some one of the ductless glands becomes insufficient after the strain of childbirth and the secretion of milk is thus inhibited? Over distention of the stomach and intestines is common in bottle-fed babies and is due both to overfeeding and the flatulence that accompanies indigestion. This condition is one favorable to the production of stasis and should be guarded against with great care.

An infant under six months of age should not find out that there is any posture of the body other than the horizontal, and his acquaintance with the out-of-door world would be better made from a basket on a balcony, fire-escape, or even window (safely caged), than from a bumping baby carriage. When the abdomen is sufficiently developed to safely permit the sitting posture, and the child shows an interest in things around him, some modification of the "go-cart," supplied with proper springs and a seat upon which a child can balance easily, is better than the present baby carriage into the soft cushions of which he sinks, losing and gaining his equilibrium as his flexible little spine wobbles hither and yon. Habitual physical quiescence with little mental entertainment not only makes happy babies, but tends to keep them normal.

Little is needed for the development of the abdominal wall at this time, outside of perfect freedom of motion during waking hours. Petticoats, pinning blankets, and diapers should be so loosely fastened that they cannot interfere with the movements so important to a baby's digestive apparatus.

It is of great importance that infants shall early learn to lie upon the abdomen as easily as upon the back: no one position, however, should be permitted to become habitual. From the time a child has learned to walk easily, there is little danger of abdominal injury until school life begins. His play instinct keeps him constantly changing his posture and varying his movements. There are a few kinds of play, however, that may prove injurious. Those which encourage the sitting posture on the floor are not desirable nor are those which demand a stooping posture. To illustrate: a long-bodied slender boy of five had a present of a little van. He spent hours squatting and stooping to load it and often ran bent over pushing it before him. After a month or two of this, he had a severe attack of colic, the pain centering just below the navel. After some days in bed he recovered and resumed his play with the van. The pain soon returned; after the third attack he was brought to the writer, and it was easy by auscultatory percussion to locate a V-like drop in the transverse colon below the umbilicus. A few carefully directed upward movements of the legs (the boy lying on the operating table), replaced the colon to its normal position. He was given no medicine, but his mother was instructed to conduct a set of upward kicking exercises three days a day in the form of play. Under these the colon kept its place, the abdominal wall thickened, and the general health of the child improved rapidly.

I have for some time been asking the fathers of children I know to spend a few minutes with them daily, conducting a short series of exercises as play, to elevate the viscera and develop the muscles of the abdominal wall. A few of these are shown in the accompanying plates. I was glad to find in the *Outlook* for September 24, 1914, an article entitled, "Eight Minutes Play for the Growing Child," by Wm. J. Cromie. Illustrative exercises are shown, all but the last of which are excellent. To these may be added the so-called "mat exercises" of the gymnasium.

When school life begins, children are surrounded by a new set of influences, some of which tend to weaken the walls of the abdomen and crowd down its contained organs. Among these are: the rapid walk to school with a food-weighted stomach; the limitation of physical movement during study and recreation hours; the breathing of air contaminated by many breaths; bad habits of posture encouraged, if not produced, by unhygenic seats and desks and by the absence of book rests to prevent the dropping forward of the head and shoulders.

Many of the garments for children of school age are so shaped that they tend to produce round shoulders and flat chests with their accompanying encroachment upon the abdomen. Fortunately some of these unfavorable conditions are being changed at the present time. Miss Jessie Bancroft, Assistant Director of Physical Education in Greater New York, has by her originality and earnest effort established a "posture standardization" test for school children, and by it all grade teachers can mark their pupils in posture. This test has been made a prescribed part of the curriculum in the schools of Greater New York, and before graduation all pupils must

PLAY EXERCISES FOR THE DEVELOPMENT OF THE ABDOMINAL WALL IN CHILDHOOD.

pass an examination in posture just as they pass examinations in their regular studies.

The American Posture League is taking up the subject of children's garments, and has already perfected a model known as the "Good Posture Suit," for boys, which carries the American Posture League label. Gymnastic exercise with especial reference to the development of the chest and abdomen is of great importance during the school life of children.

With a clearer understanding of the dangers which menace the young, it is to be hoped that the children of the next generation will be given a better start in life than has been possible up to the present time.

FRACTURES OF THE NECK OF THE FEMUR: ITS TREATMENT.*

By JOHN B. WALKER, M.D.,
NEW YORK CITY.

INCREASED efficiency is being sought and secured in every department of the industrial world. Preventative medicine is everywhere extending its field of work with marked success. The study of occupational diseases has resulted in great economic saving of workmen, especially those engaged in handling lead and phosphorus. Brilliant advances have been made in the surgical treatment of appendicitis, cholecystitis and gastric and duodenal ulcers. Contrast all this with the unfortunate treatment of fractures when the average results are but little better than a generation ago. In no class of injury, except fracture, is the prognosis so uncertain as to the amount and duration of disability, the length of convalescence and the ultimate functional result.

Among all fractures, the most disabling is that of fracture of the neck of the femur. At first one can hardly appreciate how startling these results are unless he has carefully studied various series of statistics and wherever the usually accepted principles of practice are employed, the long side splints with Buck's Extension, then the average results are uniformly unsatisfactory. Of value in this connection are the conditions existing in sixteen cases of fracture of the hip observed by Scudder many years after the accident. In only two cases or 12 per cent could it be said that the leg was functionally useful.

The writer studied the records of 112 cases of fractures of the neck of the femur treated in Bellevue Hospital between 1906 and 1907. Only fifteen cases, or 13 per cent, recovered good function.

The British Fracture Committee reported ninety-one cases, of which eighty-seven were over fifteen years of age. Of these adults only twenty, or 23 per cent, recovered good function (Brit. Med. Jour., 1912, p. 1505).

Thus the best results in fractures of the neck are much poorer than the average results, 42 per cent in all groups of fractures of the femur.

To what are these startling results due? There exists the general belief that definite treatment toward securing restoration of form and function is hazardous and of little avail. Authorities have stated that "our prognosis in cases of fracture of the neck must always be unfavorable," and also "if he escapes with his life he has to be contented with loss of function, loss of symmetry and equipoise, and he is often obliged to go about permanently crippled." One acute observer has written that "it may well be that treatment is perfunctory because the prognosis is bad, and the prognosis is bad because the treatment is ineffective."

Fracture of the neck is usually considered to be a fracture of old age and, therefore, it is associated with an unfavorable prognosis. Undoubtedly this anticipated failure has unfavorably influenced the usual methods of treatment. That it does not occur entirely in old age is shown by the following statistics:

Nine cases occurred in patients under 30 years of age.

Twenty-one cases occurred in patients between 30 and 50 years of age.

Twenty-two cases occurred in patients between 50 and 60 years of age.

Forty-two cases occurred in patients between 60 and 70 years of age.

Fifteen cases occurred in patients over 70 years of age.

In three cases the age was not given.

On investigating these unexpected results, two most important facts have been observed. First, there has been an inefficient reduction of the deformity or no satisfactory attempt at fixation; second, there have been too early attempts at walking.

In consulting the records of various hospitals, which were dictated at various times by different surgeons, a considerable variation of nomenclature was found. Some adhered to the old terms of intra-capsular and extra-capsular, others included both varieties of fractures under the single term of "fracture of neck"; still others used Kocher's classification of fracture subcapitalis and fractura intertrochanterica. The terms of intracapsular are unscientific, inaccurate and misleading because the majority of cases do not fall distinctly into either group since they are "mixed." Intracapsular cases were supposed to include all those in which the lines of fracture were entirely within the capsule; extra-capsular, all those which were entirely without the capsule. The majority of fracture lines are oblique or diagonal and not strictly transverse, consequently a fracture may be intracapsular in front and extracapsular behind, inasmuch as the capsule is so placed that it includes more of the joint in front and below than above and behind. Kocher's terms, while more strictly anatomical, have not gained popular usage. Stimson's classification

* Read at the Annual Meeting of the Medical Society of the State of New York, April 29, 1914.

has been followed, *i. e.,* fracture through the neck or subcapital, and fractures at the base of the neck. The neck is apt to break in one of two places, at its junction with the head, or at the base, at its attachment to the trochanter.

DIAGNOSIS: *Outward Rotation* is generally present. If a line be drawn through the axis of the limb passing through the anterior superior spine and the tip of the great toe, the part of the limb lying to the outer side of this axis will be much heavier than the inner part. If now the normal support of the limb, the femoral neck be broken, the limb will naturally rotate outward by its own weight. When impaction occurs it will also be rotated outward, for the impaction takes place usually at the posterior part of the neck and the trochanter is twisted backward.

Shortening is the most important symptom and depends upon the lessening of the angle between the neck and the shaft, which approaches more to a right angle, upon impaction of the fragments or their displacement longitudinally. After the fracture occurs the strong muscles which are inserted about the trochanter contract and draw the trochanter upward, inward and backward toward the crest of the ilium, until checked by the resistance of the untorn part of the capsule or by the abutment of the lesser trochanter against the inner fragment.

If impaction occurs, the lower portion of the neck may be forced into the spongiosa of the head; under these conditions shortening is not more than one inch. If the impaction is separated and the capsule yields, the shortening may become increased to several inches. This is observed in cases where movements have been made, and the weight of the body has been borne upon the fracture.

Exact measurement is frequently difficult because it is so hard to keep both legs at the same angle with the pelvis; they should be parallel or equally adducted from the median line. The measurement should be taken from the anterior superior spine to the most prominent point on the internal malleolus.

Bryant's method is to be used. It consists in dropping a perpendicular from the anterior superior spine and measuring the distance from this line to the top of the trochanter and then comparing this with the other side. The top of the great trochanter lies at or a little below Nelaton's line, and about opposite to the symphysis pubis. Nelaton's line is determined by stretching a tape from the anterior superior spine of the ilium to the tuberosity of the ischium.

Crepitus is frequently elicited during the gentle rotation of the leg with slight flexion. False motion is also frequent.

Radiograms should always be employed when possible, as they establish the details of the impaction more accurately than can be secured by any other means of evidence.

TREATMENT: The aim of the treatment should be the restoration of the normal function of the hip joint, and in order to accomplish this result the normal anatomical form must first be restored. The same principles which are necessary to produce success in the treatment of fractures in other situations must also be employed here. In another group of cases, which is fortunately small, the age and weakness of the patient are so marked that only expectant or palliative treatment should be considered. It is not difficult for the surgeon to decide upon the conservative method in these cases. It is desired to suggest the plaster bandage method for the larger number of younger and more robust patients for whom our results would indicate it to be desirable and applicable.

As the chief object is to endeavor to obtain the complete or approximate restitution of the normal anatomical figuration of the bone, so it becomes necessary to overcome the displacements of the fragments. The proximal fragment being beyond our control we must endeavor to bring the peripheral fragment—the peripheral part of the femoral neck into alignment with the prolonged axis of the central fragment. The upper end of the distal fragment, the trochanter major is drawn upward by the action of the gluteals and rectus femoris in front; by the biceps, semitendinosus and semimembranosus behind; it thus becomes deviated upward, inward and backward (producing the shortening; the outward rotation is due to the mechanical weight of the leg, a result of gravity), hence it must be conducted forward, downward and outward. To accomplish this, two forces are necessary, longitudinal and lateral traction. These have been used by Maxwell and Bardenheuer, and especially developed by Bardenheuer and Whitman.

The larger number of fractures occur at the base of the neck and in most of these cases impaction is also present, immediately after the injury. In many cases, however, this impaction is broken up and the fragments are separated when the patient is brought to the hospital—especially Bellevue. In unimpacted cases there has been no difference of opinion regarding the attempt to replace the fragments in their normal anatomical position. But in those cases in which impaction remains there is a decided variance of opinion. It seems best after observing the good results obtained by Bardenheuer, Ochsner, Maxwell, Whitman and others to recommend that the deformity be reduced (while the patient is under the anæsthetic) by carefully separating and unlocking the fragments, not by tearing them asunder violently and harshly, but by carefully opening them as one would open a hinge.

Treatment should begin at once after the injury, before the muscles have time to contract, and so displace the fragments. Each day's delay renders the reposition and reduction of the deformity so much more difficult, and also permits the fragments to rub against each other, causing an increasing irritation which results in the pro-

duction of an hypertrophic callus. Exact early reposition of the fragments decreases the amount of callus and is indispensible for union in unimpacted fractures.

Method: The following procedure is employed. A careful examination is made of the patient's condition in order to determine the wisdom of giving an anæsthetic for a period of twenty minutes, this time being required for the application of the plaster bandage. As soon as the anæsthetic permits complete relaxation, a gentle examination is made of the fracture and frequently crepitus is found in those patients in whom impaction is thought to be present.

The patient is lifted to a pelvic support, preferably furnished with a perineal bar for counter pressure, the extended limbs being supported by assistants. The assistant holding the uninjured limb abducts it to the normal limit in order that it may serve as a guide, and incidentally to fix the pelvis. The injured limb is first flexed and rotated sufficiently to disengage soft parts that may be interposed between the fragments. It is then completely extended, and the assistant, by direct manual traction, overcomes the shortening, as demonstrated by measurement and by the relation of the trochanter to Nelaton's line, at the same time correcting the outward rotation. Still maintaining steady traction, he then adducts the limb to correspond with its fellow, the operator meanwhile supporting the joint and lifting the thigh upward. The pelvis should now be level and the extended limbs in exact correspondence in every particular. A plaster spica is then applied from the axilla to the toes. This should be carefully adjusted about the pelvis and trochanter. It should completely cover the buttock and be heavily reinforced beneath the joint and thigh, that it may be unyielding to pressure and therefore effective as a posterior splint to hold the limb at its proper plane.

Advantages: The prolonged plaster bandage maintains complete immobilization during the period of repair, overcoming the shortening and adduction. The adduction prolonged during four to six weeks is of marked importance in aiding the future ability to walk without impairment or limitation of motion. It further protects the patient from much unnecessary suffering on movement, and renders him far more comfortable.

Difficulties: It is difficult to apply the plaster bandage because it is necessary to have experienced assistants with sufficient strength to overcome the contractions of the strong muscles during the entire period required to apply the bandage, and it requires unusual steadiness and concentration of attention on the part of the operator, and each of the three assistants to maintain the exact relation of the fragments, for unless the bandage be applied accurately it will be either inefficient to correct the displacement or uncomfortable for the patient.

It is hard to make the proper adduction and at the same time to prevent shortening. It is very important to make adduction complete as it exercises direct traction upon the capsule tense in front and below. As it supports the sides of the fragments it tends to force them into alignment, so it assists in correcting the malposition of the inner fragment and brings the two into contact.

In impacted fractures, passive abduction affords the most practical method of reducing the deformity without danger of widely separating the fragments.

In many of the unimproved patients it is found that their inability to walk without discomfort is due to a restriction of adduction. Adduction is marked and added an apparent to an actual shortening of the limb. It is very important to overcome the shortening which is present in the majority of patients, for this shortening is responsible for most of their later disability.

There are a large number of patients who are taken care of by their family physicians and whom the surgeon does not see until several weeks after the accident. In these cases the deformity has not been satisfactorily reduced and the shortening still persists; therefore, even under anæsthesia, much greater force is required to adjust the fragments.

It has been found very unsatisfactory to depend for traction upon the manual efforts of our assistants, and frequently their combined strength has failed to reduce the fragments. I am sure that those surgeons who have had an extended experience all thoroughly appreciate the necessity of having powerful traction which can at any moment be applied or discontinued; it must be sufficiently flexible in its working to permit at first a small amount of traction, which later can be easily increased when more traction is required. During the last two years I have been using Dr. Lemon's extension apparatus and have found this of the greatest possible assistance in those cases where there existed marked shortening, with rigidity of the muscles and the adjacent tissues. The leg is held steadily and the plaster cast can be easily applied without releasing the extension. It can also be maintained until the cast becomes solid. This has given me great comfort in relieving my anxiety lest the fragments become displaced when the patient is first moved from the table after the reduction.

As we remember that the second cause of the bad results was due to the fact that too early attempts at walking were permitted, so we should never forget that in these fractures the joint is often affected by traumatic arthritis and that there is an unusually great strain upon the slender femoral neck. When the patient begins to walk, whenever possible, he should wear a Taylor hip splint or some simple modification of it to relieve the neck of the femur from the strain of carrying the whole weight of the body.

In a treatment designed to restore function, as distinct from the capacity to support weight, the

protection of the weakened part during the period of repair and reconstruction is almost as important as the preliminary reduction of deformity. No direct pressure should be permitted for many months nor until voluntary control has been regained and until passive movements are relatively free and painless.

I desire to present the following histories, feeling that illustrative cases will encourage other members of our State Society to undertake the above method.

Results: Case 1.—Male, forty-five years old, moderately stout, alcoholic. Four days before admission he fell upon the left hip. A diagnosis of fracture at the base of the femoral neck was made. There was ¾-inch shortening, and outward rotation existed. He was given an anæsthetic, and crepitus was then easily found. A plaster bandage including the foot was applied. At the end of four weeks he was allowed out of bed on crutches. At the end of six weeks the plaster bandage was removed below the knee. At the end of eight weeks the entire bandage was removed and he went about on crutches, without any pain. At the end of three months he was doing well, still using crutches. At the end of four months he had abandoned crutches and was using only a cane. At the end of six months he was at work. At the end of twelve months he had but ¼-inch shortening, and was able to do his regular work as a mechanic. Sixteen months after the accident he is without pain or discomfort and has but ¼-inch shortening; flexion and abduction are practically normal.

Case 2.—Male, 65 years of age, large frame, well nourished. Four days before admission he slipped and fell, striking his right hip. He was unable to move and was treated for a bruise for three days. He was transferred to Bellevue, where a diagnosis of fracture at the base of femoral neck was made; there existed marked outward rotation and 1¼ inches shortening. Crepitus was present and fullness in Scarpa's triangle. Under an anæsthetic a plaster bandage was applied. At the end of eight weeks the entire bandage was removed, but he was not permitted to bear any weight upon the injured hip until the fourth month. At the end of six months he used a cane only at times and was able to do work as a janitor. At the end of nine months he was in good condition, he could walk well without pain, go up and down stairs, and there was less than ½ inch of shortening; flexion and abduction was normal.

Case 3.—Female, forty-seven years of age, large and fleshy. Two days before admission slipped and fell striking upon the right hip. She could not stand when lifted up. A diagnosis of fracture at the base of femoral neck was made. There were present outward rotation, fullness in Scarpa's triangle, crepitus, and ½-inch shortening. Under an anæsthetic a plaster spica bandage was applied. At the end of five weeks the bandage was removed below the knee. At the end of eight weeks it was entirely removed and she was about on crutches. During the sixth month she used only a cane. At the ninth month she was able to do her normal housework without discomfort. She has no perceptible shortening; flexion and adduction is normal.

Case 4.—Male, seventeen years of age. Two days before admission he fell down an elevator shaft, a distance of five stories. He was unconscious, but recovered within the next twenty-four hours. There was found to be a fracture at the base of femoral neck. Outward rotation and 1¼-inches shortening were present. Under an anæsthetic a plaster spica bandage was applied. At the end of three weeks the bandage was removed below the knee. At the end of four weeks he was out of bed using crutches. At the end of eight weeks he was using a cane. At the end of four months he was working on a farm. At the end of six months he was doing his regular work as a mechanic. At the end of one year there is but ¼-inch shortening, he walks with only a very slight limp, adduction and flexion are normal, and at no time has he any pain or discomfort.

The favorable results exhibited by these four patients at the end of six, nine and twelve months; the absence of deformity, pain and discomfort; the freedom of motion and their ability to resume their regular work, are undoubtedly due to the method of treatment employed.

In no case has it appeared that the patient was harmed by the application of the bandage. In no case did it produce pressure sloughs and require to be removed. In but a few early cases did it need to be cut away at the edges on account of injury to the skin. The plaster bandages were applied with great care and patience on the part of the House Staff, to whose interest and effort much of the comfort of the patients was due. In a majority of the cases the plaster bandage was not applied until several days after the injury. In many cases the patients had been under treatment in some other hospital before being transferred to Bellevue. Although the long side splints were in use, all of these patients complained of pain whenever any movement was made (in changing the sheets, in changing from one position to another, in lifting him up to use the bedpan, etc.), the side splint did not give sufficient support to prevent movement between the fragments.

However, after the plaster bandage was applied the patients found that they could move about without pain and could help themselves in many ways. The nurses appreciated the many advantages which the patients gained through the comfort of a well applied plaster bandage. In general the patients were far more comfortable than others with similar fractures but under the routine treatment with the long side splint and Buck's extension. From the hospital standpoint this method of treatment is less exacting in that the patients being more comfortable they do not

require so much time and attention from the nurses.

Conclusions:

1. Fracture of the neck of the femur occurs under fifty years of age more frequently than was formerly believed.
2. Any injury to the hip followed by disability should suggest the possibility of a fracture of the neck, and requires an expert examination aided by an X-ray photograph.
3. Reduction of the deformity with complete immobilization of the fracture during the period of repair by means of a plaster spica bandage is advised in all suitable cases.
4. This is to be followed by early gymnastic movements, active rather than passive.
5. All weight bearing upon the fracture is to be avoided for from four to six months; in some cases even longer.

SUBACUTE AND CHRONIC ENTERIC INFECTION.*

By E. H. BARTLEY, M.D.,
BROOKLYN, N. Y.

TOWARD the close of the heated term it is common to see persons, both children and adults, suffering with subacute or chronic infection of the intestinal contents with intestinal catarrh. These are mostly persons who have suffered with one or several acute attacks of diarrhœa during the warm weather. They have only partially recovered, retaining an infection which interferes with the resumption of good health, and frequently attended with exacerbations of more or less acute disturbance. Whatever may be the cause of the first illness, there is always, sooner or later, bacterial infection of the intestinal contents. We might add, that when this infection continues for more than a week there is produced irritation and then inflammation of the intestinal mucosa. In the management of cases of acute gastro-enteritis we are prone to regard the case as cured when the diarrhœa is checked, the stools appear nearly normal and the fever subsides to normal. Very frequently, however, the child returns with the history of occasional outbreaks of transient diarrhœa, fever, foul smelling stools containing much mucus, and which attacks partially or almost entirely subsides, so far as the acute symptoms are concerned, after a dose of castor oil or of calomel. It is a common experience in children's hospital practice and in nurseries, that many children will come in with an acute diarrhœal disease, and under intelligent treatment will recover from the acute symptoms. If that child is kept in the hospital for a time it will suddenly show a rise in temperature and get sick again. This may be repeated at intervals of a week or two. Whether this is a re-infection or an outbreak of the original infection is difficult to say. In most cases I believe it to be the latter. But such occurrences are very common, and often very discouraging. Associated with these occasional attacks, or in some cases without these actue disturbances, there is loss of weight, marked anemia, loss of appetite or an abnormal appetite, and irritability of the nervous system. In very young children the loss of weight is rapid and extreme, and constitutes the cases generally known as cases of marasmus. Even though the baby can be induced to take and retain sufficient food, properly adjusted to contain the requisite energy and nutritive constituents, some cases continue to lose weight because they seem to have lost the ability to absorb food. There seems to have resulted so much degeneration of the epithelial cells covering the villi of the intestinal mucosa, that absorption is very defective. We know that the epithelial cells of delicate membranes rapidly degenerate under the action of toxins of bacterial origin, and if the action is prolonged they become necrotic and fail to regenerate. It, therefore, follows that some of these cases will utimately succumb to inanition in spite of any form of feeding at our command. It is not of these extreme cases, that I intend to speak, but of the milder persistent cases of enteric infection. I have in mind more especially those children from one to four years of age, who have resistance enough and recuperative powers enough to survive the acute attacks.

For our present purpose it is not necessary to discuss the kind of organism present, whether B. subtilis, B. enteritidis, B. mesentericus vulgatus, B. protens vulgarus, the Shiga bacillus of some one of the many varieties of the colon bacillus, or a streptococcus infection.

Streptococcus infection of the intestinal canal has been but slightly studied. Epedemics have occasionally been mentioned as occuring in hospitals and nurseries, where it has usually been disasterous. The writer has seen two such epidemics in the Sheltering Arms Nursery. The first was rather mild in character, occurring in 1910, and the second in 1913 severe, resulting in six deaths among about twenty-five cases. In two chronic cases studied by cultures from the stools but three organisms grew on plates. These were a hemolytic streptococcus, the colon bacillus and one other not identified. The stools were very offensive, one had a marked anemic, septic pneumonia and otitis media. The other had a double otitis media, symptoms of meningitis which finally recovered, continued loss of weight for a long time and very marked anemia. The red cells on two occasions were about 3,000,000, and the total leucocytes about 9,000 These two cases were followed for about three months. One of them is still under observation, after six months, and improving. The second or more severe case was removed from the hospital and lost sight of.

* Read at the Annual Meeting of the Medical Society of the State of New York, April 30, 1914.

For our purposes we may divide these cases of entiric infection into three groups, although it is not always easy to distinguish them: 1. Those in which there is chiefly carbohydrate fermentation with the production of organic acids, much flatus, colic, and a tendency to diarrhœa. There is not much fever, except in very acute cases, and a frequent production of acidosis, or acetonuria. 2. Those in which the proteoclastic organisms have gained the ascendency, and the lactic and butyric acid organisms have not kept pace with them. The intestinal contents are alkaline, there is usually less flatus and colic but more fever and toxic symptoms, and more profound nervous disturbances. 3. The cases of streptococcus infection and perhaps other highly toxic infections. The second and third groups are those which are most toxic and which give us most concern. In the cases due to a proteolytic bacteria there is almost complete anorexia, or a fitful and abnormal appetite, anemia and loss of weight. There is either diarrhœa or constipation, but usually the latter. The fever is persistent in many cases, lasting for weeks and resembling typhoid, but the temperature is erratic in character. It is more like a septic temperature with sudden and irregular elevations and depressions. These cases are considered by some as intestinal indigestion. I regard the indigestion as secondary to the infection. There is, to be sure, catarrhal inflammation of the membrane, which is most prominent in the lower ileum and upper colon where we know the organisms are always most abundant and most active. There is, in addition, fatty degeneration of the liver and kidneys in protracted cases, which points to infection. The nomenclature of the affection, then, will rest upon one's conception of the exciting cause. I prefer to regard these cases as primarily due to the infection, and that they are continued because of this bacterial infection, rather than to regard them as due to the results of this infection—the indigestion. The indigestion is the result and not the cause of the disease. This is demonstrated by the results obtained by treatment aimed at the reduction of the infection.

The third group are those due to a septic infection such as above referred to; a group not so well understood, but of serious import because of the remote or secondary effects in distant organs. I have purposely avoided a discussion of the toxic factor of these intestinal infections, because of a lack of definite knowledge of the toxic agents. The fact is almost universally accepted that there are toxic effects due to absorption from the intestinal canal of cleavage products of proteins when this tube is infected with foreign actively growing bacteria, or a predominating growth of some one of the normal organisms. What these toxic substances are has not been determined to our entire satisfaction. Indol and butyric acid have been blamed by Herter. It is very difficult to separate the reflex effects of the local irritant action of a fermenting mass in the digestive canal, and the effects of absorption of decomposition products of the contents of the canal. Studies of the urine, the stalagmometer and other physical and clinical methods have shown that there are abnormal substances absorbed from the intestinal canal during abnormal decomposition of the intestinal contents. Some of these absorbed substances are known to be harmless and certain others are known to be more or less toxic. These latter are probably complex amins. Methyl guanidine and hydroxyphenyl-ethyl amine have been recently mentioned as two of these toxic agents. The latter of these is a derivative of tyrosine produced by bacterial action. The toxic effect of these or other agents is more evident in acute cases. How much toxic action there is in the chronic cases it is difficult to say. In those cases attended with fever and prostration we are warranted in assuming that there is a toxic element. In no other way can we explain the infection of distant glands, the occurrence of broncho-pneumonia, skin eruptions, boils, and the various neuroses, such as tetany, chorea, etc. It must be admitted, however, that while we are in possession of some facts pointing to the existence of toxemia, much is yet to be learned on this subject:

Treatment.—The treatment of these cases is largely dietetic, although drugs have an important use. Whether we regard the case as a chronic intestinal indigestion or chronic infection, the careful selection of diet is important. There are three indications in the treatment of chronic putrefactive fermentation or in infection of the gastro-intestinal canal:

1. To modify the intestinal culture medium.
2. To diminish the activity of the organisms by the use of antiseptic drugs, or by the implantation of foreign antagonistic bacteria.
3. To evacuate the bacteria and their toxins and mucus by irrigations and laxative agents.

To modify the intestinal culture medium then we must use an anti-putrefactive diet. Or, introduce antagonistic organisms such as the yeasts and the various lactic acid producing organisms.

At the outset we may say that the food should be such as will not irritate the intestinal membrane and will not further stimulate the growth of organisms. As the proteoclastic organisms are believed to produce the more dangerous side-products or cleavage-products, it would seem logical to withhold meat products, eggs and predigested meat preparations. There are on the market several popular preparations of this last class which my experience has taught me to avoid. Casein appears to be an exception to the general statement that proteins should be avoided. The so-called anti-putrefactive diet consists of cereals and milk or a lacto-farinaceous diet. When the harmful bacteria are such that act on the proteins, it is logical to withhold the proteins, or, at least those proteins on which they act most easily.

Animal flesh are most putrefactive under these circumstances. Eggs are less putrefactive than meats. Even the fat of meats is more harmful than butter, except, perhaps, bacon fat. This seems to be well borne by most adults and even young children. Cereals are well borne by even quite young infants, hence, barley water, rice water, cream of wheat or farina or arrow-root gruels serve to check the activity of proteolytic bacteria, by changing completely the intestinal culture medium. Whey and these gruels, mixed, make an excellent mixture to use with such cases. Skimmed milk or albumin milk can be given with equal advantage. Experimental tests have often demonstrated the value of milk as a check upon the bacterial decomposition in the intestines. It seems to be the casein chiefly and the milk sugar, to some extent, to which this favorable action is due. Hence, casein and lactic acid are the chief beneficial agents. Cows' milk fat, on the other hand, is a disturbing element in many of them and skim milk or partly skimmed milk is in many cases better borne than whole milk. At any rate cream and top milk mixtures are not well borne. Other fats, as butter, bacon fat and olive oil are far better borne, *i. e.,* fat in bulk is less easily attacked by bacteria than the natural emulsion in milk, probably because of the vastly less surface exposed. I know of no other explanation of the fact that butter may and often can be taken without harm while the fat in milk creates disturbances.

It is this antifermentative action of casein that is one chief value of "eiweiss milch" of Finkelstein. Cereals are not fermentable until converted into sugar, and then the acids which result, as well as the organisms which ferment them, are antagonistic to the proteclytic bacteria. Rice is included in the lacto-farinaceous diet and rice flour for young infants is available and frequently used with advantage in making cereal gruels.

Our second indication is to diminish the activity of the bacteria by antiseptic drugs. It is admitted on all sides that the use of antiseptic drugs in dealing with intestinal infections is disappointing. The use of salol and all other soluble antiseptics do little if any good below the stomach and duodenum. As the chief putrefactive or anærobic organisms are active only in the lower portion of the ileum and in the upper half of the colon, only the very insoluble antiseptic agents reach the seat of their greatest numbers and activity. Among these insoluble available antiseptics are a few of the bismuth salts, such as the subsalicylate, beta-naphthol-bismuth, thioform (B.-dithio salicylate), eudoxine, etc. Thymol, salactol, guaiacol carbonate, creosote carbonate, are some of the available aromatic antiseptics. Hexamethenamina is becoming popular, but is too soluble and hence does very little good except in the stomach.

More efficient than any of the above is ichthyol. Owing to its disagreeable taste it is difficult to administer to children. Ichthalbin and ichthio form are nearly tasteless and powerful antiseptics and are nearly insoluble in water. They may be given in doses of one or two grains three times a day. They must be given for a long time to be of much service. They may be given in combination with an equal amount of thoiform. Calomel is a well tried remedy, and one which repeated experiments have shown to reduce the indican and ethereal sulphates in the urine. I find it a very efficient remedy when combined with sodium benzoate, and in this form it should be given for several days in laxative doses. This combination seems to stimulate hepatic function, in spite of the denial by some of this effect of calomel alone. The sodium benzoate does not reach the lower intestine. It is claimed for these antiseptics, not that they kill the bacteria, but that they do decrease their activity, as shown by the relief of the putrid odor of the stools, the fever, the excess of indican and ethereal sulphates in the urine.

The third indication is to evacuate the bacteria and their toxins by colonic lavage and laxatives. The irritation of the bacteria causes an abundant secretion of mucus by the mucous membrane in which the bacteria find a good nidus for multiplication. To attempt to disinfect a mass of this gelatinous material is manifestly futile. There is no other alternative but to sweep it out and thus rid the canal of the bacteria and their poisonous by-products.

The choice of the laxative to be used is a matter of importance. It should be a non-irritant agent, and should not be given in more than a laxative dose. We naturally turn to olive oil or castor oil for such a laxative. Practically we have repeatedly observed that when such a dose of castor oil is given, a marked feature of the resulting stool is a considerable amount of mucus. No other laxative is attended with the evacuation of so much mucus. I regard this as a matter of great importance, because it is in this mucus that the bacteria live and grow. Olive oil does not do the work so well as castor oil, although a mixture of the two is an eligible substitute. The emulsion of castor oil of the national formulary, containing about one-third its volume of oil, is a palatable mixture for infants and young children. A suitable emulsion for older children may be made by shaking in a bottle a mixture of two volumes of oil and one of syr. yerba santa aromat, or equal volumes of syrup of rhubarb and castor oil. I usually give a daily, mild, laxative dose of one of these emulsions for from one to several weeks. I never give a cathartic dose, after the initial dose.

The transplantation of foreign bacteria or yeasts into the intestinal culture medium has been disappointing, in my hands, in these chronic cases. It is only in exceptional cases that I have seen much benefit. I have repeatedly tried the popular bacillus bulgaricus and have repeatedly failed to accomplish relief.

To sum up.—To change the intestinal culture medium we use a lacto-farinaceous diet. When we wish to quickly disinfect the digestive canal we will do best with calomel. When we wish to get a long continued effect in diminishing the activity of intestinal bacteria we should select hydrochloric acid, menthol, thymol, thioform, or bismuth subgalate if we conceive the fault to be in the stomach. If we conceive the chief trouble to be in the intestines we may select salacetol ichthalbin, ichthroform, thymol, or small doses of calomel with benzoate of soda. For the removal of the bacteria and their toxins, in conjunction with the above antiseptic agents we may employ an emulsion of castor or olive oil.

Out door air, a high dry climate and other hygienic measures, with tonics, will be necessary to improve the appetite and invigorate the system generally.

Discussion.

Dr. DeWitt H. Sherman, Buffalo.—Dr. Bartley referred to cases of streptococcus infection, but did not mention the use of vaccines or serums.

The treatment should be surely as supportative as possible, and, second, as far as diet is concerned the soil inhibitive for the bacterial infection should be used. To assist further, drugs, as antiseptics, amount to little.

We used vaccines in Buffalo, not only without good results, but often with bad results, the condition of tetany occuring on two to three occasions.

But as regards serums, the results seemed different; while not as useful as in selected cases of acute tonsillitis, yet they seemed often to turn the tide and to assist in a much more rapid and uninterrupted recovery.

I feel serums in proper cases are deserving of serious consideration.

Dr. W. Morgan Hartshorn, New York City.—From our experience in the Roosevelt Hospital last summer I wish to add a word emphasizing the value of eiweiss milch in acute and subacute toxic cases. We had several cases, I remember at least four, which had resisted our usual routine treatment. The use of protein milk obtained from fat free milk, prepared by the Walker Gordon Company, was followed by an immediate and striking effect.

Dr. Thomas S. Southworth, New York City.—Not much has been said in regard to Keller's malt soup, but it has a definite value in the treatment of subacute and chronic cases. It may be made up with fat free milk and supplied the necessary carbohydrates in a readily absorbable form to take the place of the fat. Aside from eiweiss milch there is nothing that changes the bacterial content of the intestinal tract more than malt soup. It is well borne in the mucoid type of disease. In the group of cases classed as colitis the child should not be allowed to reach the extreme point of reduction in weight that formerly prevailed. This can to a large extent be prevented by proper food and by not waiting too long before giving the types of food necessary to keep the fat of the body up to a reasonable point.

GLAUCOMA FROM THE OPERATIVE STANDPOINT.*

By PETER A. CALLAN, M.D.,
NEW YORK CITY.

THE various types of glaucoma form about 1 per cent of all eye diseases. This small percentage is more than offset by the very important role glaucoma plays in the welfare of so many human beings.

There is no eye disease that requires more prompt and decisive action on the part of the attending surgeon. In the non-inflammatory forms, especially in those very advanced in years whose span of life is but short, miotics may be depended upon to retard the usual progress of the disease so that a modicum of vision remains until the final lethal outcome. Even here operative interference is preferable.

In the inflammatory forms, surgical interference is imperative and the sooner the hypertension is reduced the more satisfactory the result and blindness averted. Twenty-four to thirty-six hours may be profitably used in inflammatory cases prior to the operation. In order to reduce the inflammation, tension, and safer for both surgeon and patient, leeches to the temple with hourly instillations of the following: ℞ salicylate eserine, 1 per cent; muriato pilocarpine, 2 per cent; sol dionin, 10 per cent, in the affected eye. By pushing the drops, the inflammation is lessened, the dilated pupil more or less contracted, thereby making the operation easer and safer.

In the diagnosis of acute inflammatory glaucoma there should be no difficulty to the expert, but in simple glaucoma it is often not so easy.

In making diagnosis of non-inflammatory glaucoma, the usual routine is followed; the vision is taken, the ophthalmoscopic examination made, tension, and visual fields taken. To my mind the relative importance of the various tests are as follows:

1. Visual field—which may be the only one of the several tests to show any morbid change in the early stage of the disease.
2. Tension.
3. Optic nerve changes, excavation, etc. Early in simple glaucoma the nerve head may be swollen instead of excavated.
4. Vision—may be fair, even good, with marked limitations of visual field, and excavation of optic disk.

* Read at the Annual Meeting of the Medical Society of the State of New York, April 28, 1914.

In estimating the tension of the globe it is not possible to accurately determine small degrees of hypertension with our fingers. The only certain method is by an accurate Schiotz's tonometer tension. Tension varies during the daytime; it is less than during the night.

Operations.

Querin, in 1769, performed paracentesis for the relief of tension. It by no means follows that he was the first, but he put himself on record, and thereby got the credit. This procedure was followed more or less generally for over a century. There were many modifications, corneal, and sclerial puncture; even to the introduction of a trocar into vit. chamber, and a evacuation of some of the humor. It was advised to enucleate in cases of absolute glaucoma so as to protect and prevent the disease in the fellow eye.

Von Graefe, in 1856, either by reasoning or happy inspiration, first made and advocated an iridectomy for the relief of glaucoma. Rest assured that the method did not meet with immediate universal approval; not a few surgeons, even as late as the early 70's, continued to perform repeated paracentesis for the relief of glaucoma. Various theories were advanced as to the cause of the beneficial effects of an iridectomy; how it relieved the tension.

Between the time of Guerin and Von Graefe there was no uniformity or general acceptance of any operation for the relief of glaucoma. To Von Graefe belongs the credit and undying honor of a procedure that has been a veritable boon to mankind. His theory has been discarded as to how the operation cures. His method has been improved.

Von Graefe selected the limbus cornea at most 1 to 1½ mm. behind it for the point of entering the ant. chamber, the wound to be 6 to 9 mm. in width, and about 4 mm. of iris removed. He deemed it essential that the iris sphincter should be removed. With but few exceptions this view and method found general acceptance for many years.

Hancock, in 1860, did a radically different operation. He held that spasm of the ciliary muscle, or its atrophy, caused circulatory disturbance. Acting on this idea the incision included ciliary muscle and body, opening up a passage between the vit. and ant. chambers.

Hancock found but few imitators owing to the dread of wounding the ciliary body. However, those who did the operation were well satisfied with the good results obtained. At the present time it is regarded as an historical incident. In 1866 de Wecker, and in 1867 Stellwag advocated ant. sclerotomy on the ground that Von Graefe's theory as to the beneficial effect of an iridectomy in glaucoma was erroneous.

De Wecker found very soon so many prolapses, and incarcerations of iris following the sclerotomy, that he was forced to abandon the operation.

It was not entirely given up inasmuch as a combination of sclerotomy and iridectomy was done by several surgeons. This was the period when some surgeons thought the more iris removed the better the result. The large incision at the sclero corneal border permitted a large amount of iris to be excised.

De Wecker again took up ant. sclerotomy, and added to it iridodialysis so as to overcome the drawbacks following a simple sclerotomy. At present neither a simple ant. sclerotomy nor any combinations to avoid prolapse or incarceration are resorted to by ophthalmic surgeons unless in exceptional cases.

In Hancock's operation an opening was obtained between ant. and vit. chambers; other surgeons have done this in a safer way, notably Heine's cyclo dialysis. The entry is made through a scleral opening about 5 m.m. back of limbus, a spatula is entered and worked forward into ant. chamber.

Badal and Lagrange, in 1892, advocated stretching and excising the infra-trochlar branch of the fifth nerve. This was done on the Donders theory of glaucoma viz a neurosis affecting secretion.

Excision of the sup. cervical gunglion, suggested by Abadie, and first performed by Jonnesco in 1897, reached the zenith of its popularity about ten years ago, due to the premature publication of a series of 100 odd cases by a distinguished professor. The favorable results did not last, and as the experience of others were not favorable the operation was soon abandoned.

Lagrange, in 1906, introduced his irido sclerotomy. This gained favor until the trephine was generally substituted for the scissors in performing the operations.

Trephining.—Fergus was about the first to substitute a trephine for the scissors in the Lagrange operation. He, however, added to the operation a cyclodialysis. At the present time the trephine is very much used by ophthalmic surgeons in the United States and abroad.

Elliott's reports of successful cases have made his method the vogue at present. There is no question but that the results are so far satisfactory. That the tension is reduced; that filtration takes place through the circular opening.

The operation requires delicate manipulation to perform. It must be carefully done to avoid buttonholing.

The operations for the relief of glaucoma here mentioned, by no means comprise all. Many surgeons have made modifications, and even original procedures which have not given satisfactory results. In fact, few have sur-

vived. Paracentesis is only palliative. Ant. sclerotomy without iridectomy is not safe. Opening up a passage for drainage between the vit. and ant. chambers causes too much traumatism. The removal of the superior cervical ganglion, while reducing the pupillary area, did not stop the progress of the disease. Up to the present time an iridectomy, as practised by Von Graefe, is still the operation of choice by the bulk of ophthalmic surgeons.

Certainly in acute glaucoma, when carefully performed, it gives excellent results. In simple glaucoma statistics show 50 per cent of cases where the disease has been arrested. There is no doubt an iridectomy in inflammatory glaucoma gives a higher percentage of cures than in simple glaucoma. There may be several explanations for this discrepancy. In the acute type there is no waiting any lengthy period for the operation; it must be done soon if the eye is to be saved.

In the simple form one eye may be affected for years before it is discovered; destructive changes have taken place which no operation can restore. The fellow eye may have normal vision with slight limitations of the visual field. The surgeon hesitates with such vision to insist on an operation as the patient cannot appreciate the need of haste, so the time drags along until deciding cupping with atrophy ensues. An operation then does not restore what has been lost and perhaps does not stay the beginning optic nerve atrophy.

In other words, if the iridectomy had been done when vision was good no marked cupping of optic disc, with but slight increase of tension, and not much impairment of the visual field, the result would be more satisfactory.

From personal experience I feel that the trephine has come to stay. In cases of absolute glaucoma with recurrent attacks of inflammation, I made posterior sclerotomies with 5 m.m. trephine some twenty years ago with satisfactory results as far as the pain and inflammatory attacks were concerned.

Trephining is not indicated in acute glaucoma. —The traumatism is too great when added to the inflammatory process present in such cases. I feel that the percentage of good results in simple glaucoma resulting from an iridectomy would be higher provided the operation were done at the beginning of the disease, as delay always means more destructive changes.

The scleral wound should be 10 m.m. wide and 2 to 3 m.m. back of limbus cornea. The iris should be only buttonholed; always leave the sphincter intact. The slower the scleral wound unites the better the results.

Discussion.

Dr. Pooley spoke of the number of substitute operations suggested in place of iridectomy, and noted that none of them had maintained their early promise. Some were dangerous; others, inefficient. All had had their day and were now practically obsolete. We should not be too ready to accept the operation of trephining, as it has been in use too short a time for the necessary study of definite curative results. It certainly is not suited to the cure of acute glaucoma, although it has been recommended even for that purpose. In view of the brilliant results of iridectomy and the complete reliance we can place on it in acute glaucoma, one would scarcely have the hardihood to replace it by trephining. The most useful suggestion made by Dr. Callan is his insistence on the importance of early operation in glaucoma simplex before continued tension has affected the vitality of the optic nerve. An early diagnosis based on tension, excavation, limitation of the field, or a combination of these data, should lead to prompt surgical interference.

Dr. Callan, in closing the discussion, said: Dr. Pooley was right. That enough time had not elapsed since the introduction of trephining to be absolutely sure as to the final results. Still I feel that trephining has come to stay.

CAUSES AND TREATMENT OF CHRONIC CONJUNCTIVAL AFFECTIONS IN CHILDHOOD.*

By ANNA WESSELS WILLIAMS, M.D.,
Bureau of Laboratories, Health Department.
NEW YORK CITY.

AT PRESENT the comparative incidence of serious chronic conjunctival affections throughout most of the world is not great. But in certain areas practically all of the natives exhibit more or less chronic lesions in the conjunctiva, chief among which both in frequency and dangerous consequences is the condition called trachoma.

Several such areas exist in our own country—for example, in the Kentucky Mountains and on some of our Indian Reservations and many of our immigrants come from such areas in the Eastern Hemisphere. Therefore, since this disease is supposed to spread insidiously, it behooves us, even though we come from a part of the country apparently free from such a condition, to keep in mind the known facts in regard to it, especially in regard to its etiology and prophylaxis.

Furthermore, since New York City is the port of entry of most of our immigrants, and since, however careful, the port officers find it difficult to exclude diseases in insidious stages, it is most of all the duty of the citizens of New York State, and in particular, of New York City, to take into serious consideration the prevalence, causes and prevention of such conditions.

Until recently in New York City chronic con-

* Read at the Annual Meeting of the Medical Society of the State of New York, April 30, 1914.

junctival affections and trachoma were almost synonymous. For, in the great majority of these chronic conditions, follicles are present, and when follicles are found on the inner surface of the lids the condition is called "granular lids." This meant—and still means to some, I am sorry to say—"trachoma." Thus New York City, especially on the lower east side, had the reputation of being a hot bed of trachoma.

For the past four years we have been making a concentrated study of the chronic conjunctival affections in the children of the lower east side of this city,* and as a result we have shown that the great majority of conjunctival follicles, however may there be, and wherever situated, are under our condition of study, benign.

By our *conditions of study* I mean that during the whole time these cases were under observation we sought out and treated in their homes as well as at the clinics all cases showing secreting conjunctivitis of whatever grade, but particularly the acute cases.

In Table I, second column, we have indicated why we lay special emphasis upon the acute cases. Among the 2,500 and more cases of folliculosis (follicles on or otherwise apparently normal conjunctiva) only about 300 have subsequently had from time to time an added infection (follicular conjunctivitis); among the 700 and more cases that have first presented themselves as follicular conjunctivitis, 100 have later shown a thickened conjunctiva, due to apparent diffuse hyperplasia (papillary conjunctivitis, formerly called acute trachoma); among the 350 cases first presenting themselves as papillary conjunctivitis only ten have shown cicatriceal changes and these are complicated by the fact that they had earlier had the operation of expression. Now, as you see under *Causes* in this table, the chief cause of the more intense conditions (groups 2-4), according to our findings, is infection with hemoglobinophilic bacilli. The influenza bacillus is the type of this group of microbes, and we have found that the Koch-Weeks bacillus also belongs to it in a *strict sense.* The Koch-Weeks bacillus, you remember, is the cause of acute contagious conjunctivitis or "pink eye." The bacilli found in our acute contagious conjunctivitis cases (we have studied about 500) are absolutely indistinguishable from those found in our chronic cases, therefore we may conclude that these chronic cases act as carriers for the acute and that the uncared for acute cases may become chronic cases. Hence our reason for hunting up the acute cases, and following them up until we are sure of cure.

Our conclusion that these hemoglobinophilic bacilli are the cause of many of these more chronic conditions as well as the acute, was strengthened by the facts that we found the famous "trachoma inclusions" coincidently with these bacilli so frequently at certain stages of inflammation, and that morphologically inclusions and bacilli have a similar cycle of growth (Chart). We have found these inclusions also in a certain number of cases of acute conjunctivitis. Similar cells inclusions, as you know, have been found in gonorrhoral ophthalmia but we have shown that the gonococcus also in its growth may show granular changes similar to those seen in the cell inclusions in these cases, so we have come to the conclusion that trachoma inclusions are simply nests of growing bacteria in the epithelial cells of the conjunctiva under certain conditions, hemoglobinophilic bacilli in some cases, gonococci in others, and possibly a few other bacteria in others. Table II shows the various hypothesis in regard to the nature of these cell inclusions.

If our hypothesis is true, it means that we must more than ever try to establish practical measures for caring for the acute conditions, as the best prophlaxis for the chronic. In the homes of the well-to-do this is done more or less; though I do not think practicing physicians as a whole realize the importance of being sure of a cure before the case is dismissed. In the homes of the poor it is not done so far, and the larger part of the public school children come from such homes. The dispensaries with their out-patient department are not adequate under the present ssytem. The health departments are not yet adequate. Perhaps the ideal way—and it seems to be the way we are approaching—is co-operation between the Health Department, the Education Department and the dispensaries.

In the meantime, until a practical plan is worked out, the cases among the poor should be cared for, and we propose an extension of the school clinic plan which we have started experimentally in P. S. 21.

* *Journ. Inf. Dis.*, 1914, XIV, 261.

CHRONIC CONJUNCTIVAL AFFECTIONS IN CHILDREN

Diagnosis	No. of Cases	Causes
Folliculosis	2,500 (300) (5)	Continued slight irritation tendency on a lymphoid.
Follicular Conjunctivitis	700 (100)	Staphylococcus pyogenes. *Hemogloninophilic bacilli* (Influenza and Koch-Weeks B.). Pneumo-streptococcus group. Other microbes.
Papillary Conjunctivitis	350 (10)	*Hemoglobinophilic bacilli* (in a susceptible eye). Other microbes occasionally.
Cicatrical Conjunctivitis	100	Repeated infections with *hemoglobinophilic bacilli* and certain other microbes. Tubercle bacilli. Treponema pallidum. Gonococci, diphtheria bacilli. Operations, etc.
Chronic Catarrhal Conjunctivitis	50	Morax-Axenfeld bacillus. Repeated attacks of other microbes. Unknown microbes. (Spring catarrh.)

HYPOTHESES IN REGARD TO NATURE OF "TRACHOMA INCLUSIONS."

I.	Peculiar organisms, called chalmydozoa, causing "trachoma"	Halberstaedter and Prowazck 1907
II.	Involuted gonococci equals "microgonococci," causing "trachoma"	Herzog ..... 1910 Addario 1910
III.	Cell degenerations	
IV.	An unknown microorganism having nothing to do with trachoma,, causing conjunctivitis	Noguchi and Cohen 1910
V.	Certain bacteria growing in intracellular nests—hemoglobinophilic bacilli in certain cases of papillary conjunctivitis ("acute trachoma"), gonococci in gonorrhœal conjunctivitis, and probably one or two other species of bacteria in certain other cases	Williams 1912
VI.	A specific bacterium, causing "inclusion conjunctivitis"	Noguchi and Cohen 1913

I will leave Dr. von Sholly, who has had practical charge of this clinic, to tell you how it is managed and what results we have so far obtained.

By such a system we may reach more quickly and surely all of these cases due to the causes enumerated in Table I. We believe that several of these causes operating in uncared-for eyes in these children, especially in those with a tendency to the production of lymphatic tissue, may produce the condition called trachoma, including the so-called typical pannus and fibrous tissue formations.

As to the treatment of eyes that already show marked chronic changes when we first see them, we do not differ materially from the methods given in text books on ophthalmology. But we emphasize the individual factor and give on the whole much less energetic treatment than is recommended. With our rules of hygiene carried out and our cases shielded from reinfection from acute cases in the homes, it is surprising how little treatment the majority of cases seem to require.

We have summarized our studies as follows:

1. The written descriptions of trachoma do not agree as to a clinical or a pathologic entity.

2. Among the children of sixty public schools in the crowded lower East Side of New York City (supposed to be a hotbed of trachoma) during the past four years we have found no cases of conjunctival affections answering in their entirety to the classic descriptions of trachoma.

3. None of the 3,000 and more cases of follicular affections in these children have developed cicatricial changes due to infection; on the contrary, the great majority of them now present normal conjunctivas. We attribute these results chiefly to the following measures:

(a) The carrying out of preventive methods of treatment, such as ophthalmia schools and school clinics, summer camps, mothers' demonstration classes, home instructions, and "follow-up" work.

(b) More minute care of acute, as well as of chronic cases, including the specific treatment given at clinics and the follow-up work in their homes.

(c) Non-operative procedures in a large number of cases formerly operated upon.

4. Trachoma inclusions are nests of growing bacteria in epithelial cells—hemoglobinophilic bacilli in certain cases of papillary conjunctivitis, gonococci in certain cases of gonorrhœal conjunctivitis and possibly other bacteria in certain other cases of conjunctivitis.

5. If trachoma is present or should be introduced among our school children it may be controlled by methods which are within practical limits.

MANAGEMENT OF ABNORMAL OBSTETRICAL CASES.*

By W. T. GETMAN, M.D.,
BUFFALO, N. Y.

IT would be impossible in a short paper, such as I am presenting today, to cover the management of any large number of abnormalities in obstetrics, or to take up in detail the treatment of even a small part of them.

What I shall endeavor to do is to outline roughly the treatment of some of the more common complications that we meet with more or less frequency.

I would first like to refer to the status of the general practitioner as an obstetrician and the demands that are made upon him. A man accepting maternity cases should devote all the time necessary for the best interests of the mother and child, and this is no small matter, as you have all realized. He should make the requisite urinalyses to avoid nephritic toxemia and eclampsia, antepartum examinations and pelvic measurements, careful repair of any lacerations, and post partum examinations to detect subinvolution or uterine displacement. To treat abnormalities successfully, we must devote sufficient time and study to make a correct diagnosis of our case, and thus be in a position from this study to bring it to a successful conclusion.

As every one admits (with the exception of the patient possibly), the general practitioner is badly underpaid for obstetrical work; and the remedy for this is doing a better class of work than is generally done, and then demanding a fee commensurate to such service.

The American public is demanding steadily more of physicians in all branches of medicine and surgery, and the men who are meeting this

* Read before the Ontario County Medical Society, at Canandaigua, N. Y., October 13, 1914.

demand are the ones who can ask and receive larger fees than those now common.

The surgeons will agree with me, I think, when I say that a properly conducted pregnancy, confinement, and puerperium is more difficult and time consuming than an ordinary appendectomy; and there is no reason why the charge for one should be smaller than the other.

I consider diagnosis as the groundwork that all treatment must rest upon, and many of our abnormal cases would not find us unprepared if we had done the necessary preliminary work. One very important part is to acquire the ability to make diagnosis by external palpation (so as to avoid needless internal examinations), and this can only be acquired by frequent, painstaking examinations, checking up the antepartum diagnosis by our findings at labor. The same might be said of diagnosis of position and presentation by vaginal examination during labor; for the man who says, "It is a head presenting," but does not know in which position it lies, or the size of the pelvis through which it must pass, and, moreover, is not willing to bother with diagnosis by locating the fontanelles and sutures, will surely find himself in many embarrassing positions.

The accurate use of the pelvimeter is also essential, at least in primipheras or in multiperas who give a history of dystocia. This, of course, does not give us an assurance that a given head will pass through a given pelvis, as we can only estimate the size of the head, but at least will forewarn us of difficulty and let us form a tentative plan of treatment. I recall a case of obliquely contracted pelvis in which the first baby had been lost by a high forcep operation. On taking pelvic measurements and making an internal examination, I found that but one side of the pelvis was contracted, and by doing a version, so as to bring the child's occiput down in the larger side, was able to deliver it easily.

Making a diagnosis of position is of importance, for often a face, and more often an occiput posterior, is not recognized until the part is presenting at the vulva. I make it a rule to endeavor to make a definite diagnosis in all cases by the time there is two or three fingers' dilatation, and if I have not been able to do it by this time, to give chloroform. This will enable you to go high enough to reach one or both fontanelles, and, if necessary, to palpate an ear.

I will now take up the treatment of some of the more common complications of labor.

Placenta Previa.—Probably the most common treatment for this condition is tamponing the cervix to arrest hemorrhage and cause dilatation. Its disadvantages are that it is very apt to cause infection (as great a danger as the hemorrhage it is used to check), and that it sometimes requires two or more repetitions as the dilatation advances.

Another method is that of podalic version, either the combined or internal, using the child's thigh and breech as a tampon. This gives a low maternal mortality, but usually sacrifices the child's life in the interest of the mother.

Vaginal cesarean section is mentioned here only to be condemned, as in this condition the cervical incisions are made through the placental site and give rise to dangerous hemorrhage.

Cesarean section is the operation of choice with a centrally implanted placenta, or a primipera with rigid cervix. The maternal mortality is low, as is also the fœtal if the child is viable. This operation is subject to the usual contraindications, which I will give later.

I consider the method of choice in a lateral or marginal implantation of the placenta to be the use of the Champetier de Ribes bag. It acts as a very efficient tampon, shutting off the hemorrhage and at the same time giving a safe and fairly rapid dilatation. When dilatation is accomplished you can deliver at once by version if a multipera, or by forceps if a primipera. In doing this the membranes should be ruptured, the bag anointed with vaseline, and introduced well within the internal os, and will stop the flow of blood by lateral pressure on the placental site. The bag can be inserted manually or by the aid of ordinary uterine dressing forceps, and usually without the aid of chloroform.

The fœtal mortality in placenta previa is high under any treatment, as the hemorrhage often comes on before viability, and also from loss of blood through the placenta; but is lowest under cesarean section, and next lowest with the use of the rubber bag.

Postpartum Hemorrhage.—The best treatment for this is prophylactic, as it is often caused by meddlesome interference with the fundus too soon after the child is born. The uterus should not be manipulated to loosen the placenta, as this causes partial separation before it is all ready to come away, and the best plan is not to use Crede's method for at least fifteen minutes, or, better, half an hour. If severe flowing does come on, it can usually be checked by the hypodermic use of ergot, and a copious, hot intrauterine douche of 1 per cent iodine or lysol, using a long glass intrauterine tip and carrying it well up to the fundus. Pituitrin is of no value in the third stage of labor.

Packing the puerperal uterus with a gauze will often stop the hemorrhage, but is liable to cause a serious or fatal infection, as the mother's resistance is so lowered as to render her more susceptible to bacteric invasion. I have noticed that the hospitals which use this method have a larger percentage of postpartum temperatures in these cases than the ones which use the hot intrauterine douche.

In any hemorrhage appearing during the third stage, the possibility of its coming from a cervical or vaginal laceration should be considered, and,

if found, should be controlled by sutures or packing with gauze.

Eclampsia.—The treatment of this also might properly said to be largely prophylactic, as the majority of these cases could be detected by urinalysis and the routine use of the sphygmomanometer during the pregnancy, and at least one would have the advantage of early treatment. There are the occasional cases that come like lightning from a clear sky, with no warning albuminuria, and in these the toxemia is so overwhelming that they are unresponsive to any treatment.

There are two camps holding opposite views on the active treatment, and I am inclined to think that the best course is between operative and drug treatment, rather than a routine of either. During the past three years at the General Hospital in Buffalo we have reduced the maternal mortality to about 12 per cent by the hypodermic use of veratrum viride, in connection, of course, with the usual elimination. I know of nothing so gratifying and sometimes almost astonishing as the way in which the eclamptic patient, who is in truly a precarious condition, will rapidly change after the first or second hypodermic of veratrum. The blood pressure will fall from 200 or over to normal, the convulsions will become less frequent and cease, consciousness return, and the kidney function commence to re-establish itself. We have had the best results with Heister's ampoules of veratrum, but Squibb's fluid extract is also reliable. Give a ten minum dose, and a five minum dose every hour until the pulse falls to 60 and the blood pressure shows a marked drop.

A case, however, that does not show improvement under this treatment, or that grows worse in spite of it, should be delivered at once. This may be accomplished by dilating the cervix with the De Ribes rubber bag, or by vaginal or abdominal hysterotomy. If the cervix is soft enough and the patient is not in too critical a condition, the dilating bag may be used, as it is harmless to both mother and child. But if the cervix is hard and unyielding, or the patient is losing ground too rapidly to permit waiting the two or three hours needed to secure dilatation, it is better to deliver by vaginal or abdominal section. The fœtal mortality will be lower by using the abdominal operation, as the child is delivered rapidly, with no traumatism, and the maternal mortality will be lower in the vaginal, as there is less shock and danger of peritonitis.

Occiput Posterior.—This position is present in about one of every five occiput cases, and as most of them rotate spontaneously and are delivered as occiput anteriors, they are often not recognized. It is the ones that cause hours of delay at the brim, or that rotate into the hollow of the sacrum, that cause trouble. Here, again, diagnosis is of utmost importance, for this condition should be recognized early by external palpation or vaginal examination, and watched carefully, but not interfered with unless necessary. If the head is delayed at the brim, the occiput can often be rotated to the front manually under chloroform. It must be held in this position and the uterus stimulated until the returning pains fix it, otherwise the occiput will promptly turn to the back again. While you are doing this manipulation it is well to flex the head thoroughly, as it will assist in the proper engagement and early delivery. It is a very dangerous procedure to apply forceps while the head is still at the brim, and will usually result in the death of the child from pressure and traumatism. If you cannot rotate, it is good treatment to do a version in a multipera and deliver at once. In a primipera it is more difficult, as you have substituted a breech for a head and must let it proceed gradually for dilatation of the soft parts. Therefore, in primipera it is better to let the head descend as a posterior until well down in the pelvis, where it is comparatively safe to rotate manually or with forceps, and extract. You might take as a motto for the treatment of occiput posteriors, "Watchful Waiting."

Contracted Pelvis.—If you have made pelvic measurements and found a contraction of one or more of the diameters, you must decide how serious a matter it is. With only a slight degree it will be safe to let the woman go into labor with the expectation of a spontaneous delivery or of assisting with forceps. A version is often successful, even with a considerable degree of contraction.

If the pelvimeter shows a marked shortening in the conjugate or all of the measurements, it takes considerable obstetrical judgment to decide whether the head can pass or whether it will require operative interference, as pubiotomy or cesarean section. A true conjugate of from 7½ to 9 cm. would place it as a "border line" case, where a cesarean would be justified but not positively indicated; while 7 cm. or below could hold out little hope of delivering a living child other than by the abdominal route.

With the present low mortality for both mother and child in this operation one is not justified in exposing his patient to the increased danger from attempted delivery by high forceps, or even of frequent examinations. In good hands, good hospital surroundings, a patient that is not infected or that has not been exposed to examinations by ungloved hands, or that is not exhausted, your mortality will hardly exceed that of a clean appendectomy; and if the fœtus was in good condition to start with, you will almost invariably get a living child. I prefer the operation devised by Davis of New York, in which the incision is made above the umbilicus and is only 3½ to 4 inches in length. The uterus is not brought outside the body and there is little danger from shock or of post operative hernia, as the scar is in the upper part of the abdomen and is a very short one.

High Forceps.—The application of high for-

ceps supposes the head to be at the brim or floating unengaged above it, and is one of the most difficult and dangerous of obstetric operations. If it were not for the fact that most of these patients have been in labor a long time and have been exposed to numerous examinations and efforts at delivery, I would say that cesarean section would be preferable. Some one has well said that the high forceps operation is a cousin to embryotomy, and it is not far from the truth. To bring an unmoulded head through the birth canal without serious injury to both mother and child requires a considerable degree of skill and patience. The Tarnier axis traction forceps, or traction rods, that can be attached to the ordinary forceps, are of help here by enabling us to exert out traction in the axis of the birth canal, and thus are able to bring the head through with less injury by using less force.

A diagnosis of position should always be made so as to apply the blades to the sides of the child's head, the head well flexed if it is not already so, and traction made intermittently and gently, never throwing the weight of the body on the handles, but pulling with the arms only. Before using forceps or doing any manipulations always catheterize to avoid injury to the bladder.

Version.—This is one of the more simple obstetric operations and is not used as much as it deserves. There is some danger of carrying infection into the cavity of the uterus and of uterine rupture, but these can be avoided to a large extent.

In slight degrees of pelvic contraction, and in some of the malpositions, it is much safer than high forceps. Face presentations, if recognized before impaction has taken place in a multipera, can usually be delivered quickly and easily by this method.

In version, if immediate extraction is expected, it is necessary to have full cervical dilatation, otherwise the after-coming head will be caught and the child lost before you can finish the delivery. I also make it a rule to have forceps sterile and within reach in all versions and breech cases, to apply to the after-coming head if needed. Should the arms extend and become engaged alongside the head, they must be brought out at once by traction in the bend of the elbow and sweeping down over the face and chest of the child; and if they cannot be extricated you can resort to Deventer's method. This is accomplished by bringing the woman's hips out clear from the edge of the table and forcing the child's body down and back underneath it. The arms slip into the sacrosciatic notches, allowing the head to come down, and arms and head are delivered with a rush. This often results in a severe laceration, but gives you a living child that otherwise would have been lost.

In closing this paper I realize its incompleteness, but as I said in opening, it is intended only as a rough outline and to stimulate interest in more careful obstetrical diagnosis.

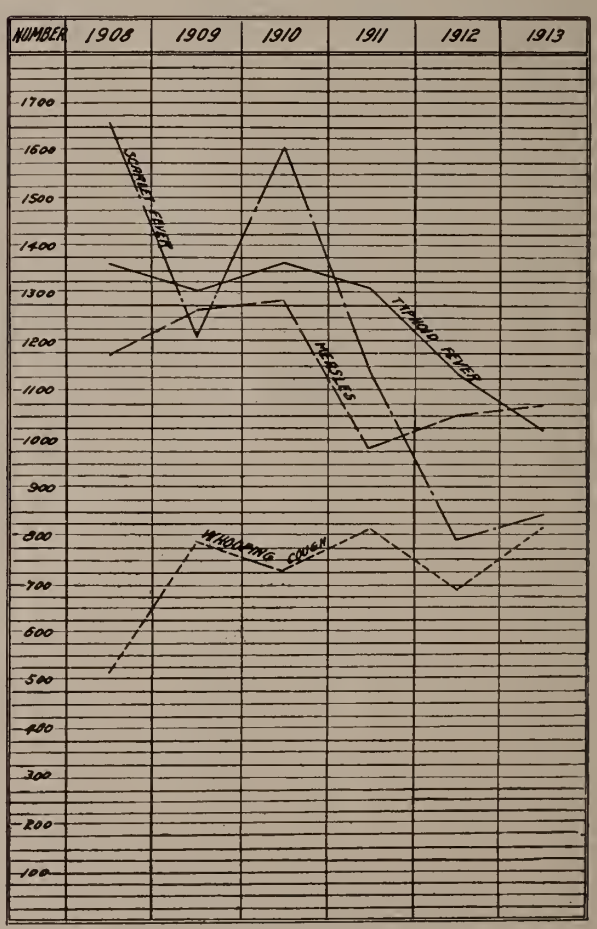
NOTES FROM THE STATE DEPARTMENT OF HEALTH

Whooping cough, measles, scarlet fever and typhoid fever are important diseases. Deaths from them are frequent. The physician should feel that these cases while unfortunately familiar may be very serious and he should teach his patients that the presence of the infectious agent is dangerous to the community. For that reason, all cases must be reported to the health officer. The following chart indicates the number of deaths from these diseases during the last six years in the State of New York.

Typhoid fever patients discharge the typhoid bacillus in their feces and urine. Scarlet fever, measles and whooping cough cases distribute the infectious agent in the discharges from the nose and throat. The avenues of transmission are numerous after they leave the mouth. Therefore, the strategic procedure is to destroy these discharges as they leave the nose or mouth.

The infectious agent is contained in these discharges from the nose and mouth for a day or two before the symptoms of illness begin. If a child has been exposed to whooping cough, scarlet fever or measles, the child should be isolated during the last three or four days of the incubation period. Unrecognized infected cases will then not carry the infectious agent to other people. In some cases this is not possible, because some parents do not know when their child was exposed. On the other hand many parents

NUMBER OF DEATHS FROM MEASLES; SCARLET FEVER, WHOOPING COUGH AND TYPHOID FEVER IN NEW YORK STATE, 1908–1913



do know when their child was exposed and are therefore able to protect their other children by isolation at the opportune moment. The incubation period for measles is 11 to 14 days; scarlet fever, 4 to 7 days; whooping cough, 10 to 14 days.

The State Department of Health has just issued new circulars on these diseases. They include a general statement concerning the disease; directions to parents, physicians and health officers, so that all parties concerned at the same time receive information upon the subject. These circulars may be obtained free of charge by applying to the department. A list of the new circulars is as follows: "Typhoid Fever," "Measles," "Scarlet Fever," "Whooping Cough," "Control of an Isolation Period in a Home," "Play for Convalescent Children," "The Teacher and Communicable Disease." F. M. MEADER.

CORRESPONDENCE

DR. JOHN COWELL MACEVITT,
Editor, NEW YORK STATE JUORNAL OF MEDICINE.

DEAR DOCTOR:—I am enclosing herewith two notes which please publish in the STATE JOURNAL.

Your truly,
O. V. HUFFMAN,
Secretary, State Board of Medical Examiners.

NOTICE TO PROSPECTIVE CANDIDATES.

The State Board of Medical Examiners may ask questions on the duties of practitioners under the Sanitary Code established by the State Public Health Council, and also on the duty of reporting industrial diseases under the Labor Law.

HOW TO PROCEED AGAINST UNLICENSED PRACTITIONERS.

First.—Make sure that the practitioner is not registered in the county clerk's office; the law requires that all practitioners shall register their license with the county clerk.

Second.—Obtain evidence, sufficient as a basis for a complaint, that the practitioner is attempting to diagnose or to treat human disease, injuries or physical conditions.

Third.—Send a written complaint to the district attorney along with a request that he prosecute the illegal practitioner under Section 174, of Article 8, of the Public Health Law.

Fourth.—If the district attorney refuses to investigate the complaint, notify the governor, as he has the authority to remove from office district attorneys who refuse to do their duty.

New York City, August 28, 1914.

DR. JOHN COWELL MACEVITT,
Editor, NEW YORK STATE JOURNAL OF MEDICINE.

THE LANGUAGE OF THE BYZANTINES.

Permit me to call attention to some remarkable features of Dr. Victor C. Vaughan's inaugural address as president of the American Medical Association. Dr. Vaughan says: "There is a moral obligation to be intelligent. Ignorance is a vice and when it results in injury to any one, it becomes a crime, a moral if not a statuary one." In a correspondence "The Byzantines a Protest," published in NEW YORK MEDIDAL JOURNAL, July 11th, I furnished conclusive evidence how Dr. Vaughan himself had demonstrated, and this is not a small matter, before an audience of nearly five thousand physicians, his own ignorance of the history of the Byzantines, and now I am obliged to show what he should know but does not know about the language of the Byzantines. I speak in self-defence, because his culminations and misrepresentations of the Greeks and their language must result in injury to me who has labored all these twenty years past to enlighten the profession on Greek in medicine. Dr. Vaughan says that the Byzantines went so far as to smother the liveliest expression of the free development of the national spirit by denying, in their rigid adherence to Attic speech, all part in literature to the language of the people.

The facts which Dr. Vaughan does not know are the following: The different parts of Greece are widely scattered, being separated by the sea, by highlands, and by other nations intervening. This peculiarity of Greeks living secluded from Greeks became more and more marked politically when the provinces of the Byzantine reign were conquered. This was another reason why a new people's language would not develop and could not spread. A new national language, understood by all Greeks, did not exist. There were only the many dialects of the different provinces, and so we find in regard to the people's contemporaneous language polyglossy on the one hand and aglossy on the other. The language which all the Greeks adhered to was the virginal, the immortal old Greek. A. ROSE.

Medical Society of the State of New York

COUNTY SOCIETIES.

MEDICAL SOCIETY OF THE COUNTY OF WASHINGTON.

ANNUAL MEETING, AT HUDSON FALLS, OCTOBER 6, 1914.

Minutes read and approved.

Report of Comitia Minora.

Meeting held at the office of Secretary, August 25, 1914.

Members present:—Drs. Millington, Park, Paris and Banker.

Drs. Tenney, Cuthbert and Melick, were appointed a committee to consider having the minutes of the Society for the first hundred years printed in pamphlet.

Drs. Tenney, Davies and Casey, were appointed a committee to present a resolution advocating the granting of fees to physicians for reporting births and deaths.

Drs. Pashley, Casey, Rogers and Wilde were appointed to serve on the program for the next meeting. Dr. Prest, Sanitary Supervisor for this section, was granted time on the program. Secretary's bill for $8.75 was audited. Adjourned.

President appointed Drs. Cuthbert, Wilde and Pashley Nominating Committee, and the following officers were elected:— President, John Millington, Greenwich; Vice-President, R. A. Heenan, Hudson Falls; Secretary, S. J. Banker, Fort Edward; Treasurer, R. C. Paris, Hudson Falls. Censors, J. T. Park, G. M. Stillman, C. W. Sumner.

Committee on Legislation, S. Pashley, L. S. Budlong.

Members present:—W. A. Tenney, J. Millington, G. D. Wilde, G. M. Casey, W. B. Madison, L. S. Budlong, C. W. Cuthbert, J. T. Park, S. Pashley, R. A. Heenan, L. R. Oatman, W. B. Melick, R. H. Lee, R. C. Paris, S. J. Banker.

Visitors:—C. S. Prest, H. C. Gordinier, V. D. Selleck, J. S. White, R. E. LaGrange, of Fort Ann, was elected to membership.

Treasurer reported $55.02 in treasury.

The following resolutions were passed:

Resolved, That the President be authorized to appoint a Milk Committee.

Drs. Millington, Heenan, Munson and Banker were appointed.

President appointed Drs. Cuthbert, Park and Heenan committee to draft resolutions on the death of Dr. Infield.

WHEREAS, It is with deep sadness we have to record the death of one of our number, Dr. Clifton L. Infield, which occurred September 16, 1914.

Resolved, That in his death we have each lost a personal friends, a helpful and faithful co-worker, a safe and wise counselor. The community as a whole an excellent citizen, an able, conscientious physician whose efficient and devoted care endeared him to all who knew him. To his family a loving husband and father.

Resolved, That these resolutions be spread on the

minutes of this Society, published in the local papers and a copy forwarded to the bereaved family of the deceased.

SCIENTIFIC PROGRAM.

Dr. G. D. Wilde read a paper on "Empyema." Reporting a case.

Twelve noon adjourned.

Meeting Comitia Minora, 1.30 P. M.

Present:—Drs. Tenney, Park, Paris, Millington, Banker.

Secretary's bill for $3.15; Treasurer's bill for $2.00. Audited. Adjourned.

Meeting called at 2.30 P. M.

President's address, advocating conservatism especially in surgical gynecology.

Dr. H. C. Gordinier gave a very interesting address on "Diagnostic Points,' mentioning the abdominal reflek as diagnostic of typhoid fever, exopthalmos as diagnostic of chronic brights, the rectal shelf in diagnosis of internal carcinoma, and the use of digitalis in myocardial diseases.

Dr. Charles S. Prest, Sanitary Supervisor, explained the Public Health Laws and Sanitary Code. Adjourned.

To meet in Hartford for the semi annual.

ESSEX COUNTY MEDICAL SOCIETY.

ANNUAL MEETING, AT PORT HENRY, TUESDAY, OCTOBER 6, 1914.

Meeting called to order at 2.10 P. M. by the Vice-President, Dr. C. B. Warner; the President, Dr. L. C. Barton, was detained in Elizabethtown by attendance at court.

Roll call showed the following members present:—Drs. Canning, Cummins, Dowd, Liberty, Miller, Payne, Reed, Sherman, Turner and Warner. In addition to the members, the following physicians were present:—Drs. Robert F. Weir, New York City; H. L. K. Shaw, Albany; J. A. Smith, Saranac Lake, and L. G. Barton, Jr., Willsboro.

Minutes of the last meeting read and approved.

It was voted to defer the business meeting until after the scientific program had been presented.

Dr. Robert F. Weir, of New York City, ex-President of the American Surgical Association, gave an informal address.

Dr. John A. Smith, of Saranac Lake, Sanitary Supervisor for District A, spoke on "The Physician and the New Public Health Law."

In the absence of Dr. Augustus D. Wadsworth, Director of the State Laboratories, Dr. H. L. K. Shaw, of Albany, read his paper on "Laboratory Aids to Diagnosis."

Dr. George E. Miller, of Keene Valley, presented a paper on the "Saratoga Spring Waters," calling attention to their therapeutic value. Dr. Sherman showed a stone passed by the rectum of one of his patients, and gave an outline of the case. General opinion seemed to be that the stone was a gallstone which had ulcerated through into intestine.

BUSINESS MEETING.

The Chairman appointed as Committee on Nominations, Drs. Sherman, Cummins and Liberty. This committee reported the following nominations:—President, Dr. C. B. Warner, of Port Henry; Vice-President, Dr. M. H. Turner, of Ticonderoga; Secretary, Dr. C. R. Payne, of Wadhams; Treasurer, Dr. W. T. Sherman, of Crown Point. Censors, Drs. T. H. Canning, T. J. Dowd, F. M. Noble. Delegates State Society, Dr. W. F. Brown, of Mineville; Alternate State Society, Dr. George E. Miller, of Keene Valley. Delegate to Fourth District Branch, Dr. S. A. Reed, of Moriah; Alternate to Fourth District Branch, Dr. L. G. Barton, Jr.

Motion made and seconded that the Secretary be instructed to cast one ballot for these gentlemen. Carried. Above candidates unanimously elected officers for 1915.

The name of Dr. L. G. Barton, Jr., of Willsboro, was presented as candidate for membership. The Secretary was instructed to cast a ballot electing Dr. Barton to membership.

The Secretary reported one death during the year and one transfer to another county society, making the present number of members with dues fully paid, twenty-five (25).

The Treasurer's report was read and accepted; this showed the Society $1.40 in debt due to extra expense caused by reorganization of Society last year.

MEDICAL SOCIETY OF THE COUNTY OF GENESEE.

ANNUAL MEETING, AT BATAVIA, OCTOBER 7, 1914.

The following officers were elected:—President, J. W. Le Seur, Batavia; Vice-President, V. C. Rice, Batavia; Secretary and Treasurer, S. E. Page, East Bethany. E. E. Hummell, Darien Centre, Delegate for two years to the meeting of the State Society.

A commission to consist of Drs. J. W. Le Seur, Batavia; H. E. Ganiard, Le Roy, and E. C. Smith, Corfu, was appointed to examine milk of dealers in the county who wish to have their milk certified under the state law.

SCIENTIFIC PROGRAM.

"One Aspect of the European Situation," Judge S. E. North, Batavia.

"Some Observations, Therapeutic and Otherwise, from a General Practitioner," M. Jean Wilson, M.D., Warsaw.

MEDICAL SOCIETY OF THE COUNTY OF CLINTON.

ANNUAL MEETING, AT PLATTSBURGH, NOVEMBER 17, 1914.

The meeting was opened with a luncheon at which over a score of doctors were present. This was followed by the business session as usual, the following officers were elected for 1915:—President, Robert S. Macdonald, Plattsburgh; Vice-President, Leo F. Schiff, Plattsburgh; Secretary, Thomas A. Rogers, Plattsburgh; Treasurer, Jefferson G. McKinney, Plattsburgh. Censors, John J. Robinson, Anthime Charbonneau and Alexander Fairbank.

It was moved, seconded and carried that a committee be appointed to arrange for a room in the public library of Plattsburgh to be used for a medical library, and also for the holding of medical meetings.

It was moved, seconded and carried that Dr. Alexander Fairbank, of Chazy, be appointed a member of the Legislative Sommittee.

SCIENTIFIC SESSION.

President's address, "Dystocia," Herbert S. McCasland, M.D., Saranac.

"Prostatism," Cassius D. Silver, M.D., Plattsburgh.

"Cerebral Syphilis," John R. Ross, M.D., Dannemora.

MEDICAL SOCIETY OF THE COUNTY OF ERIE.

REGULAR MEETING, BUFFALO, OCTOBER 19, 1914.

The meeting was called to order by the President, Dr. John V. Woodruff.

The Committee on Membership presented the names of twenty-two men for election and seven for reinstatement. On motion duly seconded and carried these men were declared duly elected members of the Medical Society of the County of Erie. S. Ginsburgh, St. Lawrence County, and H. H. Fox, Monroe County, were admitted by transfer.

The following officers were nominated for 1915:—President, Arthur W. Hurd; Vice-President, Franklin W. Barrows; Second Vice-President, Irving W. Potter; Secretary, Franklin C. Gram; Treasurer, Albert T. Lytle. Chairman, Committee on Economics, John V. Woodruff; Chairman, Committee on Public Health, Henry R. Hopkins; Chairman, Committee on Legislation, Harvey R. Gaylord; Chairman, Committee on Membership, William F. Jacobs. Censors, John D. Bonnar, Francis E. Fronczak, Archibald D. Carpenter,

Arthur G. Bennett, Charles Battaglia. Delegates to Medical Society of the State of New York, 1915-1916, Charles G. Stockton, Thomas H. McKee, Arthur W. Hurd, Edward L. Front and Edith R. Hatch.

At the close of the business session, Dr. Henry Adsit presented a very interesting paper on "The Role of the Genital Organs in Acute and Chronic Arthritis," and Dr. Prescott LeBreton presented an equally interesting paper on "Arthritis of the Joints of the Hand Following Colles' Fracture."

Both papers were freely discussed by all present.

LEGISLATIVE NOTES.

The Committee on Legislation herewith presents the lists of members of the Senate and Assembly for the year 1915. Members of the Society can refer to this list at any time that it may seem advisable to write to their Assemblymen or Senators in regard to legislative matters and all are requested to look it over so that if among those represented there are any men known to them personally they can write them, if requested by the Committee on Legislation to assist or oppose any bills before the Legislature.

SENATE.

1. George L. Thompson, R., Kings Park, L. I.
2. *Bernard M. Patten, D., 151 Elm Street, L. I. City.

BROOKLYN.

3. *Thomas H. Cullen, D., 256 President Street.
4. Charles C. Lockwood, R., 954 Greene Avenue.
5. *William J. Heffernan, D., 598 Fourth Avenue.
6. *William B. Carswell, D., 121 St. Marks Avenue.
7. *Daniel J. Carroll, D., 153 N. 3d Street.
8. Alvah W. Burlingame, Jr., R., 96 Hancock Street.
9. Robert R. Lawson, R., 24 Woodbine Street.
10. Alfred J. Gilchrist, R., 249 Crescent Street.

NEW YORK CITY.

11. *Christopher D. Sullivan, D., 8 Rutgers Street.
12. Henry W. Doll, D., 49 Third Avenue.
13. James J. Walker, D., 6 St. Lukes Place.
14. *James A. Foley, D., 316 E. 18th Street.
15. *John J. Boylan, D., 418 W. 51st Street.
16. *Robert F. Wagner, D., 244 E. 86th St.
17. Ogden L. Mills, R., 9 E. 84th St.
18. William M. Bennett, R., 225 Central Park West.
19. *George W. Simpson, D., 468 West 144th Street.
20. Irving I. Joseph, D., 1421 Madison Avenue.
21. John J. Dunnigan, D., 1861 Holland Avenue.
22. James A. Hamilton, D., 897 Crotona Park, North.

STATE.

23. George Cromwell, R., Dongan Hills, Staten Island.
24. George A. Slater, R., Port Chester.
25. *John D. Stivers, R., Middletown.
26. *James E. Towner, R., Towners.
27. Charles W. Walton, R., Kingston.
28. *Henry M. Sage, R., Menanda.
29. Walter A. Wood, Jr., R., Hoosick Falls.
30. *George H. Whitney, R., Mechanicsville.
31. Arden L. Norton, R., Cobleskill.
32. Franklin W. Cristman, R., Herkimer.
33. *James A. Emerson, R., Warrensburg.
34. N. Monroe Marshall, R., Malone.
35. *Elon R. Brown, R., Watertown.
36. Charles W. Wicks, R., Sauquoit.
37. Samuel A. Jones, R., Norwich.
38. *J. Henry Walters, R., 315½ Genesee St., Syracuse.
39. William H. Hill, R., Lestershire.
40. *Charles J. Hewitt, R., Locke.
41. Morris S. Halliday, R., Ithaca.
42. *Thomas B. Wilson, R., Hall.
43. Charles D. Newton, R., Geneseo.
44. Archie D. Sanders, R., Stafford.
45. *George F. Argetsinger, R., Rochester.
46. John B. Mullan, R., Rochester.
47. *George F. Thompson, R., Middleport.
48. Clinton T. Horton, R., 905 D. S. Morgan Bldg., Buffalo.
49. *Samuel J. Ramsperger, D., 232 Emslie St., Buffalo.
50. William P. Greiner, D., 1037 Walden Ave., Buffalo.
51. George E. Spring, R., Franklinville.

* Re-elected.

ASSEMBLY.

ALBANY.

1. *Harold J. Hinman, R., 357 Madison St., Albany.
2. *John G. Malone, R., 8 Wendell Street.
3. *William C. Baxter, R., 803 Third Ave., Watervliet.

ALLEGANY.

*Elmer E. Ferry, R., Almond.

BRONX.

32 N. Y. William L. Evans, D., 744 Beck St., N. Y. C.
33 N. Y. Earl H. Miller, D., 601 Eagle Avenue.
34 N. Y. M. Maldwin Fertig, D., 1556 Minford Place.
35 N. Y. Jos. M. Callahan, D., 1037 Ogden Avenue.

BROOME.

*Simon P. Quick, R., Windsor.

CATTARAUGUS.

De Hart Ames, R., Franklinville.

CAYUGA.

William Whitman, R., Venice.

CHAUTAUQUA.

1. *A. Morell Cheney, R., Bemus Point.
2. *John Leo Sullivan, R., Dunkirk.

CHEMUNG.

Horace G. Walker, R., Horseheads.

CHENANGO.

Bert Lord, R., Afton.

CLINTON.

*Alexander W. Fairbank, R., Chazy.

COLUMBIA.

William W. Chace, R., Hudson.

CORTLAND.

George H. Wiltse, R., Cortland.

DELAWARE.

*Edwin A. Mackey, R., Franklin.

DUTCHESS.

1. James C. Allen, R., Clinton Corners.
2. Francis G. Landon, R., Staatsburg.

ERIE.

1. Allan Keeney, R., Prudential Bldg., Buffalo.
2. Ross Graves, R., Erie Co. Bank Bldg.
3. Nicholas J. Miller, R., 12 Cayuga Street.
4. James M. Mead, D., 137 Gold Street.
5. Arthur C. McElroy, D., 100 S. Division Street
6. Peter C. Jerzewski, R., 173 Stanislaus Street.
7. John F. Heim, R., Lancaster.
8. Leonard W. Gibbs, R., Austin Bldg., Buffalo.
9. *Frank B. Thorn, R., Erie Co. Bank Bldg.

ESSEX.

*Raymond T. Kenyon, R., Ausable Forks.

FRANKLIN.

*Alexander Macdonald, R., St. Regis Falls.

FULTON AND HAMILTON.

*James H. Wood, R., Gloversville.

GENESEE.

*Louis H. Wells, R., Pavilion.

GREENE.

*George H. Chase, R., Jewett.

HERKIMER.

Selden C. Clobridge, R., Herkimer.

JEFFERSON.

1. *Henry E. Machold, R., Ellisburg.
2. Willard S. Augsbury, R., Antwerp.

KINGS.

1. *R. Hunter McQuistion, R., 144 Montague St., B'klyn.
2. *William J. Gillen, D., 12 Vanderbilt Avenue.
3. *Frank J. Taylor, D., 50 Van Dyke St.

4. Peter A. McArdle, D., 151 Hewes Street.
5. Fred G. Milligan, Jr., R., 528 Decatur Street.
6. Nathan Shapiro, R., 173 Floyd Street.
7. *Daniel F. Farrell, D., 378 17th Street.
8. *John J. McKeon, D., 413 Smith Street.
9. Fred S. Burr, D., 330 80th Street.
10. *Fred M. Ahern, R., 425 Sterling Place.
11. *George R. Brennan, R., 1138 Pacific Street.
12. *William T. Simpson, R., 523 6th Street.
13. *Herman Kramer, D., 18 Bushwick Avenue.
14. *John P. La Frenz, D., 65 Java Street.
15. *James J. Phelan, D., 98 N. Henry Street.
16. *Samuel R. Green, R., 1454 45th Street.
17. Frederick A. Wells, R., 1228 Pacific Street.
18. *Almeth W. Hoff, R., 460 Stratford Road.
19. William A. Bacher, D., 12 Suydam Street.
20. *August C. Flamman, R., 1135 Lafayette Street.
21. Isaac Mendelsohn, D., 3 Cook Street.
22. Charles H. Duff, R., 1397 Madison Street.
23. Nathan B. Finkelstein, R., 39 Thatford Avenue.

LEWIS.

*Henry L. Grant, R., Copenhagen.

LIVINGSTON.

*Edward M. Magee, R., Groveland Station.

MADISON.

*Morrell E. Tallett, R., De Ruyter.

MONROE.

1. James A. Harris, R., Penfield.
2. *Simon L. Adler, R., Rochester.
3. John R. Powers, R., Rochester.
4. Frank Dobson, R., Charlotte.
5. Franklin W. Judson, R., Gates.

MONTGOMERY.

E. Corning Davis, R., Fonda.

NASSAU.

Thomas A. McWhinney, R., Lawrence.

NEW YORK.

1. John J. Ryan, D., 189 Greenwich Street, N. Y. C.
2. *Alfred E. Smith, D., 25 Oliver Street.
3. Carmine J. Marasco, D., 293 Mott Street.
4. *Henry S. Schimmel, D., 432 Grand Street.
5. Maurice McDonald, D., 344 W. 14th Street.
6. Nathan D. Perlman, R., 27 Avenue D.
7. *Peter P. McElligott, D., 428 W. 24th Street.
8. Sidney Scharlin, D., 110 Division Street.
9. *Charles D. Donohue, D., 408 W. 43d Street.
10. Walter M. Friedland, D., 35 1st Street.
11. *John Kerrigan, D., 342 W. 47th Street.
12. *Joseph D. Kelly, D., 223 E. 17th Street.
13. *James C. Campbell, D., 827 10th Avenue.
14. *Robert L. Tudor, D., 159 Lexington Avenue.
15. *Abraham Ellenbogen, R., 137 W. 86th Street.
16. *Martin G. McCue, D., 734 Third Avenue.
17. Martin Bourke, R., 4 W. 92d Street.
18. *Mark Goldberg, D., 222 E. 72d Street.
19. Patrick F. Cotter, D., 11 W. 108th Street.
20. Frank Aranow, D., 1185 Lexington Avenue.
21. Harold C. Mitchell, R., 321 St. Nicholas Avenue.
22. D. Maurice Block, D., 407 E. 88th Street.
23. Daniel C. Oliver, D., 520 W. 157th Street.
24. *Owen M. Kiernan, D., 163 E. 89th Street.
25. *Francis R. Stoddard, Jr., R., 102 Waverly Place.
26. *Joseph Steinberg, Prog.-R., 57 E. 96th Street.
27. Charles E. Rice, Jr., R., 118 W. 57th Street.
28. Salvatore A. Cotillo, D., 273 Pleasant Avenue.
29. *Howard Conkling, R., 157 E. 70th Street.
30. Dennis G. Donovan, D., 1806 Park Avenue.
31. Aaron A. Feinberg, R., 137 W. 110th Street.

NIAGARA.

1. *William Bewley, R., Lockport.
2. Alan N. Parker, R., Niagara Falls.

ONEIDA.

1. *Fred S. Emden, D., Utica.
2. *Charles J. Fuess, R., Utica.
3. *J. Brayton Fuller, R., Marcy.

ONONDAGA.

1. *Edward Arnts, R., 928 N. 3d Street, Syracuse.
2. J. Leslie Kincaid, R., 407 Emerson Street.
3. *Jacob R. Buecheler, R., 227 Seward Street.

ONTARIO.

*Heber E. Wheeler, R., East Bloomfield.

ORANGE.

1. *James B. Montgomery, R., Newburgh.
2. *Charles J. Boyd, R., Middletown.

ORLEANS.

A. Allen Comstock, Rep., Waterport.

OSWEGO.

*Thaddeus C. Sweet, R., Phoenix.

OTSEGO.

Allen J. Bloomfield, R., Richfield Springs.

PUTNAM.

*Hamilton Fish, Jr., Prog., Garrison.

QUEENS.

1. *Nicholas Nehrbauer, Jr., 589 9th Ave., L. I. City.
2. *Peter J. McGarry, D., 71 Greenpoint Ave., Blissville.
3. Wm. H. O'Hare, D., 33 Parkview Ave., Glendale.
4. Geo. E. Polhemus, D., 71 Union Hall St., Flushing.

RENSSELAER.

1. John F. Shannon, D., 13th and Christie Sts., Troy.
2. Edwin S. Comstock, R., Nassau.

RICHMOND.

Stephen B. Stephens, D., 204 Richmond Terrace, New Brighton.

ROCKLAND.

Frederick Grimme, D., Piermont.

ST. LAWRENCE.

1. *Frank L. Seaker, R., Governeur.
2. E. A. Everett, R., Potsdam.

SARATOGA.

*Gilbert T. Seelye, R., Burnt Hills.

SCHENECTADY.

Walter H. McNab, R., Schenectady.

SCHOHARIE.

*Edward A. Dox, D., Richmondville.

SCHUYLER.

*Henry S. Howard, R., Watkins.

SENECA.

*William J. Maier, R., Seneca Falls.

STEUBEN.

1. Reuben B. Oldfield, R., Bath.
2. Richard M. Prangen, R., Hornell.

SUFFOLK.

1. *DeWitt C. Talmage, R., Easthampton.
2. *Henry A. Murphy, R., Huntington.

SULLIVAN.

H. Blake Stratton, D., Monticello.

TIOGA.

*Wilson S. Moore, R., Candor.

TOMPKINS.

*John W. Preswick, R., Ithaca.

ULSTER.

1. *Henry R. DeWitt, R., Kingston.
2. *Abraham P. Le Fevre, R., New Paltz.

WARREN.

*Henry E. H. Brereton, R., Diamond Point.

WASHINGTON.

*Charles O. Pratt, R., Cambridge.

WAYNE.

*Riley A. Wilson, R., Savannah.

WESTCHESTER.

1. *George Blakely, R., Yonkers.
2. William S. Coffey, R., Mt. Vernon.
3. *Walter H. Law, Jr., R., Briarcliff Manor.
4. *Floy D. Hopkins, R., White Plains.

WYOMING.

*John Knight, R., Arcade.

YATES.

*Edwin C. Gillette, R., Penn Yan.

* Re-elected.

BOOKS RECEIVED.

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

THE QUESTION OF ALCOHOL. By EDWARD HUNTINGTON WILLIAMS, M.D., formerly Associate Professor of Pathology, State University, Iowa; Assistant Physician N. Y. State Hospital Service; Author of "The Walled City," "Increasing Your Mental Efficiency," etc., and Joint Author of "The Wonders of Science in Modern Life."

THE PHILOSOPHY OF RADIO-ACTIVITY. By EUGENE COLEMAN SAVIDGE, M.D., Member N. Y. Academy Medicine, Obstetrical Society, American Medical Association, New York State Medical Society, Alumni Roosevelt and Sloane Hospitals, Women; former Asst. Gynecologist, Roosevelt Hospital (O. P. D.); former Attending Gynecologist, St. Mark's Hospital. William R. Jenkins Co., Sixth Avenue at 48th Street, New York. Octavo, cloth, $1.50 net.

INTERNATIONAL CLINICS, A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles on Medicine, Surgery, Neurology, Pediatrics, etc., by leading members of the profession. Edited by HENRY W. CATTELL, A.M., M.D., with collaboration of JOHN WITHERSPOON, M.D., SIR WILLIAM OSLER, M.D., A. MCPHEDRAN, M.D., FRANK BILLINGS, M.D., CHARLES H. MAYO, M.D. Volume III. Twenty-fourth Series, 1914. J. B. Lippincott Company, Philadelphia and London. Price, $2.00.

ANIMAL EXPERIMENTATION AND MEDICAL PROGRESS. By WILLIAM WILLIAMS KEEN, M.D., LL.D., Professor Emeritus of Surgery, Jefferson Medical College, Philadelphia, with introduction by CHARLES W. ELIOT, LL.D., President Emeritus, Harvard University. Price, $1.75 net. Houghton, Mifflin Co., Boston and New York; The Riverside Press, Cambridge. 1914.

TUBERCULOSIS OF THE BONES AND JOINTS IN CHILDREN. By JOHN FRASER, M.D., F.R.C.S.E., Ch.M. Assistant Surgeon, Royal Hospital for Sick Children, Edinburgh. With 51 full page plates (two in color), and 164 figures in the text. Adam and Charles Black, London. 1914.

THE HEART IN EARLY LIFE. By G. A. SUTHERLAND, M.D., F.R.C.P., Senior Physician to the Hempstead and North-West London Hospital, Physician to Paddington Green Children's Hospital. London. Henry Frowde, Hodder and Stoughton, Oxford Univ. Press, Warwick Sq., E. C., 1914. Price, $2.00. Oxford Univ. Press, 35 West 32d Street, New York City.

PRACTICAL BANDAGING, including Adhesive and Plaster-of-Paris Dressings. By ELDRIDGE L. ELIASON, A.B., M.D., Asst. Instructor Surgery in the University Pennsylvania; Asst. Surgeon, University Pennsylvania Hospital; Asst. Surg. Howard Hospital; Member of the College of Physicians of Philadelphia. 155 original drawings and photographs. J. B. Lippincott Co., Philadelphia and London, 1914.

A DOCTOR'S VIEWPOINT. By JOHN BESSNER HUBER, A.M., M.D. Editor, *The Dietetic and Hygienic Gazette;* Author, Consumption and Civilization (Lippincott's) Fellow of American Medical Association and New York Academy of Medicine. Gazette Publishing Co., New York City.

FOOD PRODUCTS. By HENRY C. SHERMAN, Ph.D., Professor of Food Chemistry, Columbia University. The Macmillan Co., New York, 1914. Price, $2.25.

THE BOOK OF TRUTH. By Hon. HENRY S. GRIGGS. A Reasonable Faith and the Future Religion of the World. Price, $3.00. Henry S. Griggs Co., Brooklyn, N. Y.

WORRY AND NERVOUSNESS, or The Science of Self-Mastery. By WILLIAMS S. SADLER, M.D., Professor Therapeutics, Post-Graduate Medical School, Chicago; Director Chicago Institute of Physiologic Therapeutics; Fellow American Medical Association; The Illinois State Medical Society. Illustrated. Price, $1.50 net. A. C. McClurg & Co., Chicago, Ill., 1914.

THE CARE OF THE SICK ROOM. By ELBRIDGE GERRY CUTLER, M.D. Cambridge, Harvard University Press, 1914.

THE PHARMACY HANDBOOK. By F. W. CROSSLEY-HOLLAND, F.C.S., Pharmacist, Member of the Pharmaceutical Society of Great Britain and America, Associate Editor of *The Prescriber.* Oxford University Press, New York City. Henry Frowde, Hodder and Stoughton, London, 1914. Price, $2.00.

THE RESPIRATORY FUNCTION OF THE BLOOD. By JOSEPH BANCROFT, M.A., B.Sc., F.R.S., Fellow of King's College, Cambridge. Cambridge, at the University Press, 1914.

REDUCING WEIGHT COMFORTABLY, the Dietetic Treatment of Obesity. By Prof. GUSTAVE GAERTNER, M.D., Vienna, authorized translation in English. J. B. Lippincott Co., Philadelphia and London. Price, $1.50 net.

SELECTED PAPERS, SURGICAL AND SCIENTIFIC, from the writings of ROSWELL PARK, late Professor of Surgery in the University of Buffalo, and Surgeon-in-Chief to the Buffalo General Hospital. With a memoir, by CHARLES G. STOCKTON, M.D. The Courier Co., Buffalo, N. Y., 1914. Price, $3.00 net.

DEATHS.

LEMUEL BOLTON BANGS, M.D., New York City, died October 4, 1914.

FREDERICK C. BEALS, M.D., Salamanca, died July 25, 1914.

CHARLES H. BURBECK, M.D., Troy, died May 9, 1914.

PATRICK H. FITZHUGH, M.D., New York City, died November, 1914.

H. SEYMOUR HOUGHTON, M.D., New York City, died September 11, 1914.

THOMAS O. KEATOR, M.D., Accord, died July 6, 1914.

JAMES KOSSUTH KING, M.D., Watkins, died September 20, 1914.

EDMOND HENRY KYLE, M.D., Ithaca, died June 9, 1914.

GEORGE S. LYNDE, M.D., New York City, died November 5, 1914.

CHARLES WOOD MCMURTRY, M.D., New York City, died November 25, 1914.

EDWARD MARSH, M.D., Esperance, died May 19, 1914.

JAMES G. MUMFORD, M.D., Clifton Springs, died October 18, 1914.

MATTHEW J. O'CONNELL, M.D., Buffalo, died August 4, 1914.

GEORGE P. K. POMEROY, M.D., Stuyvesant, died January 24, 1914.

EUGENE A. SMITH, M.D., Saranac Lake, died August 8, 1914.

CHARLES M. VAN DYKE, M.D., Himrod, died September 29, 1914.

THERON A. WALES, M.D., Elmira, died September 9, 1914.

LESLIE L. WILES, M.D., Amsterdam, died July 17, 1914.

INDEX

NOTE.—Original articles are indexed in *italics*. Other abbreviations are as follows: Editorials (E); New Books (B).

ORIGINAL ARTICLES