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THE SERUM DIAGNOSIS OF TYPHOID.*

By J. J. MACKENZIE, B.A.,

Bacteriologist to the Provincial Board of Health.

THE recent practical application of the specific serum reaction of Pfeiffer in the diagnosis of typhoid fever is one of the most interesting results of recent bacteriological work.

In his researches upon Asiatic cholera, Pfeiffer, of Berlin, discovered that the serum of an animal rendered immune to cholera would, when introduced into the peritoneal cavity of a guinea-pig, along with a virulent culture of the cholera spirillum, cause the dissolution and disappearance of the spirilla in a remarkably short space of time. If the immune serum was not introduced, the spirilla multiplied, and the animal died.

This reaction, which was spoken of as Pfeiffer's phenomenon, was used for the identification of suspected spirilla. In many cases all other bacteriological methods left us still in doubt whether a given spirillum was that of Asiatic cholera or not. This test proved absolutely reliable.

*Read at the Pathological Society, November 29, 1896.

Pfeiffer and Kolle extended the method to the typhoid bacillus so as to distinguish the true typhoid organism from typhoid-like forms, which are frequently found in water, and they also so elaborated the method as to show that the reaction was specific.

In the course of their researches they found that it was not always necessary to introduce the mixture of immune serum and bacteria into the peritoneal cavity of a guinea-pig, for a certain amount of change took place if the serum and the culture were mixed in a test tube with bouillon. If the culture was not of the same germ which had produced the immune serum, no change occurred; if it was, the bacteria fell to the bottom of the tube in a flocculent precipitate. A microscopic examination showed that they had lost their motility, and had become entangled so as to form clumps.

Gruber and Durham, of Vienna, discovered this test-tube reaction almost simultaneously with Pfeiffer, and they gave to the substance in the serum which causes the clumping the name agglutinin. Pfeiffer, on the other hand, calls it paralyisin.

Widal was the first to see the clinical significance of these facts, and to examine the effects of the blood serum of patients suffering from typhoid upon cultures of the typhoid bacillus. He was able to find an agglutinating action present when he used the serum alone, or the fresh blood, or a watery solution of the dried blood.

Dr. Wyatt Johnston, of Montreal, has made a practical application of Widal's method in allowing a drop of blood from a suspected typhoid case to dry upon a slip of paper, and then later, in the laboratory, moistening the drop with sterile water, and mixing a portion of it with a fresh bouillon culture of typhoid in a hanging drop. This is watched under the microscope, and, if the case is typhoid, in the course of from half an hour to an hour agglutination of the bacilli occurs. The advantage of Dr. Johnston's method is that it is eminently practical, and enables a bacteriologist in a central laboratory to make diagnoses for a large area of country in the same manner as has been done in diphtheria and tuberculosis.

I have used Dr. Johnston's method in my own laboratory, and am well satisfied with the results obtained so far.

After mixing the culture and the watery extract of the blood of a typhoid patient, as a rule no change is observed for a few minutes, the bacilli moving rapidly backwards and forwards through the field with their characteristic motion. Then one notices individuals sticking together in pairs or in threes moving clumsily, and in a short time others join the clumps, the movement becoming always slower, until finally all the bacilli are tangled together in large clumps containing ten or more individuals, and all movement stops.

The reaction takes longer in some cases than in others. In one case it was complete before the preparation could be placed under the microscope, *i.e.*, in about two minutes. In the majority of cases it takes thirty minutes. My own experience is that if there is no evidence of reaction within an hour there is not much chance of its appearing, but it is well to observe the slides for twenty-four hours.

In order to be sure of accurate results one must use a very motile culture, *i.e.*, a fresh one, and it is well to have it so dilute that not more than, say, fifty to a hundred bacilli appear in the field.

A magnifying power of about 480 diameters is all that is necessary, and it should be used without the Abbé condensor, preferably with artificial light.

My results with this method have so far been very satisfactory, and I feel very confident that it will be found an important aid to diagnosis.

I have tried the reaction in eighty-two cases, in some of them upon several samples of blood taken at different times.

Sixty-one of these cases were typhoid, or subsequently turned out to be typhoid, and in fifty-seven of these I got a positive reaction ; in four I got no reaction. I am not prepared to offer any explanation of the negative results in these four cases, except that in one I had an exceedingly small sample of blood.

In twenty-one cases not typhoid, or subsequently turning out not to be typhoid, I got a negative reaction in all ; there were, amongst other non-typhoid cases, tuberculosis, acute dilatation of the heart, articular rheumatism, septicæmia, and blood from healthy individuals. A number of tuberculosis cases were tried, including two cases of meningeal tuberculosis, with negative results in each case.

I have tried cultures of *bacillus coli communis* in parallel preparations with the typhoid bacillus without obtaining the reaction.

Before closing, a word as to the explanation of this phenomenon. It is evidently due to some specific substance—probably bactericidal—produced in the organism as a result of the typhoid infection. It is likely not of the nature of an antitoxin such as we find in diphtheria and tetanus. An experimental work has shown that the antitoxins are certainly different from the bactericidal substances found in blood serum. It is also not an alexin, in the sense in which Buchner uses the term, as they are not specific. For the present it seems as if no theory as yet will properly explain the phenomenon.

THE BETTER OPERATION FOR HÆMÖRRHOIDS: AN ANALYSIS OF FIVE HUNDRED CASES IN THE SURGICAL SERVICE OF MOUNT SINAI.

BY F. L. VAUX, M.D., C.M.,

Late House Surgeon, Toronto General Hospital; Resident Assistant, Mount Sinai Hospital, N.Y.

DURING the last eight years there have been in round numbers 700 operations for hæmorrhoids, of which 500 were performed by clamp and cautery, about 125 by ligature, and some 75 by the White-head method of extirpation. Believing that the clamp and cautery operation is the quickest, safest, and best, I submit this remarkable series of 500 cases as evidence. There has been kept a careful record of each case, and all figures and information in this article can, at any time, be verified.

To every hospital falls some special line of work to a greater or less degree, and to the better accomplishment of this work it bends its energies. Thus hospitals, like practitioners, become specialists to a certain extent, and some routine method of operation or treatment is adopted, usually that which after long experience is found to combine the three factors of speed, efficiency, and safety. The form of operation selected should also be a radical cure, if possible; this feature, indeed, is the one surgeons are looking for in every new operation. The nature of this special work will be largely determined by the locality in which the hospital is situated, as not only will certain diseases be endemic, but the patients coming to it may be of another race or nationality, perhaps peculiarly susceptible to certain maladies. Thus the prevalence of malaria in the south gives to practitioners there an opportunity to study that disease which is denied to the physician in Ontario; and the immunity of the negro race to yellow fever, together with their peculiar susceptibility to smallpox and pneumonia, can be only observed by those living in the tropics.

In New York race characteristics are more in evidence than climatic, although malaria is common enough.

The vast immigration to New York in past years, which to a less extent goes on to-day, has consisted very largely of Russians, Germans,

and Italians. The Russian and German elements contain many Hebrews who have been exiled from their country for political or religious reasons. Naturally, when sick, they seek a hospital which, though non-sectarian, and having all classes within it, yet is endowed and largely patronized by Hebrews.

To Mount Sinai, then, comes a large number of foreigners of the poorest and most ignorant class, but affording a splendid field for clinical work. The ailment to which they are most subject is one due largely to their occupation and habits, viz., hæmorrhoids, the causes of which we will now consider.

In investigating the cause of a disease or injury, one should look first to the occupation of the patient; thus we have the flat foot of the billiard marker and the anthracosis of the coal mine.

The greater number of men brought to Mt. Sinai with hæmorrhoids are tailors, though other occupations are in evidence, but all sedentary. Nor do these tailors stand behind counters in well-lighted and ventilated stores. On the contrary, they are jobbers, and not master tailors, and sit cross-legged on a hard counter, or on wooden chairs, a dozen in a room, stitching from morning to night in East-side sweat shops. This posture brings a constant strain on the perineum, tending to keep up any inflammation which may already exist.

The sedentary life thus led, added to the common practice of retaining a stool as long as possible, soon produces a habit of constipation, and the fecal masses, being hard and irritating when voided, scratch and abrade the mucous membrane, causing bleeding piles in many cases. The straining which such a stool necessitates also tends to the protrusion of the rectal mucous membrane and the engorgement of the venous radicles. In many cases the anus is not cleansed after defæcation, or, if at all, it is with the roughest material, which contributes to the inflammation.

All varieties of hæmorrhoids come under observation in the course of a year, but the form most frequently met with is the external pile in a condition of acute inflammation. Internal hæmorrhoids are less frequent, but are also treated by clamp and cautery.

The Whitehead operation, which was formerly in vogue to a much greater extent, is now limited to that class of cases in which the mucous membrane of the rectum is either involved too high up to be reached by the clamp or in which previous operations have left a raw and ulcerated surface. It is found, however, that by careful and continuous traction on the sponge, as described below, hæmorrhoids situated high up can be protruded and excised in many cases where formerly a Whitehead was thought to be indicated.

The preparatory and after-treatment is a matter of routine in Mt. Sinai, and is as follows :

On admission patient is given a bath, and if hæmorrhoids are strangulated an ice-bag is applied to anus. Should they be merely smarting and inflamed a wet Theirsch dressing is applied. The night preceding operation the patient is given a half-ounce of compound licorice powder, and at 5 a.m. a high enema, followed by a low one at 7 a.m.; if necessary, these are repeated, the test being that the fluid comes away absolutely clear. No food is given on the day of operation. The perineum is shaved in the ward, but the scrubbing up of the patient is in the operating room. When the patient is anæsthetized, the first assistant dilates the sphincter and thoroughly cleans the rectum with soap and water, by means of a sponge and holder, and then it is irrigated. The perineum and thigh are scrubbed with soap and water, followed by ether and bichloride of mercury. Wet bichloride towels are laid over the pubes and around the field of operation. Absolute antiseptic precautions are observed, the preparation of hands being the usual form for operations, and all instruments most carefully sterilized. There is no room in Mt. Sinai for the idea that the rectum is dirty, and, therefore, hands and instruments may be dirty also. And, as a consequence, sloughing, or pyæmia, is almost unknown. A good-sized sponge with string attached is wrung out of bichloride and introduced high into the rectum, and the assistant, grasping the string, makes sufficient traction to protrude the internal piles.

The technique of the operation may be summarized under three headings:

(1) Apply the clamp in the long axis of the hæmorrhoid so that the scar may be a radiating one, and thus avoid any chance of cicatricial stenosis.

(2) Dip the distal end of the clamp well down, so as to include the mucous membrane of the hæmorrhoid in its entire length, though only clamping off about one-third of its substance. Be sure that no skin is included, otherwise the subsequent œdema will be very great and time of recovery lengthened.

(3) Sear the hæmorrhoid slowly from above downward, layer by layer, the cautery being only at a dull red heat. By observing these precautions any subsequent hæmorrhage is avoided.

(4) Insert a tampon cannula as described below, which must not be removed till expelled by the first stool.

When the anæsthesia wears off the pain will be intense, and opiates must be given. The Mt. Sinai formula is *Tr. opii deod.*, *m. xv.*, every eight hours. At 5 a.m. on the morning of the third day a half ounce mag. sulph. is given, and at 7 a.m. an oil enema is administered through the tampon cannula. This is important, as it saves much pain when the tampon is expelled. The enemas being expelled bring the cannula with

them, and the first stool is comparatively painless. On each successive morning a half ounce mag. sulph. is given, and on the fifth day the cedema will have disappeared in great part, and by the eighth day patient is ready to go. No dressing save a piece of iodoform gauze and a T binder is used. In a ligature operation the bowels are moved on the fourth day, and in a Whitehead on the fifth.

The tampon cannula mentioned above is made by taking a piece of half-inch rubber tubing, sterilizing it, and wrapping around it several layers of iodoform gauze. It is then anointed with sterilized vaseline, and after the operation is inserted in the rectum. The tampon cannula serves a double purpose. It allows the escape of secretions and flatus, so that all danger of retained hæmorrhage is avoided, and also allows the primary enemas to be given without much pain.

In conclusion, let us review the advantage of the clamp and cautery.

It is antiseptic ; not only can the clamp be readily sterilized, but the cautery itself is the most powerful germicide.

There are no sloughs to separate as in the ligature operation.

There are no ligatures or sutures to offer any chance for infection.

It is a radical cure.

The operation is a rapid one.

The time of convalescence can be definitely fixed, the eighth day.

The operation, which was formerly but little employed, is now in high favor in the New York hospitals.

The record of hæmorrhage, pyæmia, or death is almost negative.

It has been customary in some institutions to speak of the clamp and cautery operation as a barbarous and antiquated one. This is not right. The operation as above described offers a better method than that commonly in vogue to the surgeon, and a more satisfactory one to the patient.

In the five hundred cases operated upon in Mt. Sinai, by the above method, there has not been a single death. One case of pyæmia from which the patient recovered is recorded, and a few slight hæmorrhages. Nor so far as can be ascertained have there been recurrences. Can any statistics be more convincing?

CHAIRMAN'S ADDRESS.*

BY A. T. MCNAMARA.

Worthy Guests, Members of the Faculty, and Fellow-Students :

IN welcoming you to this the tenth annual banquet of the Medical Faculty of Toronto University I have a most pleasant duty to perform. Our annual banquet is one of the events of the collegiate year, second only in importance to the examination, but far exceeding that in the pleasures of both anticipation and realization. After partaking of the excellent repast just stored away, we are in the best of condition to enjoy that "feast of reason and flow of soul" which we know from experience at former dinners is always forthcoming from our guests, our faculty, and our students. The length of the toast list is sometimes considered a drawback, but it is all good ; therefore we trust that all who possibly can will remain throughout the whole evening. If you have a latch-key, you are quite safe. However, those who must go early we shall reluctantly excuse. They will miss a good deal ; for, figuratively speaking, we keep some good wine for the close of the feast. Some of the best speeches come at the end.

Since our last banquet a sad event has happened, by which the students of this faculty, as well as the medical profession at large, have sustained a serious loss in the death of the late lamented Dr. McFarlane. Speaking for the students, I may say that he was a man held in the highest esteem by the students of this Faculty, and we deeply deplore that his useful life was cut short by such an apparently trivial accident. His death is an example of the fatal risks run by a medical man in the practice of his profession. Who can say that the "days of heroes and martyrs are past," that "the former days were better than these"? The doctor who, from love for humanity and for his profession, goes about in the unostentatious discharge of his duties, exposing himself wittingly to the contagion of the most loathsome and fatal diseases, is a hero in the highest sense of the term, and if in trying to alleviate the sufferings of others his own life be forfeited his name is worthy of a place on the roll of martyrs.

"The drying up a single tear has more
Of honest fame than shedding seas of gore."

* Delivered at the tenth annual banquet of the students of the Medical Faculty of the University of Toronto, December 2, 1896.

It has been customary, I believe, for the president of the dinner to embody in his remarks a review of medical progress for the past year. Now, I refrain from attempting such a task for two very good reasons. In the first place, I felt my own inability to perform the work satisfactorily; and, in the second place, the majority of those present have already heard the subject most ably dealt with by Professor Peters, who at the opening lecture of this session delivered an address on "Some Recent Developments in Medical Science." After such an able exposition of the subject, it would be audacious on my part (as well as a work of supererogation) to attempt to follow up the same line of thought. The subject of serum-therapy was most interestingly put, and so clearly that he who runs may read.

Perhaps it will be safer for me to talk of some of the things of which our knowledge is still somewhat imperfect. If we are always thinking of the wonderful progress made in medicine and surgery during the past few years, we are apt to lose our becoming humility and induce an attack of what is commonly called "big head." In case of students, such a disease undergoes spontaneous cure about examination time. Here is a paradoxical expression that I shall ask you to consider for a few moments—"The more we know, the more we don't know," or, in other words, "our ignorance increases with our knowledge." Allow me to illustrate by means of a comparison. Let the circle bounding the bottom of this cup represent the medical knowledge acquired by the freshman in the first year of his studies. (No offence to the freshman—this is simply for comparison.) Let everything outside the circle represent the unknown. Now, take the circle bounding the top of the cup to represent the attainments of the second-year man. His knowledge is greater, but he touches the unknown to a greater extent. Then the circle bounding the saucer may be taken to represent the acquisitions of the *third*-year man, while this plate would denote the knowledge acquired by a student at the end of his *fourth* year. I might carry the simile farther, but there are no dishes in the Rossin House large enough to represent the vastness of the knowledge of our professors. Now, if a man contemplates too much what lies within his own circle of knowledge, he is likely to become self-satisfied, and fail to recognize the infinity of knowledge which still lies without, and from which he should strive to enlarge his circle.

In the domain of the physiologist, there are still many things to be discovered. There are two or three bodily organs whose functions are not clearly understood. We judge of the functions of the thyroid gland by what results from its removal. If the thyroid gland be removed a great deposit of mucin takes place in the tissues; hence it is said that the thyroid gland secretes something to prevent this. It reminds one of the

boy's definition of salt : " Salt is what makes your potatoes taste nasty if you don't put any on."

Within the last three or four years disease of the thyroid has been successfully treated by feeding the patient fresh thyroid from an animal, or by the use of a thyroid extract. Following in what seemed to be the same line, other animal extracts have been prepared, such as cardine, cerebrine, etc. If cerebrine could be relied on to supply any deficiency of brain power, it would be an excellent thing for students preparing for examination. It would be essential, however, that the extract be prepared from the brain of an intelligent animal, and not, for instance, from that animal which is symbolic of stupidity, *the ass*. The spleen is another organ about which there is much uncertainty as to function, which must be an important one, to judge from its rich blood supply. The spleen in the human body has been extirpated without fatal results, but it is found that the lymph glands throughout the body enlarge after such removal.

The intelligent practice of medicine goes hand in hand with the study of physiology. The physiologist makes investigations and discoveries, and the physician applies these in his practice. For example, the physiologist demonstrates that in normal human blood there is a certain average number of red corpuscles to the cubic millimetre, and that iron is an important factor in it. The physician recognizing the fact that in anæmic conditions there is a deficiency in the number of red corpuscles and of the iron aims to increase both by medication, and measures his success by a blood-count under the microscope, and by the hæmoglobinometer. It is a thorough understanding of physiology which frees the practice of medicine from empiricism and gives a basis for the rational treatment of disease.

There are still, however, many diseases regarding which the doctors differ. This differing is not an unmixed evil, for in this very fact lies our hope of progress. If all were satisfied with one mode of treatment, there would be no striving for better results. Of course, when perfection in treatment is attained, it is time to cease differing. Typhoid fever is an instance of a disease about which there is much controversy as to treatment. There is the antiseptic method, which aims at killing the bacteria in the intestine. The eliminative and antiseptic method, which aims to get rid not only of the bacteria, but also of the toxins produced by the bacteria. The specific method, by the injection of dead cultures of typhoid bacillus into the muscles, and, last, but not least, the well-known cold-bath treatment, or hydrotherapy. That word hydrotherapy reminds me of an anecdote that appeared in one of the medical journals last summer.

A young doctor, commencing practice, had among his first patients an uncommonly unclean infant brought to his office in the arms of a mother

whose face showed the same abhorrence of soap. Looking down upon the child for a moment, he solemnly remarked, "It seems to be suffering from hydrophobic hydrophobia." "Oh, doctor, is it so bad as that?" cried the mother, "that's a big sickness for such a mite. Whatever shall I do for the child?" "Wash its face, madam; the disease will go off with the dirt." "Wash its face! Wash its face, indeed!" exclaimed the matron, losing her temper. "What next, I'd like to know?" "Wash your own, madam, wash your own." There is one thing about the story that seems somewhat improbable. It describes the physician as a young man just commencing practice. In these days, when the profession is so crowded, it is not likely that a young doctor would be so neglectful of his own interests as to drive away his first patients, even if they had dirty faces. The anecdote would be altogether credible if it described the doctor as old, with a very large practice.

Among diseases about which we have still more to learn are smallpox and scarlet fever, two typical contagious diseases, but, strange to say, the specific germ for each has not been discovered. The bug that produces scarlet fever must possess great vitality, for the infection remains in clothes that have been put away for months, or even years. The ravages of smallpox have been checked by the invaluable discovery of Jenner, the hundredth anniversary of which has been celebrated this year. In practising vaccination Jenner anticipated to a great extent the principle of serum-therapy. If now the germ of smallpox were discovered, cultures made, and an antitoxin prepared, then preventive measures against smallpox would be freed from the objections raised against the use of vaccine lymph. Even in this enlightened day you will occasionally meet with people (physicians sometimes), who, although in other respects quite intelligent, are yet strongly opposed to vaccination. Such people have been given a severe but wholesome lesson in what happened in Gloucester, England, recently. There a feeling was stirred up against vaccination, and the authorities did away with compulsory vaccination. Smallpox broke out, and finding a suitable soil caused such a mortality that the people were quickly brought to their senses. It is another example of the discipline of consequences, Nature's way of "making the punishment fit the crime."

Cancer is a disease about which there is room for further knowledge, both as to origin and treatment. The lay mind has a peculiar idea as to the nature of cancer, and imagines that the salves and plasters of the so-called cancer-doctors draw it out by the roots, even as the stumping-machine pulls the old stumps out of the farmer's back field. Various theories of the origin of cancer have been advanced, but no one theory has been generally accepted. It is perhaps safe to say that the excessive growth of cells is due to irritation, but the nature of the irritant is not

so easy to determine. The frequency of the occurrence of the growth in certain situations seems to point to mechanical irritation as the cause. Then, again, there are some observers who claim to have discovered cancer-bodies, minute parasites, in the cancer-cells. It seems almost as if the surgeons were getting tired of using the knife on cancers. There is a certain amount of sameness about the operation, and perhaps the only feature that lends interest to the case is the element of uncertainty as to whether or not the cancer has been entirely removed. Attempts have been made to check the growth of cancer by the injection of methyl blue into its substance, in the hope of fixing (in two senses) the protoplasm of the cell, and thus preventing cell-multiplication. This method is still on trial. Some are making the experiment of treating malignant tumors with the mixed toxins of certain bacteria. This method was suggested by the beneficial effect which an accidental attack of erysipelas had upon some tumors. There have been some good results obtained, but not sufficient to warrant the hope of much benefit from this mode of treatment. If some bacteriologist can succeed in discovering the cancer-germ, if such there be, and also succeed in preparing the antitoxin, then the disease can be treated rationally as in diphtheria and tetanus.

Just to show how successful the antitoxin treatment of diphtheria is let me refer you to the results obtained in Paris. Up to as late a date as 1893, the average number of deaths from this disease during September alone was twenty. During the first thirty-five weeks of this year no deaths occurred from diphtheria except in the case of two patients who had been brought in from the country, and in whom the disease was far advanced. Results such as these lead us to look for great things to be accomplished in the treatment of other diseases.

There is a disease which is the most common, the most fatal, and therefore the most dreadful of all—a disease which slays its tens of thousands, but with which we are so familiar that we do not realize its destructiveness. Tuberculosis, or, as it is commonly called, consumption, is no respecter of persons. It attacks rich and poor, learned and unlearned. Physicians have not been able to hold out much encouragement when consulted by patients suffering from pulmonary tuberculosis. The rich man is perhaps recommended to try a change of climate, but the poorer man stays at home to die. Some have said that the law of “survival of the fittest” comes into play here, that consumption weeds out the degenerates and incapables. But this is not true. The law of survival of the fittest has no soul. Some of the best and brightest men and women have their lives cut short by this dread disease. While speaking of tuberculosis, perhaps you will allow me to refer to the most recent developments in its treatment. In commencing this address I stated that I did not intend to

speak of the progress made lately in the line of medical science. But the recency of these developments shall be my excuse. The *New York Medical Journal* of November 21 gives a review of some articles that have lately appeared in some of the continental medical magazines, and which deal with the treatment of tuberculosis with Maragliano's serum. I shall not detain you with a description of the preparation of the serum, except to state that a mixed product is used in the inoculation of the animal to be immunized. In twenty-two cases treated by Dr. Renzi, of Naples, the injections did not give rise to any unpleasant results. Generally a sense of well-being set in, and the appetite improved. In some patients the tuberculous process was arrested, and in others there was progressive improvement. The curative action was gradual, and could not be hastened by increasing the dose. Even in hopeless cases there was marked alleviation of symptoms, as shown in a case reported by Dr. Regnier. Such gratifying results lead us to look for great advances in the treatment of pulmonary consumption.

In conclusion, let me say that in this address I have tried in an imperfect way to enumerate a few of the things about which we require further knowledge, and to indicate at the same time some of the lines along which we are to look for advance. This confession of ignorance should not tend to dishearten us, but rather should act as a stimulus to further efforts to increase the circle of our knowledge. We cannot all hope to be bacteriologists and pathologists, but we can so apply ourselves to our work that we may be able to appreciate and make practical application of the results obtained by the investigations of others. Our professors are trying to lay in our minds a broad and firm foundation of medical knowledge, so that when we go out from their care we shall not be empirics, but intelligent physicians. Then although we know that the path of the medical practitioner is not strewn with roses, we can go forward, taking as our motto a stanza from Longfellow, which in these days is peculiarly applicable, in more senses than one, to men entering upon a medical career :

“ Let us then be up and doing,
With a heart for any fate,
Still achieving, still pursuing,
Learn to labor and to wait.”

A REPORT OF THREE CASES OF POST-TYPHOID NEURITIS.*

BY DR. GEO. J. PRESTON,
BALTIMORE, MD.

THAT neuritis is not a common complication of typhoid fever is evident from the fact that during my connection with the city hospital for several years I have not seen a single case in the wards there. Osler reports but four cases of neuritis in 389 cases of typhoid fever treated at the Johns Hopkins Hospital. It is not uncommon during the course of typhoid fever to have the patient complain of pains in the limbs, and this sometimes appears to be a distinct local neuritis. Hanford and Osler have both called attention to the "tender toes" which would seem to be a mild form of local neuritis. The graver forms are apt to appear during, or shortly after, convalescence. The following are examples of the severer forms:

CASE I. The patient, a young man, had never had any severe illness. Was taken with fever May 25, and came to the hospital on the 30th. The fever ran a typical course, reaching 105 degrees. On July 8 he suffered a relapse, and fever again became very high. He continued in a critical condition until July 21. With the beginning of convalescence he began to complain of pain in the legs, and the slightest contact with the bedclothes produced great suffering. For three or four days there was an erysipelatous blush over the right leg, and later a small abscess developed at the ankle. The pain in the leg continued, and an examination at this time showed loss of patellar tendon reflex, some atrophy, double foot drop and a reaction of degeneration. There was no marked disturbance of sensation. He slowly recovered the use of his limbs and is now perfectly well.

CASE 2. The hospital nurse was taken with typhoid fever, June 6, and the disease ran a very severe course, with high temperature, and the patient was delirious for four weeks. On the fourth day after the subsidence of fever the patient complained of very severe pain in the right arm and leg, with inability to move the affected parts. In ten days the pain subsided. At this time, after spending a day in the country, the pain

*Abstract of a paper read before the Clinical Society of Maryland, with discussion.

returned with great violence, spreading over the whole body, but most intense in the left leg. The leg showed some œdema and was hyperæsthetic. At the present time there is loss of patellar tendon reflex, muscular atrophy, and the reaction of degeneration in both lower extremities with double foot drop. The patient has very little power of motion in the lower limbs, and the grasp of the hand is very weak. There has been no disturbance of the bladder or rectum, and during the whole course of the disease very little loss of sensation.

CASE 3. Young man of 28 years developed typhoid, July 25, 1895. Previous to this he had shown signs of pulmonary tuberculosis. The disease ran a usual course of about five weeks, bedsores developed, and the temperature assumed a septic type. At this time there appeared an intense hyperæsthesia, most marked in the lower extremities, and paralysis of the extensor muscles of both arms and legs, followed by atrophy. There was a gradual return of power, though the paralysis never entirely disappeared. The arms recovered more perfectly than the legs. The patient died from nephritis.

These cases illustrate the severer forms of neuritis, and there can be no doubt of the etiological influence of typhoid fever. A point of very great interest, and one that is not yet determined, is whether inflammation beginning in the nerve trunk, or many nerve trunks, may by direct continuity involve the spinal cord. Some cases of tabes are extremely suggestive of this possibility. If such a theory can be established, then post-febrile neuritis would become of very great importance. A clinical point worth noting, and one that has attracted my attention for some years, is that cases of neuritis may present very marked motor disturbance, amounting at times to complete paralysis, without showing, or at least very trivial, sensory disturbances. The possibility of the etiological bearing of neuritis upon the degenerative cord diseases and the necessity of more careful treatment of the former is worthy of attention. I am a firm believer in the great utility of electricity in the treatment of neuritis, local or generative, and think that careful electrical treatment greatly hastens the recovery.

DISCUSSION.

Dr. L. F. Barker : In connection with these interesting cases reported by Dr. Preston, I may be permitted to refer to two or three histological points which have suggested themselves as he read. In the first place an entirely new conception of the nature and effects of neuritis is possible since the introduction of the neurone idea into the study of the nerve system. We know now that the axone (axis cylinder) of every nerve fibre is always a process of a nerve cell ; and what we used to designate as the nerve cell, together with its dendrites (protoplasmic processes) and axis

cylinder processes with its terminals, represent all taken together integral parts of a single cell of the body, a single neurone. It is not easy, therefore, to think of an injury to a nerve fibre without assuming alteration in the structure and function of the whole neurone of which the axone of the fibre forms a part. Experiments on unicellular organisms, *e.g.*, a *moebæ*, have shown that injury to one portion of the protoplasm leads to disturbances in the vital manifestations of the whole of the cell. If this be the case in what we are accustomed to look upon as simple, more or less undifferentiated protoplasm, it would not be surprising to find that injury to any portion of the nerve cell, which represents, from the standpoint of irritability, the cell in the animal kingdom most highly differentiated, results in disturbances of metabolism and functional activity through all parts of the unit. We are not without experimental evidence upon this point. Neisser has shown that if a peripheral nerve be cut, in addition to the Wallerian degeneration in the distal ends, and the changes demonstrated by Bregman, Darkschewitsch, Marinesco, and others in the central ends of the nerve fibres, that also, very early, definite changes occur within the cell bodies of the corresponding neurones. Even if the nerve be not cut through, but be simply injured by the application of the chemical substances, *e.g.*, common salt, nearly all the cell bodies of the central nucleus giving rise to the fibres injured show within twenty-four hours distinctly recognizable alterations. These alterations consist in a modification in the appearance of the substances within the protoplasm of the cell body, which stain of a deep blue color by Neisser's method. There is some evidence, too, that injury to the dendrites of a given nerve cell will affect the whole neurone deleteriously, and, of course, injuries to the cell body itself are always followed by retrogressive processes in both dendrites and axone. One portion of a neurone, therefore, cannot be injured without influencing materially the health of the whole nerve unit. Inasmuch as an anterior horn cell with its protoplasmic processes, its axone running out through the anterior root to form the axis cylinder of a motor nerve fibre, together with the collaterals and terminals which come off from the latter, all represents part of one neurone, it would not be surprising if in peripheral neuritis affecting especially the motor nerves that there should sometimes be symptoms referable to intra-medullary disturbances. That permanent lesions of the spinal cord are not more common than they are after neuritis is not, however, surprising when one recalls the regenerative power of the neurone. As long as there is no absolute interruption of the continuity of the axone, or if there has been interruption and the subsequent conditions permit a re-establishment of the connections between the axone and its corresponding peripheral organ, there may be a complete *restitutio ad integrum* of the central parts of the neurone,

and Neisser's experiment show that the stainable substance of the cell body resumes its normal characters. The studies of Goldscheider and Moxter upon the way in which the tetanus poison reaches the spinal cord from a peripheral lesion are interesting in this connection, but I can only mention them.

Dr. Preston has referred briefly to the distribution of the motor and sensory nerves in the peripheral nerve trunks. I may say that physiological experiment has shown that the motor fibres of one portion of a limb, *e.g.*, those for the flexors and extensors, are not evenly distributed within the nerve trunk leading to the limb, but are arranged in it, to a certain extent at least, according to the functions, *i.e.*, according to the groups of muscles to which they are to be distributed. I was led in studying a case of elective sensory paralysis to the view that a similar arrangement may hold also for the sensory nerves. It would appear that in the peripheral trunks the nerves for the conduction of pain, pressure, warmth, and cold may be arranged more or less according to the different paths which they have to follow on the entrance into the spinal cord.

I can support Dr. Preston's view regarding the curious inequality in the action of the toxins upon the different portions of the nervous system. We have already a great mass of clinical and experimental evidence bearing upon this point. More than one toxin appears to be definitely elective in its action, and the nervous diseases of apparently toxic origin support the view in their varying symptomatology. I need refer only to the researches upon the action of strychnine, carbon disulphide, alcohol, tea, etc., in this connection. This inequality is, however, what was to be expected rather than surprising, inasmuch as we must think of the members of the different groups of neurones, and probably of the individual members of the same group, as single organisms, each with its own life history, each with its own metabolism, each with its own specific function. It would therefore be a matter of great surprise did the same chemical substance act in precisely the same manner upon the different neurone individuals. That the same group of neurones may vary in susceptibility in different individuals is evidenced by the irregularities of the symptomatology in various intoxications. It is probable, however, that many of the curious irregularities of action are attributable to factors independent of the functionally irritable strychnines themselves, *e.g.*, those connected with the vascular supply.

Dr. W. D. Booker: I would like to report a case, which I saw last summer, of painful points coming on in different parts of the body during the anæmic condition following typhoid fever. These spots would occur without any perceptible cause whatever. The first point noticed was in the big toe, and caused considerable lameness. It disappeared within

twenty-four hours as suddenly as it had come. The next point appeared in the small of the back, coming on just after breakfast and disappearing some time in the afternoon. The next and most severe of all was between the ribs, and lasted for a week. It was of such a character that we suspected pleurisy, but we could find no signs on auscultation. The pain was severe on deep inspiration and coughing was almost impossible. The next point appeared just in front of the heel on the outside of the foot and lasted about twenty-four hours, disappearing suddenly. Then the heel itself was affected. These attacks were from four to five days apart. The only reappearance since September occurred night before last, when the pain came on again in the big toe and was so severe as to prevent sleep. In the morning there was some swelling about the toe, but when he commenced walking it all disappeared.

The discussion then turned upon typhoid fever in general, and Dr. Simon Flexner spoke of mixed infections :

I became interested in this subject during three or four years of opportunity to study the most unpleasant cases of typhoid fever from this point of view, namely, those that came to autopsy. They are not interesting to physicians except to look back upon. I became impressed with what was not a new thought, but which was a growing one, that typhoid fever does not always run its course as a simple infection. There occur sometimes symptoms that point to septic infection of a different character from that of typhoid, and I think we have now a definite pathological basis for such an opinion. The intestines contain a large flora, as you know, in life. We have to deal particularly with the pus-producing bacteria, and these are such constant inhabitants of the intestines that we can readily understand how that, typhoid fever being on hand, they may become important factors, the condition of typhoid being favorable to the increase of these organisms. It is especially when they leave the intestines that we have to deal with mixed infections as a factor, when they get into the peritoneum, spleen, or mesenteric glands, and cause there suppurative processes. Such inflammatory processes, I think, are very seldom due to the bacteria of typhoid, the pyogenic organisms being usually the cause. These are, then, the cases of mixed infections *par excellence*, where we have to deal with a combination of effects, partly due to the typhoid germs, and partly due to the pyogenic organisms. There are cases of actual septicæmia of pyogenic origin which are associated with typhoid fever. A French writer has laid stress upon this point as to how it increases the seriousness of the prognosis. We have had some cases of blood infection where cultures were made during life. The typhoid fever germ so rarely getting into the blood and increasing there, it is difficult to obtain them, but the pyogenic bacteria found there may be culti-

vated. The presence of pyogenic organisms in the blood need not be so alarming as we once thought; we are so accustomed to think of these things as we see them in the laboratory. It causes death of the animals used there by overwhelming them, but during the past winter we have come across cases where the blood cultures gave pyogenic bacteria, and yet, after the evacuation of the local accumulation of pus and careful, clean treatment, the bacteria in the blood disappeared and the cases recovered.

Dr. J. H. Branham: I should like to relate, from a clinical standpoint only, a case which came under my charge this summer. Patient was a man of forty-one years, large and strong, and I saw him on the 13th of August, when he had been sick about one week. Up to that time he was supposed to have been suffering from malaria. When I first saw him the prominent symptom was a small quantity of bloody urine, with a large amount of albumen. The temperature was very irregular, of a typical typhoid character, and, later, other symptoms of typhoid fever developed so distinctly that I think there can be no doubt of this diagnosis. For the first few days the temperature ranged from 103° to 105° . The ordinary diuretics were given at first with cold sponges, and after a few days the kidneys began to secrete again. Up to the 25th the patient did well. At that time he showed indications of phlebitis in the right leg, which increased and gradually extended downward, until the limb was swollen from Scarpa's triangle to a point a little below the knee. The temperature, [which had gone down nearly to normal a few days before this, again began to rise. The ordinary treatment for phlebitis was followed, but on the 2nd of September, in spite of the cold sponges, his temperature was 105° , and his condition critical. Cold baths were given, but not as regular as we would wish, because of the patient's actions. The patient became completely comatose; his veins became somewhat softer, but his condition was so bad that I concluded that he could scarcely recover without operative intervention. I opened the vein, and found some pus, mixed with a large amount of clotted blood. Two openings were made, one in the upper part of the thigh and another below the knee, and the vein was washed out antiseptically. The phlebitis seemed to extend into the pelvis. After the operation the patient improved very rapidly, became conscious again, and his temperature went down to 100° or less. I thought he was going to get well, but about four days later he became comatose again, and, although there was no recurrence of the symptoms, there was some swelling below the knee, and on the night of the 7th he died. There had been no physical signs of heart trouble. I suppose the sepsis had extended to some of the internal organs, and death was due to that. This patient had suffered from phle-

bitis of the same limb twice before, the last attack occurring two or three years ago. The final attack occurred near the end of the third week of typhoid.

Dr. George J. Preston : I would just make one observation in regard to the cases we have seen at the city hospital this summer. We have had four well-marked cases during that time, and two last summer, of mixed infection, which is, I think, a remarkable record. None of them went to post-mortem, and whether they were typhoid, of course, I cannot prove, but, clinically, they were typical cases. In all the malarial organisms were present, and continued for several days after the administration of quinine, and even ran the typical typhoid course. We had, perhaps, twenty-five or thirty cases in the hospital since spring, and four cases of mixed infection is certainly a large proportion. I have been astonished with the frequency that malaria has complicated everything this summer. I have not seen so much before as this year.

Dr. Simon Flexner : Without knowing the statistics exactly, I should agree with what Dr. Preston has just said, that the proportion of mixed infections this year is unusually high.

Selected Articles.

THE OPERATIVE TREATMENT OF INGUINAL HERNIA, WITH A REVIEW OF NINETY-SEVEN CASES— PREFERABLE METHOD OF OPERATION.

BY J. COPLIN STINSON, M.D. TRIN.,
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IN deciding on a cure for inguinal hernia, the problem is to close the breach in the abdominal wall, and furnish a canal for the safe transmission of the spermatic cord. Until the more recent methods, the results from operative treatment were failures in a large proportion of cases. Even now few are so successful that failures do not sometimes occur. I believe that in an immense majority of cases the operation is followed by a complete and permanent cure; that in the great proportion of those remaining the patients are greatly benefited by the operation; that even the slight disfavor with which the operation is regarded by some is due to the bad results obtained by surgeons whose technique has been imperfect. I would emphasize this point: that the operation¹ should not be performed except by surgeons familiar not only with the surgical principles involved, but also with the special anatomical conditions associated with the hernia. In looking over my list of cases in which I performed or assisted in radical operations for herniæ while house surgeon at the New York Post-Graduate Medical School and Hospital, and since I left that institution, I find they have numbered 97. An analysis of these, of the methods employed, of the results obtained, and the description and recommendation of what I consider the preferable method of operation, may help to determine the question as to the value and justifiability of operative treatment. Of the 97 operative cases, 79 were inguinal, 5 femoral, 7 umbilical, and 6 ventral. Various methods were used in operating for inguinal hernia—Bassini's, Barker's, Macewen's, and a modification of Championniere's. As I stated at the beginning, an operation to be followed by a cure should fulfil the following conditions:

(1) It should cause total obliteration of the hernial sac. (2) It should

allow for the safe transmission of the cord, *i.e.*, the cord should not be subject to pressure in any part of its course. (3) It should not result in atrophy or inflammation of the testicle, nor in pain, thickening, or inflammation, nor in any manner interfere with the function of the cord or its structures. (4) Should close the breach in the abdominal wall.

I shall now describe in detail what I consider the preferable operation for the cure of inguinal hernia. (1) The external incision begins nearly on a level with the anterior superior spine, is carried obliquely downward parallel with and about one-half an inch above Poupart's ligament, and ends at the centre of the external ring. (2) The incision divides the structures superficial to the aponeurosis of the external oblique; the latter is well exposed and a director passed through the external ring beneath this layer, which is slit up to about one-half an inch above the internal ring; the cut edges are lifted up and freed from structures beneath, exposing internally the internal oblique and transversalis muscles, and sometimes the rectus, externally till the shelving sharp edge of Poupart's ligament is clearly seen. (3) The cord and sac are examined, and any adhesions to surrounding structures separated. Next they are separated from each other well up within the internal ring. The sac is examined and carefully opened with a short snip of the scissors; the opening is enlarged with the fingers, and if any adhesions exist internally these are separated. If the contents is omentum, and is matted together, thickened or inflamed, or in any other manner changed, it should be tied off; each vessel in the omentum is to be ligated separately, and even the smallest oozing vessel must be tied. Hold up the sac, after removal of its contents, and where it merges into the general peritoneal cavity close it with a running suture of fine catgut. When released the sutured edge immediately slips back into the abdomen. The cord and its vessels are then examined, and any varicose or superfluous veins excised high up within the internal ring. Examine the canal² for masses of adipose tissue, which should be removed. (4) Expose the internal ring—an opening in the transversalis fascia—by retracting the internal oblique and transversalis muscles. Any masses of adipose tissue which crowd into the ring from the subserous tissue should be removed; take the cord and place it at the lower angle of the internal ring. Now close the internal ring with a sterilized chromicized tendon suture, commencing at the upper angle; suture from above downward, leaving only sufficient room at the lower angle for the cord and its full vessels to play through. The edges of the aponeurosis of the external oblique are retracted, and the edges of the internal oblique and transversalis (sometimes the edge of the rectus on the inner side), and the shelving edge of Poupart's ligament on the outer side, are brought together with three or more interrupted chromicized tendon sutures; the cord is

situated beneath the above layers of sutured structures ; at the lower angle close to the pubic bone only sufficient room is left for the cord and its full vessels to play through. (5) The divided edges of the aponeurosis of the external oblique are brought together with a continuous tendon suture. (6) The skin edges are brought together with a continuous catgut suture, without drainage.

The steps of the above operation are simple, easy to follow, and the operation may be quickly performed. In an uncomplicated case it may be completed, depending on the dexterity of the operator, in from fifteen to thirty minutes. It has many advantages, and should be followed by better results than the other recent operations. It has all the advantages, without the disadvantages, of the Bassini operation. It will be observed that the cord is not disturbed, is not displaced, is not subject to pressure, is not transplanted between two layers of buried sutures, and is not on the stretch, as in Bassini's operation. The cord is not transplanted between the edges of the freshly cut muscular layers, and thus subject to the liability of pressure from muscular contraction, or from adhesions to surrounding structures from its internal to its external ring, as in Halsted's operation. In both the Bassini and Halsted operation the function of the nerves and vessels of the cord and the cord proper may be interfered with by pressure on, abnormal position of, or adhesions to surrounding structures ; and subsequent to these operations there may be thickening, swelling, tenderness, or inflammation of the cord, or atrophy, swelling, or inflammation of the testicle.³ Thickening and swelling of the cord and its structures I have frequently seen follow Bassini's operation.⁴ The natural position of the cord is at the lowest part of the internal ring, and in the operation I have described in detail its position has not been changed. As to the formation of a new internal ring this is absolutely unnecessary ; the suturing of the enlarged internal ring reduces it to its normal size, nor is it necessary to place the cord superficial to the internal oblique and transversalis as in Bassini's, or superficial to the external oblique as in Halsted's operation, for reasons already mentioned, and for those following. After closing the internal ring as I have described, this orifice is small ; the cord is not on the stretch, but hugs its lower angle where it passes down into the pelvic cavity to the base of the bladder, whereas in the Halsted and Bassini operations the cord, from its new position and relations, is on the stretch, and, entering the ring less obliquely, the ring with its contents is more likely to favor a return of the hernia. The very high removal of the hernia sac,⁵ the removal of every altered portion of peritoneum at its neck, the separation of adhesions internally and externally with suturing of the neck of the sac with fine catgut, leaves a smooth surface to the peritoneum, whereas if its neck were ligated there would

be more or less puckering of the peritoneum which would interfere with the free movement of the bowels over its surface. In ligating omentum it is necessary to remove those portions that are abnormal; altered omentum must not be returned to the abdomen, as it acts as a foreign body, and has at times set up peritonitis.⁶ I would not advise the pulling down of healthy omentum and its removal, as trouble may follow. Several cases are recorded of local peritonitis. In one case the result was fatal from internal hæmorrhage, death occurring from slipping of the ligatures from the omental stumps. Even the smallest omental blood-vessels must be ligated before the stumps are returned to abdomen, for the reason that there is a diminution of the muscular cells in their walls; consequently, if a small oozing vessel is returned, its walls do not contract and retract like those of other arteries, and an internal hæmorrhage will result. Halsted lays great stress on excision of superfluous veins to reduce the size of the cord, and reports three cases of atrophy of the testicle following his operation. It is advisable where there is a varicose condition of the veins to excise them high up within the internal ring, otherwise no immediate and little or not remote benefit will be derived. It is obvious that if the excision is performed in the inguinal canal the bulk of the cord is not materially reduced at the internal ring. I have frequently met with slightly enlarged veins due to pressure of the sac and its contents; after removal of the sac the veins resume their normal size. It is highly important to remove all particles of fat from the inguinal canal, internal ring, and subperitoneal tissue, especially, if the masses from the latter bulge into the ring. The closure of the internal ring is the most important step of the operation; most of the success depends upon the suture of this opening in the transversalis fascia. In closing this opening lift up its edges with forceps, thus avoiding injury to the surrounding and subjacent structures, especially the epigastric artery which runs along the inner side of the ring, and keep the immediate work well in view in the centre of the field of operation; suture the ring from above downward, commencing at the upper and leaving only enough room at the lower angle for the cord and its full vessels to play through. In the above step and for suturing the internal oblique and transversalis to Poupart's ligament a blunt-pointed hernia needle is to be preferred, for passing the sutures. The cord and its structures are located beneath the sutured edges of the above-mentioned structures. The character of the suture material is very important. Sterilized chromicized kangaroo tendon is the most suitable material for a buried suture. Great credit is due Dr. Marcy, of Boston, for bringing to notice the merits of this suture material. Tendon is the most suitable, it is non-irritating, and it is not absorbed for two or three months. Busse⁷ in his experiments showed that perfect tendinous union does not

occur under ten weeks, or just about the period for the absorption of the kangaroo tendon.

I shall now proceed to analyze my cases. Chromicized kangaroo tendon was used as a buried suture in 82 cases, chromicized catgut in 5, silk in 5, silkworm gut in 4, silver wire in 1. In the cases where tendon was used all the wounds healed by primary union except 2. In these suppuration was slight and located superficial to the aponeurosis of the external oblique. In those in which catgut was used all healed by primary union, but in one case three weeks after the operation two sinuses formed; one closed, but at the last report the other was still discharging slightly. In those in which silk was used one was followed by suppuration with a subsequent discharging sinus. In those in which silkworm gut was used two of the wounds suppurated and cicatrization was not complete for weeks. During the healing some of the worm gut was thrown off. In the case in which silver wire was used catgut was used to ligate the blood-vessels, this wound suppurated very badly, and took weeks for complete cicatrization.

Final results. Most of the operations analyzed were performed during 1893 and 1894, so that in many sufficient time has elapsed to enable us to judge of the results. In the 82 cases in which tendon was used there has not been a single relapse, nor has there been any in the cases in which chromicized catgut was used. In those in which silk was used there have been no relapses, but in one case in which a sinus formed the discharge continues, and this will keep up, I think, until the silk is thrown off or removed by a second operation. In those cases in which worm gut was used there were no recurrences, but in the two cases in which suppuration occurred the resulting scars were not strong, and as soon as cicatrization was complete light, well-fitting trusses were at once supplied. In the case in which silver wire was used there was no recurrence. The resulting scar was not strong, and here, too, a light-fitting truss was at once supplied as soon as cicatrization was complete.

Mortality. In the 97 cases operated upon the mortality was *nil*. There was one case not included in my list, a neglected strangulated inguinal hernia. The patient was admitted to the Post-Graduate Hospital and was at once taken to the operating room. Anæsthesia with ether was commenced, but he had scarcely taken five breaths before respiration ceased.

I shall now refer briefly to the results obtained by Dr. William B. Coley, who operates at the New York Post-Graduate Hospital. Dr. Coley reports⁶ 133 cases of operations for various kinds of hernia; 124 were for inguinal hernia. In 117 cases kangaroo tendon was used as a buried suture. All but three were traced. There were no relapses. The only case Dr. Coley reports in which recurrence took place

after the use of the tendon was one of umbilical hernia. In two cases silk was used. Both relapsed inside of three months. Chromicized catgut was used in five cases with no relapses. Dr. Coley's mortality was one death from pneumonia in a child, who died on the fifth day after operation. There was no abdominal complication nor suppuration in the wound. Dr. W. B. De Garmo,⁹ in a paper on surgical treatment of hernia, strongly advocates the use of tendon as a buried suture.

Dressings and after-treatment. In many cases aristol was dusted on wound. Over this bichloride gauze was held in place by strips of rubber plaster; finally cotton and a spica bandage were applied. The scrotum was left exposed and the testicles were supported. Unless there were indications for interference, the dressings were not disturbed till the eighth day. By this time the catgut was usually absorbed. Firm dressings were reapplied and the patients were kept in bed two weeks, or longer if possible. If the bandages became loose they were reapplied, and were not removed till one month after the operation. None of the patients wore trusses after the operations except those whose wounds suppurated badly, and who had commencing relapse. The operation I have described in detail is to my mind the ideal one, has all the advantages with none of the disadvantages of the other recent operations, and, I think, has the additional advantages which I have endeavored to sum up in my paper.—*Medical Record.*

¹ Championniere : Cure Radical des Hernies.

² W. B. DeGarmo : Clinical Lecture. Post-Graduate Hospital, New York.

³ W. S. Halsted : Johns Hopkins Reports, May 15, 1895. Atrophy of testicle in three of his cases, following his operation.

⁴ W. B. Coley, in the *American Journal of the Medical Sciences*, May, 1895, reports case of orchitis which went on to suppuration following Bassini's operation.

⁵ Championniere : Cure Radical des Hernies.

⁶ W. B. DeGarmo : Clinical Lecture. Post-Graduate Hospital, New York.

⁷ Busse : *Duetsche Zeitschrift fur Chirurgie*, 1891-92, xxxi.

⁸ Coley : *American Journal of the Medical Sciences*, May, 1895.

⁹ *Medical Record*, June 1, 1895.

GASTRIC AND INTESTINAL ANTISEPSIS.

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THE advance in our knowledge of the biological and chemical changes taking place in the digestive tract has made itself felt in various directions. The observations of Brieger and others upon highly poisonous chemical bodies, formed under pathological circumstances, have done a great deal to clear up much that was formerly clothed in doubt, and new light has been thrown upon the causation of diseases which have been hitherto obscure. We have had material enlightenment upon the pathology of cholera, cholera nostras, and the vomiting and diarrhoea of children, and suggestions—somewhat crude in some instances—have been thrown out regarding the nature of such affections as chlorosis, progressive pernicious anæmia, and other more or less definite forms of auto-intoxication. It is, therefore, no matter for surprise that the subject of disinfection of the intestinal canal has become prominent, and the attempt to discover an ideal intestinal antiseptic has become as keen as the struggle for a perfect antipyretic. The question is, indeed, at the present time passing through a stage which recalls the animated discussions that were wont to be waged from time to time over the use of fever reducing remedies. We have some writers who proclaim the importance of intestinal antiseptics, and who carry out that view by a free use of antiseptic substances; whilst, on the other hand, the procedure is deprecated by other observers, who regard it as useless, if not harmful. In truth, our ideas are in a state of transition, for our knowledge has not yet reached the point at which it would be safe to dogmatize. We are ignorant, for example, of the exact function fulfilled in digestion by the bacteria of the intestinal canal. That they play an important part is most probable, though the experiments of Nuttall and Thierfelder* go to show that their presence is not necessary to the life of the lower animals and man, and that the digestion of animal food can be carried on without their agency. It may therefore serve a useful purpose if attention is drawn to some of the considerations which should influence us in arriving at some principles of guidance.

One of the most important points to be borne in mind in the question of the disinfection of the digestive tract is that the conditions under which the canal carries on its functions should be as far as possible preserved. To this end it is desirable to maintain the secretion of the gastric juice and to avoid anything likely to impair its physiological value. That it possesses antiseptic properties has long been known ; and we have it on the authority of Bunge† that the quantity of free hydrochloric acid in man exactly corresponds to the quantity which is necessary to prevent the development of putrefactive organisms. Further evidence may be obtained from the fact that in many of the lower animals a juice, very rich in mineral acid, but containing no ferment, is secreted. This property of the gastric juice should not be lost sight of in the administration of antiseptics, for it is not improbable that some of them in large doses affect the secretion of hydrochloric acid, which may be already impaired by other causes. In addition, injury to the gastric ferment may be readily caused ; for Kobert‡ has pointed out that the enzymes of the digestive tract are interfered with by small doses of many antiseptics, and rendered quite inert by large amounts. Again, if we go to the starting-point of fermentative change, we find, according to Ewald, that it is frequently to be traced to some impairment of the motor function of the stomach and bowel. Decomposition sets in when food stagnates in the digestive tract, and simultaneously, or in consequence, we have a diminution in the secretion of the gastric juice. The abnormal products irritate the mucous membrane and produce acute or chronic catarrh. Under these circumstances, where we have cause to suspect stagnation and decomposition, it is surely more reasonable to adopt the simple expedient of emptying the stomach of its contents. The introduction of a soft tube and washing out the organ is followed by the best results, even in children, and we can leave the stomach empty for a time in the hope that the gastric secretion will be re-established. In intestinal obstruction, where vomiting is prominent, the relief afforded to this symptom by lavage may be partly explained on the supposition that the toxins developed during stagnation are removed. The administration of pepsin and hydrochloric acid will help to check fermentation, and general means should be adopted to improve the muscular power. In this connection, the vegetable bitters are useful, as in addition to being tonics they act as antiseptics (Schmiedeberg). It has further been demonstrated by Schule§ that the temperature of the ingesta is of great importance in this respect. He found that 30.0 grammes of water of a temperature of 18° C. passed through the stomach in ten minutes, that medium (28° C.) and high (40° C.) temperatures led to a marked increase in the motility of the organ, and that iced water, on the other hand, decreased it. This furnishes us with an explanation of the good effect of a large draught of hot water.

In dealing with the disinfection of the intestinal canal, some of the reasons stated above against the indiscriminate use of antiseptics may be urged with even greater force. Kobert's warning that injury may be done to the ferments applies more strongly, or we have the enzymes of the pancreatic and intestinal secretions impaired or destroyed. It is matter for some reflection whether the systematic administration of powerful antiseptics throughout the course of such a disease as typhoid fever does not stand in danger of defeating its object by interfering with powers which are already weak, and inducing digestive disturbance which can be ill-borne. And, still further, it is more than likely to lessen the natural defence of the organism against intestinal poisons, for it is obvious that the splitting up of those bodies and rendering them innocuous—the work, most probably, of bacteria—will be arrested, and their excretion by the urine stopped.

Our first indication in carrying out disinfection of the bowel is to empty it, and for this purpose purgatives are pre-eminent. Amongst these the salts of mercury are easily first. Calomel fulfils the requirements of an ideal intestinal antiseptic. It induces free movements of the bowels both by its local action and by excitation of the intestinal ganglia, whilst the risk of its affecting the mucous membranes is but small. As it passes down the intestinal canal it is converted into the perchloride which restrains excessive intestinal decomposition. This change takes place very slowly and gradually in children, as the intestinal contents are not so rich in chloride of sodium as in the adult. Add to this Wassilieff's observation, that it is without action on the digestive ferment, and we have in calomel a substance whose mode of action is simply and easily controlled. The use of perchloride of mercury in the summer diarrhoea of children is fully recognized, and Broadbent has emphasized its value in typhoid fever, and has drawn attention to the favorable action of a small dose of calomel in removing symptoms of oppression of the nervous system—possibly due to toxins—in that disease. On the other hand, we have a large and increasing group of antiseptics, the mode of action of which is not quite so clear. Some are said to be inert until they reach the intestinal canal, where they are split up into other bodies. Amongst these are included salol, betol, beta-naphthol, benzo-naphthol, etc., which decompose into simpler combinations possessing antiseptic properties. Unfortunately their action upon the intestinal function is not fully known, and the indications for their use are consequently somewhat indefinite. They have been administered regularly—according to some, with but indifferent success—in such diseases as typhoid fever, dysentery, pernicious anæmia, etc., and in the last-named disorder a good result is occasionally obtained from salol, as a case recorded by Dieballa shows.||

The relation of food to this question is necessarily a very intimate one. It would be impossible to discuss it adequately within the limits of this short article, and I allude to it last in order to emphasize its importance in gastric and intestinal antiseptics. One or two points may, however, be mentioned. It is a matter of everyday experience that many intestinal troubles yield simply to a change of diet. Diarrhœa in its various forms may be so treated with complete success, the probable explanation being that we starve the micro-organisms of their nutrient media, and they cease to develop. Much stress is laid by Kobert on the value of carbohydrates in the dietary. According to him, almost all carbohydrates possess an anti-septic as well as a nutritive function. They lessen albuminous putrefaction in the intestine by producing lactic, acetic, butyric, and other organic acids which destroy the putrefactive bacteria. It is desirable, therefore, that food should contain, besides proteids, a relatively large proportion of carbohydrates, for as often as the latter constituent is diminished the decomposition of the albumins becomes more vigorous, showing itself, as it frequently does, by the presence of foul gases exhaled in the breath.

I have drawn attention very briefly to some of the factors which seem to me to have a special bearing on this question. Our knowledge of the conditions under which intestinal antiseptics may be useful is widening every day, and it behooves us, in any attempt to assist Nature's efforts, to define as clearly as we can the limits within which such interference is useful. New antiseptics are constantly coming into use, bearing certificates of their power of arresting germ action. Very often such testimony is founded on culture experiments, and it is not very clear that their behavior in the intestinal canal can be usefully compared. We want more precise indications for their administration, and until experience accumulates it is well that we should have some principles clearly before us.—*The Practitioner*.

* Zeitschr. f. physiol. Chemic, xxi., S. 189

† Physiolog. and Pathol. Chemistry.

‡ Lehrbuch der Pharmakotherapie.

§ Zeitschr. f. klin. Medicin, xxviii. and xxix.

|| Zeitschrift f. klin. Medicin, Bd. xxxi., Hft. 1 & 2, S. 47.

Progress of Medicine.

MEDICINE

IN CHARGE OF

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A SIMPLE METHOD OF DISTINGUISHING DIABETIC FROM NON-DIABETIC BLOOD.

The author (R. T. Williamson, M.D. Lond., Medical Registrar, Manchester Royal Infirmary) describes a simple method of distinguishing diabetic from non-diabetic blood. He has found that diabetic blood is much more powerful than non-diabetic blood in removing the blue color from a solution of methyl blue. The reaction is so sensitive that the difference can be detected by the examination of a drop of blood obtained by pricking the finger. When *certain proportions* of blood and a warm alkaline solution of methyl blue are mixed together, the blue color is removed in the case of diabetic blood, but remains when non-diabetic blood is used. The following is the exact method employed :

Into a narrow test tube are placed 40 cubic millimetres of water (the capillary tube of a Gower's hæmoglobinometer, which is marked for 20 mm., may be used for measuring the fluid), 20 cubic millimetres of blood are added, and then 1 cubic centimetre of a 1 in 6,000 watery solution of methyl blue, and afterwards 40 cubic millimetres of liquor potassæ. The tube is then placed in a capsule or vessel containing water which is kept boiling. At the end of four minutes the blue color disappears and the fluid becomes yellow if diabetic blood has been used, but in the case of non-diabetic blood the blue color remains.

In over thirty examinations of diabetic blood (from five cases of diabetes mellitus), the methyl blue solution was always decolorized; whilst normal blood and the blood from one hundred patients suffering from the

most varied diseases never decolorized methyl blue when mixed in the above proportions. Hence, by this simple method, a drop of blood from a well-marked case of diabetes mellitus may be readily distinguished from non-diabetic blood.—*Medical Press.*

TENDER TOES OF TYPHOID FEVER.

The author calls attention to this distressing affection, which he thinks should be classified as a neuritis. Handford, describing one case, said there had been tenderness of the toes of both feet for some weeks past, so that the nails could not be cut on account of the pain it caused in the nail-bed and in the pulp at the end of the toes. In three other cases he had seen this pain in the toes, and in one of them in the arms also. In one of them a cradle had to be used to relieve the toes of the weight of the bedclothes. In none did muscular waste follow, nor definite loss of sensation. Osler did not think the condition due to the cold water treatment. Hot cocaine solution or cotton-wool seems to give most relief.—*Osler, Johns Hopkins Hospital Report.*

OBSTETRICS

IN CHARGE OF

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PROLONGED GESTATION.

Reckoning from the cessation of the last menses, the first feeling of life, and the objective signs, Dr. Szaszy reports a case in which gestation lasted three hundred and thirty days. The child was normally developed, and forty-nine centimetres long.—*Gyogyaszat Medical Record.*

CATHARSIS FOR PREGNANT AND LYING-IN WOMEN.

Dr. Edward P. Davis, at the last meeting of the American Gynæcological Society, read a paper on "Intestinal Bacteria as a Source of Infection Complicating Obstetric Operations," and, in closing the discussion which followed, said (*American Journal of Obstetrics*, August, 1896) he had asked several therapeutists regarding the best purgative to secure an antiseptic condition of the intestine. Prof. Han had told him that the best method of purgation to thoroughly render the intestine aseptic was the use of minute doses of mercury, particularly the bichloridè. He advised $\frac{1}{200}$ - $\frac{1}{120}$ of a grain of the bichloride of mercury several times a day for a number of days, in conjunction with the use of saline purgatives.

MANUAL REPOSITION OF FACE PRESENTATIONS INTO OCCIPUT POSITIONS.

In cases of mento-posterior positions a spontaneous termination of labor is rarely possible and a correction of the position is urgently indicated. The method of Baudelocque accomplishes this by a direct turning with the hand inserted *in utero*, while Schatz changes the curve of the trunk with the hand working through the abdominal wall. Thorn has combined

these two methods: the hand *in utero* pushes the face upward, while another hand pushes the occiput downwards; an assistant at the same time corrects the position of the trunk through the abdomen. Jungmann (*Arch. für Gyn., Bd.*) reports three cases in which this method was successful. The method is recommended in mento-posterior cases, in which the os permits the entrance of two or three fingers; the head must be movable and the pelvis of normal or nearly normal dimensions. (All authors are agreed that it is malpractice to permit mento-posterior positions to persist and await spontaneous delivery. Interference is absolutely indicated. Our experience, however, leads us to recommend podalic version instead of attempting to change the face into an occiput position. The forces which were originally responsible for the face presentation generally continue to exist, and in many cases we are again confronted with a face position shortly after its manual correction. Podalic version is not more difficult than manual correction, and it permits the rapid termination of labor whenever desired.)—*A. Raymond-Schroeder in American Journal of Obstetrics.*

It is probably well in such cases to make an effort to correct the position by the method of Baudelocque or some modification of the same, but I have found it difficult or impossible to accomplish this result in the majority of mento-posterior positions. My experience coincides with that of Dr. Raymond-Schroeder, as expressed in his note; but I would go a little farther than he, and say podalic version is, *as a rule*, much more easy than manual correction, excepting in a small minority of such presentations.

A.H.W.

UNCONTROLLABLE VOMITING IN PREGNANCY CONTINUING AFTER THE DEATH OF THE FŒTUS.

J. Fabre (*Marseille Méd.*, August, 1896) notes a case of uncontrollable vomiting in a primipara, 18 years of age, who had previously suffered from anæmia and hysteria. The vomiting began at the fifth month of pregnancy, and had continued up to eight and a half months, with increasing weakness. The fœtal heart was not to be heard, yet the vomiting continued, and medicinal means were of no avail; it was therefore decided to induce premature labor, and Krause's method (introduction of a bougie into the uterus) was employed. On the day before this was done the patient was so weak as to require injections of caffein and ether, and of 200 g. of artificial serum into the subcutaneous tissue of the abdomen. Twelve hours after the introduction of the bougie into the uterus a dead female fœtus was delivered by means of forceps. The vomiting still continued, and the patient died twelve hours later. The only lesions found at the necropsy were those of recent gastritis. The case is interesting, for

the death of the fœtus was not followed by a cessation of the vomiting; a circumstance probably due to the fact that here pregnancy was not the sole factor, but had superadded to it the pathological state of the stomach.—*British Medical Journal*.

GLYCERINE IN THE INDUCTION OF LABOR.

Kossmann (*Therap. Monatsh.*, June, 1896) refers to the accidents which have occurred in induction of labor by injection of glycerine. He considers that they were caused by the drug being used in large doses for hygroscopic purposes, and not with the more physiological object of, as in the rectum, stimulating unstriated muscle. In spite of the previous records, he himself has used glycerine injections in two cases with marked success. The first was that of a woman who had been pregnant twice previously, and had on each occasion gone four weeks over her time and given birth to a dead child. This time gestation had lasted forty weeks. The patient was very large and wished extremely for a living child. Five c.cm. of glycerine were injected, with antiseptic precautions, into the cervical canal, and a colpeurynter introduced into the vagina. In a few minutes powerful pains began; the os dilated, and combined version became possible. This was done, and a healthy girl delivered within one and a half hours from the injection. The mother made an uninterrupted recovery. The second case was that of a multipara suffering from enormous varicose veins of the legs, vulva, and vagina, which had so obstructed the last labor that the child was born asphyxiated. Kossmann therefore decided to induce labor on this occasion at the thirty-fifth week. He injected five c.cm. of glycerine into the os, and placed a strip of iodoform gauze soaked in glycerine in the cervical canal, and a colpeurynter in the vagina. Five minutes later pains came on. Version was performed, and the child delivered with ease. The puerperium was uncomplicated, and the pains rapidly got well. He concludes that the injection of this quantity of glycerine into the cervical canal will bring on strong pains without leading to nephritis or any other untoward effect. This method is much more rapid and certain than puncture of the membranes, vaginal douches, etc., and is free from the danger of infection which attends injections into the uterine cavity itself. The introduction of the colpeurynter into the vagina serves to keep up the pains when once started, and therefore makes further injection of glycerine unnecessary. He recommends its use in combination with the injection as the best and, next to simple vaginal douches, the most harmless method of inducing labor.—*British Medical Journal*.

UTERINE LEUCORRHEA.

The following is a useful astringent and antiseptic injection for uterine leucorrhœa :

Tannic acid, ʒij.	} aa ʒj.
Pure alcohol	
Beechwood creasote	
Distilled water, ʒviiij.	

M. A tablespoonful of this solution to be mixed with a quart of tepid water, and used as an injection. Three or four injections daily.—*The Practitioner*.

PRURITUS OF THE VULVA.

In cases that are not parasitic, says the *Indépendance médicale*, M. Mussy advises the following applications :

R	Finely powdered starch	.....	300 grains.
	Bismuth subnitrate,	} of each	..... 15 "
	Potassium bromide,		
	Calomel	.....	8 "
	Powdered belladonna	.....	3 "

M. To be applied twice a day. It is said to give almost instant relief.

When the itching affects the inner surface of the mucous membrane, it is preferable to prescribe the following :

R	Infusion of mallow flowers	.....	1 quart.
	Cherry-laurel water	.....	750 grains.
	Borax	.....	150 "

M. To be used as an injection twice a day. After each injection, the parts are to be smeared with an ointment.—*Medical Record*.

IRRITABILITY OF THE BLADDER AFTER DELIVERY.

In his new *Manual of Midwifery*, just published by the Macmillan Company, Mr. W. E. Fothergill, of Edinburgh, says that the following mixture is very useful in cases of post-partum irritability of the bladder :

R	Salol,	} of each,	drachms.
	Tincture of hyoscyamus,		
	Infusion of buchu, enough to make 6 fluid ounces.		

M. S. : A tablespoonful three times a day.—*New York Medical Journal*.

UTERINE HÆMORRHAGE.

Following abortion and attended with subinvolution :

R	Fluid extract of ergot (Squibb's)	.....	ʒij.
	Fluid extract of viburnum prunifolium	..	ʒij.
	Tincture of cinnamon	..	Enough to make ʒij.

M. Dose : Teaspoonful in hot water from two to six times a day.—Egbert, *Philadelphia Polyclinic*, October 31, 1896.

SURGERY

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EXTIRPATION OF THE RECTUM.

Extirpation of the rectum per vaginam, with utilization of the vagina to replace lost rectal tissue, is an ingenious addition to the resources of the rectal surgeon by Henry F. Byford (*Annals of Surgery*). Of the operation Dr. B. says:

Excision of the rectum by means of perineal section is practical only for the lower four inches, while excisions by the sacral methods are exceedingly bloody, and involve great mutilation. Hence I felt justified in a recent case in attempting the operation by what to me was a new route—viz., vaginal section. The disease extended somewhat higher than I supposed, and the case proved an exceedingly difficult one upon which to try a new method. Yet the mechanical difficulties were so perfectly overcome that the operation, although unsuccessful as far as the saving of life was concerned, seems to me worthy of record as a step in the right direction.

Mrs. Q. consulted me for a cylinder-celled carcinoma, somewhat larger than a large goose-egg, developed in the posterior and right lateral wall of the rectum. About one-third of it projected into the rectum. Its lower border was three inches from the margin of the anal skin, its upper border about two and a half inches higher up. As the mass was not fixed to the surrounding parts, although it extended above the bottom of the cul-de-sac of Douglas, I felt that it could be best reached by a vaginal section, and that the opening which would probably be made into the peritoneal cavity could be much more easily managed than it could from a sacral incision.

The patient was a nullipara, yet it was possible to sufficiently distend

the vagina by retractors, aided by a slight median laceration that occurred during the operation, to work advantageously. I first made a transverse vaginal incision about half an inch below and behind the cervix, and with the fingers separated the vagina from the connective tissue about the incision. I then separated the tumor and rectum from their connections as far up as and above the pelvic brim. Large gauze sponges were pushed up alongside the rectum to prevent hæmorrhage. The rectum below the tumor was now separated from its attachments and the tumor pulled down to the vulva. This manœuvre tore the cul-de-sac wide open and brought down into the vagina two inches of rectum, whose anterior surface was covered with peritoneum. That portion of the rectum containing the tumor was then excised between large hæmostatic forceps above and below acting as clamps. As the upper cut end of the rectum could not be brought down to meet the lower portion, it was sutured into the vaginal wound so as to close the peritoneal cavity and turn the rectum into the vagina.

As soon as the peritoneal cavity was closed, and before suturing the rest of the vaginal wound about the upper end of the rectum, I sewed around the lower end of the rectum (which was about two inches long) with catgut in such a way as to check the bleeding from the cut edges, but not to obliterate its lumen. The bleeding connective-tissue space was then packed anew with gauze strips whose ends were brought through the anus. The vaginal incision was completely closed around the rectum; thus the vagina and upper rectum were separated from the connective tissue and anus. It was my intention at another sitting to attach the lower portion of the rectum to an artificial opening in the posterior vaginal wall and close up the vaginal entrance. Thus the vagina would be made to replace the lost portion of the rectum, and the evacuations would occur naturally through the anus. In another case in which I had removed a portion of the recto-vaginal septum for carcinoma of the rectum, I closed the vaginal outlet and thus utilized the vagina. The patient lived for about a year, and passed the fæces naturally per rectum.

Having completed the operation and overcome the difficulties, I can look back and see how my technique might have been improved. The transverse incision might have been enlarged by a median line incision extending from its centre down, as in the letter **T**. If necessary to procure space, the median incision could extend through the perineal body, and thus expose the rectum more perfectly, as well as relax the vaginal outlet.

A large amount of packing should be used. The separation of the upper rectum leaves an immense oozing space, bounded above by partly

loosened peritoneal membrane. This space should be filled tight with gauze before the suturing commences. The separation of the upper rectum posteriorly might have been sufficient without such extensive lateral tearing, and thus much oozing would have been prevented.

L. L. McArthur in 1890 sutured the rectum into the vagina by means of the sacral incision.* The patient always had sufficient warning of an evacuation to get to the closet, and had some control.

Dr. Joseph Price recently removed the uterus and a portion of the rectum by abdominal section, and sutured the rectum to the vagina, thus producing a "recto-vaginal anastomosis. †

Among the advantages of the vaginal method might be mentioned the following :

(1) The vagina can be made to take the place of the extirpated portion of the rectum.

(2) The excision can be done as high up as by the sacral method, and with less traumatism, and, in case the peritoneal cavity is opened, with less danger.

(3) An intraperitoneal exploration of the tissues about the rectum can be made before disturbing the rectum.

(4) If the operation has to be abandoned after the incisions are made, the wound is less formidable and in a better place.

(5) The patient is more comfortable after the operation than after the sacral methods.

Price's abdominal method possesses nearly all of these advantages, but is more dangerous, necessitates a removal of the uterus, and cannot be adapted to cases extending low down in the rectum.

McArthur's method is more dangerous in cases high enough up to involve an opening into the peritoneal cavity, and in all cases involves more traumatism.

OPERATIONS FOR THE CURE OF FEMORAL HERNIA.

J. C. Stinson (*Medical Record*) explains the lack of success in operations done for radical cure of femoral hernia by failure to restore to the parts, the sac having been removed, their physiological relations, and describes the operation as done by him.

(1) The external incision begins about one-half an inch below the spine of the pubis, and is carried upward and outward for about three inches, parallel with Poupart's ligament. This exposes the sac and the saphenous opening. Poupart's ligament and the spine are well exposed by dissecting up the superficial fascia. The iliac and pubic portions of

* *American Journal of Obstetrics*, Vol. xxiv., p. 557.

† *Medical and Surgical Reporter*, May 16, 1896.

the fascia lata bordering the saphenous opening are each, in turn, lifted and freed sufficiently by blunt dissection from the structures beneath to expose clearly the canal and femoral ring.

(2) Any adhesions of the sac to the surrounding structures should be separated high up within the femoral ring. The sac is opened, and if any adhesions exist internally these should be separated. If the content is omentum, it should be removed, ligating the vessels only. To insure the ligatures not slipping, the "fixation" ligature should be used. The vessel to be tied is defined by spreading out the omentum, and a needle carrying the catgut is passed round the artery by piercing the tissues of the omentum surrounding the vessel. The ligature is tied and the vessel severed beyond it. By this means the ligature is fixed in the omentum and cannot slip. After clearing out the sac, its neck should be dragged down with forceps. The sac, neck, and peritoneum, as high as possible, are to be removed, and the cut edges united by catgut sutures (supra-correction of the peritoneum at the internal ring). The sutured edges, when released, slip back.

(3) The adipose and glandular tissues, etc., are removed from the saphenous opening and femoral canal.

(4) The femoral ring is exposed by retracting the iliac and pubic portions of the fascia lata, Poupart's ligament, and the deep crural arch. Any masses of fat, glands, etc., which bulge into the ring from the sub-peritoneal connective tissue should also be removed. The femoral sheath is now lifted with the forceps. The excess is trimmed away, and, the operator keeping the immediate work well in view, the internal opening is closed by bringing together the anterior and posterior layers of the femoral sheath at the femoral ring. The first stitch is inserted close to the outer side of Gimbernat's ligament, and also includes some of its fibres. Several stitches are inserted as described, approaching the femoral vein. The last one is placed near the septa separating the ring from the vein, but must not be inserted close enough to constrict, or in any other manner interfere with, the full vein. The number of sutures required depends upon the size of the ring. When Gimbernat's ligament is not well developed, sutures may be required as far inward as the pubic spine.

(5) The iliac and pubic portions of the fascia lata are retracted, and, commencing close to the pubic spine, Poupart's ligament and the deep crural arch are sutured to the contiguous portions of the fascia lata covering the pectineus and the reflection of this fascia passing behind the femoral sheath, each stitch extending to but not including any muscular fibres of the pectineus. Several sutures are passed in a similar manner approaching the femoral vein. The last must not be inserted near enough to constrict or in any other manner interfere with the full vein.

(6) Next the saphenous opening is closed. The first stitch is inserted above, close to Poupart's ligament, the needle being passed, first through the pubic portion of the fascia lata on the inner side of the saphenous opening, then through the iliac portion of this fascia on the outer side. Suture from above downward, leaving only sufficient room at the lower angle for the full saphenous vein. The number of sutures required here depends upon the size of the opening.

(7) The skin is closed with catgut, or fine silk, without drainage.

CLOSING THE ABDOMINAL WOUND AFTER CÆLIOTOMY.

Dr. Augustin H. Goelet, Professor of Gynæcology in the New York School of Clinical Medicine (*Clinical Recorder*, July, 1896), believes that the best method of closing the abdominal wound after cœliotomy is to use a continuous suture of fine (No. 1) chromic catgut for uniting the peritoneum, and to include with this suture the muscle, but omit the fascia. Next, deep sustaining interrupted sutures of silkworm gut are inserted. These are made to include the skin fascia and muscular layer. Before tying these the fascia is united separately with a continuous suture of the same fine chromic catgut.

The silkworm gut sutures are now tied, the surface washed off, and dried carefully.

The ideal dressing for the wound is one which has no disagreeable odor and will keep it perfectly dry. This will prevent germ propagation. He now uses a boro-phenate of bismuth known as Markasol, which has given more satisfaction than anything else that has been employed.

This is antiseptic without being irritating, and is slightly absorbent and astringent. It will absorb the first oozing from the wound, but holds in contact with the margin of the wound the protective lymph which is thrown out to favor union. It is dusted plentifully over the wound covering it and the sutures completely; over this is placed a layer of plain sterilized absorbent gauze, and over this several layers of absorbent cotton, which is held in place by strips of rubber adhesive plaster (nearly encircling the body) and a many-tailed bandage.

This dressing may be left undisturbed until the sutures are removed. Then the same powder is again used and a similar cover dressing reapplied.

Since adopting this method of closing and dressing laparotomy wounds they have given no trouble whatever, but have invariably healed by first intention, and the eschar is firm and unyielding.

THE RADICAL CURE OF HERNIA BY OPERATION.

After briefly reporting thirty-six operations for the radical cure of hernia, Macartney (*The Lancet*, London, 1896, No. 8, vol. ii.) calls attention to two important points in technique. The first is "not to close the wound until all hæmorrhage has ceased, because the laxity of the tissues is such as to encourage reactionary bleeding when the wound is closed up and the patient comfortably warm in bed"; and the other is that he always opens the sac of the hernia.

Regarding the former, those who have had the annoyance of consecutive bleeding after one of these operations, with distension of the wound, and have witnessed the delay in healing and the uncertainty of the final result in consequence, can testify to the necessity for the exercise of unusual care to avoid this unfortunate accident.

The latter is a precaution that will, in rare instances, lead to the detection of either omentum or intestine in what appeared to be an empty sac, as is illustrated by two of Dr. Macartney's cases.

THERAPEUTICS

IN CHARGE OF

GRAHAM CHAMBERS, B.A., M.B. Tor.,

Professor of Analytical Chemistry and Toxicology, Ontario College of Pharmacy; Lecturer
in Organic Chemistry and Toxicology, Woman's Medical College;

AND

WILLIAM LEHMANN, M.B. Tor.,

Physician to the Home for Incurables and House of Providence.

EUCAINE HYDROCHLORATE.

Professor O. Liebreich, in the *Therapeutische Monatshefte* of June, 1896, referring to investigations on Eucaine, says it is a perfect substitute for cocaine, which does not affect the heart, is permanent in solution, and is less expensive.

The clinical trials so far made correspond in their results with those obtained by animal experimentation. Eucaine hydrochlorate in 2 per cent. solution has been used in the Ophthalmic Clinic of the Berlin University in varied affections of the eye, and has been found to be in no way inferior to cocaine as regards the setting in, duration, and intensity of the anæsthesia. It begins after two or three minutes, and lasts, on an average, from ten to fifteen minutes.

It differs from cocaine, however, in the absence of ischæmia. As in animals, it causes in the human eye a slight hyperæmia, whilst the pupil and accommodation remain uninfluenced. Eucaine is, therefore, preferable to cocaine in ophthalmologic practice in all cases where a local anæsthesia alone is wanted. Where an ischæmia action is also wanted, as in the inflamed eye, cocaine should be employed.

Reichert has noted the anæsthetic effects of eucaine in affections of the nose and throat. For the anæsthetization of the muscosæ Schleich believes that it should be substituted for cocaine in all cases. Used by the infiltration method it causes complete anæsthesia, but the infiltration itself is not so absolutely painless as that of cocaine.

The dosage and concentration should be about the same as that of cocaine. Kiesel indeed claims that as much as two grams (30 grains) of eucaine can be injected without deleterious effects. Judging by the

results on animals, it seems to be less poisonous than cocaine; but the difference is not a very great one. We cannot consider eucaine entirely harmless; and for the present, at least, should not exceed the dosage proper for cocaine without especial reasons.

One important advantage of eucaine remains to be mentioned, and that is that its solutions are much more stable than those of cocaine. They are also not decomposed by boiling, and can, therefore, be sterilized by heat.

In conclusion, Liebreich gives the following as the principal reactions of the hydrochlorate of eucaine:

(1) Caustic and carbonated alkalies and ammonia cause the precipitation of the eucaine base from a watery solution of the hydrochlorate as a glutinous, coagulating sediment. Cocaine hydrochlorate shows the same reaction.

(2) Heating solutions of eucaine hydrochlorate with a little chloride of iron causes a temporary yellow and orange discoloration; a similar reaction occurs with the hydrochlorate of cocaine.

(3) If to 5 c.cm. ($1\frac{1}{4}$ drachms) of a 1 per cent. solution of hydrochlorate of eucaine there be added three drops of a 5 per cent. chromic acid solution, it causes the immediate appearance of a beautiful, crystalline, lemon-yellow precipitate. No precipitate occurs under the same condition with cocaine hydrochlorate.

(4) When 5 c.cm. ($1\frac{1}{4}$ drachms) of a 1 per cent. solution of hydrochlorate of eucaine is decomposed by the addition of 3 c.cm. (45 minims) of a 10 per cent. iodide of potash solution, it causes a milky discoloration. On standing for a short time, the entire solution coagulates into a thin crystalline mush, with the separation of handsome colorless scales of iodide of eucaine. Under similar conditions, solutions of cocaine hydrochlorate remain perfectly clear.

Local action. A 2 to 5 per cent. solution of eucaine instilled into the eye of an animal, as a dog or rabbit, caused complete local anæsthesia in from one to three minutes. It began in the cornea, and spread from thence to the conjunctiva, and lasted on an average from ten to twenty minutes. It was readily prolonged by repeating the dose. The pupil was not dilated, and reacted well to light. Injected under the skin eucaine caused complete anæsthesia of the part so that the reflex could not be evoked even with a needle. A similar complete local anæsthesia of the mucosæ was effected when a eucaine solution was painted over it.

The general action of the drug, both in cold and warm blooded animals, consisted in a marked excitation of the entire central nervous system, followed by paralysis, in toxic doses going on to death. Even 0.002 gram ($\frac{1}{33}$ grain) caused irritability, heightened reflexes, inco-ordination,

and finally general paralysis in the animals experimented with. Small doses administered to mice and rabbits caused increased reflex excitability, and increased but weakened respiratory movements. Medium doses of 0.02 to 0.03 gram ($\frac{1}{3}$ to $\frac{1}{2}$ grain) per kilogram (35 ounces) of body weight of rabbits caused repeated tonic and clonic convulsions. The animals lay senseless on their sides, with dyspnoea, opisthotonos, and finally paresis of the posterior limbs. These phenomena were most marked when large toxic doses of 0.10 to 0.15 gram ($1\frac{1}{2}$ to $2\frac{1}{4}$ grains) per kilogram (35 ounces) were administered; the convulsions returned continuously, and affected all the muscles of the body. The animals finally died when the paralysis reached the respiratory muscles.

When the dose was not a fatal one, the convulsions gradually ceased, the increased reflex excitability disappeared, and the paresis of the hind limbs slowly improved.

The effect of eucaïne on the central nervous system is therefore at first excitant, and later, in toxic doses, paralyzing. The paralysis is a central one, for if the sciatic nerve of a frog poisoned with eucaïne is exposed, and its peripheral end irritated with the induced current, the limb reacts in a normal manner.

As regards its action on the heart and the blood vessels, the subcutaneous and intravenous injection of small and medium doses slows it on the average from twenty to thirty beats per minute, but without otherwise modifying the beats, or increasing the blood pressure. This effect on the pulse is caused by the excitation of the central vagus; for section of the vagi causes an immediate increase of the pulse to the normal and above it, together with an increase of the blood pressure. Death occurs from paralysis of the respiratory centres, for the heart continues to beat for some time thereafter.

In all these points eucaïne is similar physiologically to cocaine. Yet there are some important differences, which must not be forgotten. In the first place eucaïne is *less poisonous than cocaine*. Whilst the animals treated with eucaïne survived, other animals injected with the same doses of cocaine died. The pulse with eucaïne is always decreased in frequency; with cocaine there is a primary acceleration. As regards their local action, the commencement of the anæsthesia, its duration and intensity, there is no difference between the two substances. But eucaïne causes no ischæmia; on the contrary, vascular dilatation occurs. A further difference is that the pupils are not affected; mydriasis does not occur, and the reaction to light remains normal.

Another difference of great importance is that eucaïne does not, like cocaine, induce mydriasis and paralysis of accommodation. The pupil is not dilated at all, and reacts well to light; the accommodation remains normal.

This is a property of the greatest importance in practical ophthalmology and favors the employment of eucaïne in cases in which a production of ischæmia with the anæsthesia is not required. In violent inflammatory conditions of the eye, eucaïne also promptly produces anæsthesia, but the ischæmic action fails ; and consequently for such cases cocaine will have the preference. Both drugs diminish the intra-ocular pressure about equally.

Its last advantage is that the eucaïne solutions are permanent and do not, like those of cocaine, decompose when kept. Cocaine solutions are decomposed when they are boiled for the purpose of sterilization, thereby losing their property as a local anæsthetic ; and the decomposition products have an irritant effect if such a solution is employed. Solutions of eucaïne on the other hand do not suffer decomposition, even when boiled for a long time.

Eucaïne has thus been shown by experimentation on animals and on the human subject to have very marked local anæsthetic properties which render it worthy of being placed by the side of cocaine in ophthalmological practice. It has the advantage over the latter in that it has no effect on the pupil or on accommodation ; that it is less poisonous than is cocaine ; and that, whilst the absence of ischæmic effects render it less suitable in certain cases, in others its slight hyperæmic action will be distinctly advantageous.

GENITO-URINARY AND RECTAL SURGERY

IN CHARGE OF

EDMUND E. KING, M.D. Tor., L.R.C.P. Lond.,

Surgeon to St. Michael's Hospital ; Physician to House of Providence and Home for Incurables ; Pathologist, Toronto General Hospital.

CONCERNING THE SO-CALLED HYPERTROPHY OF THE PROSTATE GLAND AND THE ANATOMICAL CAUSE OF THE SENILE INSUFFICIENCY OF THE BLADDER.

In a preliminary report on this subject before the Eighth Polish Surgical Congress in Krakow, Dr. Stanislaw Ciechanowski presented the following conclusions (*Centralb. f. Chir.*, 1896, No. 32):

I. (1) The arterio-sclerosis must not be considered as the cause of the changes in the kidneys, bladder, and prostate, as has been claimed by the Guyon school.

(2) The anatomical explanation of the insufficiency of the bladder, in all cases in which it is connected clinically with the so-called prostatism, is a quantitative change in the relation of the bladder muscles to the connective tissue.

(3) This quantitative change seems to be a regular phenomenon in advanced years, and becomes more marked the older the patient grows. It reaches a higher degree when, in addition to the condition mentioned, there is a mechanical obstacle to the escape of the urine. The symptoms are most marked when, besides these two conditions, chronic inflammation of the bladder sets in. As a rule, all these factors play a part. Exceptionally only one, *e.g.*, the senile atrophy of the bladder muscles, which can be demonstrated anatomically, may give rise to complaints of urinary troubles. The influence of these damaging conditions can be in some measure compensated for by the ability of the bladder muscles to hypertrophy. The muscular hypertrophy of the bladder develops whenever there is a mechanical obstruction which interferes with its ready evacuation. An exception to this rule is rare.

The final effect of these factors depends upon their sum. In coming to a conclusion in any case they must be all taken into consideration.

II. The so-called hypertrophy of the prostate seems to have very little in common with homoplastic new formations. On the contrary, the hypertrophy in the condition known as prostatism must be looked upon as a primary factor, and almost always depends upon chronic inflammatory changes, which take place either in the glandular part or in the stroma, or, in most cases, in both.

The result of these inflammatory changes, which by no means terminate always in the hypertrophy of the entire organ, and which resemble greatly chronic post-gonorrhœa inflammation of the prostate, seems to depend on their extent, but, above all, upon their localization.

The more central the inflammatory changes of the stroma, and the nearer the periphery the changes occur in the glands, the greater the probability that the end-result will be hypertrophy.

The opposite of the above-mentioned changes may have no effect on the size of the prostate, but it is not impossible that prostatic atrophy would occur in certain cases.

Generally speaking, the author asserts that in the majority of aged individuals whom he has examined there was in the prostate evidence of a very prolonged inflammation demonstrable anatomically, which, although not always, yet in some predisposed conditions caused an enlargement of the glands, improperly termed hypertrophy.

The so-called prostatic hypertrophy seems, as a rule, to depend on these chronic inflammatory changes, even if it does not represent the only termination.

URETHRAL NEUROSES.

Dr. F. C. Valeline (*The Chemical Recorder*, October, 1896), in a paper on urethral neuroses, sums up as follows :

As conclusions I beg to offer the following :

(1) The urethral neuroses (urethrospasm, hyperæsthesia, neuralgia) are not diseases, but symptoms.

(2) They should be treated as diseases alone only when their cause cannot be ascertained.

(3) No urethral neuroses should be so diagnosed until the urethroscope has revealed a healthy urethra.

(4) Sedatives, hypnotics, and local anæsthetics give only temporary relief and exercise no permanent effect.

(5) Local treatment should be continued with ever-lengthening intervals long after all symptoms of the neuroses have disappeared.

(6) No patient with unexplained pain in the urethra or difficulty in urination should be condemned as a hypochondriac or malingerer.

(7) All such cases, whether their pathology is discovered or not, can be cured, or so materially relieved, as to make their existence endurable.

THE EMPLOYMENT OF ARGONIN IN THE TREATMENT OF GONORRHOEA.

Bender (*Jour. de Méd. de Paris*, May 10, 1896) gives the following as the result of his observations in the treatment of gonorrhœa by this drug :

Argonin dissolves in ten times its weight in water ; four fluid drachms of this solution contain an amount of silver equivalent to fifteen grains of the nitrate. This solution does not form a precipitate in the presence of chloride of sodium or the albuminoids.

Jadossohn's treatment of gonorrhœa consists in the injection, three or four times a day, of about three fluid drachms of this solution, gradually increasing the strength up to 7.5 per cent. The solution should be retained in the urethra, if possible, for ten minutes. The injections are not absolutely painless, and have no astringent effect. Fifty-four cases treated in this manner recovered in a maximum of six weeks. In thirty acute cases the gonococci disappeared in one week in twelve cases, in two weeks in fourteen cases, in three weeks, and less, in four cases. In twenty-four chronic cases the gonococci disappeared at the end of one week in seven cases, at the end of two weeks in ten cases, and in three weeks in seven cases. After the gonococci disappeared ichthyol was used. Failure occurred in two cases only.

Editorials.

MEDICAL FACULTY OF UNIVERSITY OF TORONTO— ANNUAL BANQUET.

THE tenth annual dinner of the Medical Faculty of the University of Toronto was held at the Rossin House, Toronto, Wednesday evening, December 2nd, and was quite successful in all respects. One of the special features of the evening was the superabundant feeling of loyalty which was shown by many of the speakers in their references to the long reign of Her Majesty the Queen, and the great work which has been accomplished during the Victorian age. No announcements of great importance as to the Medical Faculty were made, but general satisfaction was in evidence with reference to its prosperity, and the kindest wishes for its increased success in the future were freely expressed. To be made president of an annual dinner is probably the highest honor in the gift of the students. This year the choice fell on Mr. A. T. McNamara, who made an excellent presiding officer. We publish his address in this issue of *THE CANADIAN PRACTITIONER*. The speeches of the student speakers were generally good, being short, crisp, and bright. The management was admirable, all the proceedings being carried out without a hitch. The menu card contained many illustrations and diagrams which were unique and interesting. Some great artist is evidently going to make his mark in the world in the near future.

TORONTO BRANCH OF THE BRITISH MEDICAL ASSOCIATION.

AT a meeting of the members of the British Medical Association resident in Toronto it was decided to revive the Toronto branch formed here some three years ago, but which subsequently lapsed. In view of the approaching meeting of the British Medical Association in Montreal next year, it was thought that the formation of a branch in

Toronto would greatly assist the Montreal branch in making the association meeting a success. In order to take part in the Montreal meeting it will be necessary to become a member of the British Medical Association. The existence of a branch organization here will greatly facilitate the election of members. Without the branch organization, membership could only be obtained by making application direct to the general secretary, London, England, which would require, at least, a fortnight's time.

The president and council of the Toronto branch would like to secure the co-operation of those who are already members of the British Medical Association in their endeavors to extend the membership in Toronto and the vicinity, and to assure a good attendance at next year's meeting in Montreal. Gentlemen who are already members of the British Medical Association, and who are desirous of being enrolled in the Toronto branch, are requested to send in their names to the branch secretary. Applications for membership in the association will be received by the secretary, and forms furnished. These forms are to be returned to the branch secretary, when the candidates' election will be proceeded with. The annual fee is one guinea, and the member receives the *British Medical Journal* weekly.

The officers of the Toronto branch are: President, I. H. Cameron, M.B., Toronto; vice-president, W. J. Wilson, M.D., Toronto; treasurer, H. T. Machell, M.D., Toronto; secretary, W. B. Thistle, M.D., 160 McCaul street, Toronto. Council: J. E. Graham, M.D.; Charles Sheard, M.D.; Alex. MacPhedran, M.B.; Allen Baines, M.D.; John Caven, M.D.

THE MONTREAL MEETING OF THE BRITISH MEDICAL ASSOCIATION IN 1897.

WE learn from the local secretaries for this meeting that the committee is still assiduously engaged in making the necessary arrangements. We are asked to emphasize the fact that those who intend to be present should make their arrangements for rooms at an early date, because Montreal, which generally has a large number of visitors at that season of the year, will be heavily taxed in her attempt to care for the extra influx which this meeting will ensure.

It has been determined that there shall be, at least, twelve sections, viz., Medicine, Surgery, Obstetric Medicine and Gynæcology, State Medicine, Pharmacology and Therapeutics, Pathology and Bacteriology, Anatomy and Physiology, Psychology, Diseases of Children, Ophthalmology, Laryngology and Otology, Orthopædics and Dermatology. These

will meet in the buildings of McGill University and the surrounding theological colleges.

In order to guard against the unsatisfactory crowding and confusion resulting from a small reception room, it has been determined to erect a temporary building of large size, about 100 by 50 feet, in the grounds of McGill, which will serve not only for the issuing of tickets and daily programmes, for post, telegram, and telephone offices, but also, during the meeting, will contain the secretaries' and enquiry offices. The general meetings and addresses will be held in the Windsor Hall, which is capable of seating 3,000, and is in every way adapted for this purpose. The museum (instruments, therapeutical preparations, etc.) will, in all probability, be housed in the Victoria Rink, close to the Windsor Hall, between it and McGill. It is hoped this museum will be one of the features of the meeting, and every endeavor will be used to make this attractive to the profession and to the public.

BEATTY vs. CULLINGWORTH.

THIS trial has created great interest among the profession of Great Britain. Dr. Cullingworth, the senior obstetric physician of St. Thomas' Hospital, operated on a hospital nurse, Miss Beatty, in 1892, for disease in the pelvis. The diagnosis was disease of the right ovary, with doubt as to condition of the left ovary. The patient was engaged to be married, and objected to the removal of both ovaries. Dr. Cullingworth expressed the opinion that the left ovary might probably be healthy, but stated that he was not certain. During a conversation after the doctor had given his opinion she said (*Times* report as published in the *British Medical Journal*) she could not bring her mind to have the operation as to the second ovary. He replied that he could give no guarantee that there was only one side diseased. He told her it was entirely a matter for her, and she must think the matter over and decide. He also said he could not be absolutely sure as to the condition on the left side until the operation was proceeding, and that he could not bind himself by any promise not to remove the second ovary. He said in giving his evidence in court he wished to be absolutely unfettered.

Miss Beatty at first decided that she would have no operation, but afterwards changed her mind, and sent word to that effect. Dr. Cullingworth showed a great deal of kindness and consideration towards her, put off his holiday for a week to perform the operation, and charged no fee. When the plaintiff came into the room for the operation, she said: "Dr. Cullingworth, if you find both ovaries diseased, you must remove neither."

To this he replied : " You really must leave that to me, nurse. I know your wishes ; you may be sure I shall not remove anything that I can help." She made no reply, got on to the operating table, and took the anæsthetic. Dr. Cullingworth considered that this apparent acceptance of the situation, in connection with former conversations, was equivalent to a tacit consent. He said in court that if she had then raised any objection to his statement he would not have proceeded with the operation.

Dr. Cullingworth found the right ovary seriously diseased, and removed it. He then proceeded to examine the left ovary, and found it also diseased. He then said to his assistant that it was a serious complication, and in view of the patient's expressed wish he would have to think for a moment what course to pursue. Eventually he decided to endeavor to remove the diseased portion of the ovary by dissection, unless it could be done by puncture. After making incision, he found the disease was of such a nature as to make it impossible to puncture it and leave it. He then attempted to remove the cyst, leaving a portion of the ovary, but finding that impossible he removed the ovary. Miss Beatty was angry when she was told what he had done, and entered suit for damages. After a time she withdrew the claim. Again, this year, she commenced proceedings, and the case was tried in November, and resulted in a verdict in favor of Dr. Cullingworth. The verdict was just and right ; but will be only a poor compensation to the plaintiff for the worry and expense necessarily associated with the trial. The moral and the lesson to be learned are too obvious to require comment.

ANNUAL CONVOCATION EXERCISES OF THE TRAINING SCHOOL FOR NURSES, TORONTO GENERAL HOSPITAL.

WE believe we can say, without fear of contradiction on the part of anyone who knows whereof he speaks, that the Training School for Nurses in the Toronto General Hospital is second to no school of the kind in the world. We are pleased to notice that this is becoming appreciated by the people of Toronto, as shown by the fact that increasing numbers of her citizens attend the annual convocation exercises from year to year ; and also by hospital authorities and others in districts outside of Toronto, as evidenced by the important positions of trust occupied by graduates in various parts of the continent.

A large and representative audience gathered in the amphitheatre of the hospital on Friday evening, November 30, to witness the distribution of certificates and badges to the graduating class for 1896. The chair was

occupied by Mr. Walter S. Lee, President of the Board. Prayer was offered by Rev. Dr. Milligan, after which Rev. Louis Jordan delivered a short address.

Miss Snively, the lady superintendent, who has done so much to place the school in its present proud position, then read the annual report, which contained the following items of interest. The course of training had been extended to three years. The object of this change was to improve the character of the nursing in the hospital, and also make the nurses more efficient, intelligent, and self-reliant ; and, as far as possible, develop in them executive and administrative abilities. There had been 590 applicants for admission during the year, of which twenty-eight were accepted and enrolled as pupils. There are now sixty-two nurses in the school, and the graduating class numbered twenty-one. A number of graduates of the school received appointments during the year in the Toronto General Hospital, and in other hospitals in Ontario, Quebec, and various parts of the United States.

After the presentation of the certificates and badges, the guests, numbering about 500, were invited to a reception in the nurses' home, where refreshments were distributed by twelve nurses, wearing badges of pink ribbon. The appearance of the nurses, dressed in their pretty blue and white uniforms, was very pleasing ; and the very tasty decorations in the amphitheatre and the nurses' home added much to the various charms of the evening. There appeared to be a general consensus of opinion among the guests that this was the most pleasant entertainment ever given in the Toronto General Hospital.

SIXTIETH YEAR OF THE QUEEN'S REIGN.

WE learn from the *British Medical Journal* that a committee has been chosen, with the Duke of Westminster as chairman, to take steps to celebrate the completion of the sixtieth year of Her Majesty's reign by raising a fund to increase the endowment in perpetuity of "Queen Victoria's Jubilee Institute for Nurses." This institute was founded in the Jubilee year by the Queen, who gave to it the sum of three hundred hundred and fifty thousand dollars. Its nurses have already done good work in various parts of the United Kingdom among the poorest classes. The *British Medical Journal* says : "To-day there are over six hundred working under the centres established in England, Scotland, Ireland, and Wales. It is, therefore, no new experiment which has to be tried. It is pointed out that the direct benefit to the suffering poor

of having skilled nursing in sickness in their own homes cannot be overstated, apart from the indirect, but equally certain, good resulting from the constant visits of educated and devoted women to houses where order and cleanliness are sometimes unknown, and where, from ignorance of the simplest sanitary precautions, illnesses are often prolonged, always made more serious, lives endangered, and suffering greatly increased."

The Queen received at Windsor Castle nearly four hundred of these nurses, December 2. The visiting nurses were conveyed by a special railway train to Windsor, and entertained at luncheon on the lawn tennis grounds adjoining the Castle. When Her Majesty, accompanied by Princess Christian, drove to the grounds, the nurses, clad in their regular nursing costumes, were drawn up in a double line forming three sides of a hollow square. All the nurses received the Queen with a low curtesy. After a number were formally presented, Her Majesty ordered her carriage to be driven into the centre of the square, and briefly addressed the company, saying: "I am very much pleased to see my nurses here to-day, and to hear of the good work that they are doing; and I am sure they will continue to do it." When she finished, the nurses sang one verse of the National Anthem, and again curtesied. By special desire of Her Majesty they then filed in pairs before the Queen. On their return to London the nurses were entertained at Grosvenor House by the Duke and Duchess of Westminster with a reception, at which Princess Louise was present.

Correspondence.

"SO-CALLED OPTICIANS."

To the Editor of THE CANADIAN PRACTITIONER :

DEAR SIR,—According to an item in the daily press a number of jewelers calling themselves opticians met together for the purpose of organizing a society, having for one of its objects the formation of some kind of a school of refraction. There has lately sprung into existence a class of men which has been called "Doctors of Refraction" by the diploma given them. This diploma is the veriest farce. The origin and support of this movement are the optical companies, thereby meaning those which make and sell spectacles. By a scheme such as that outlined in the newspaper report they hope further to boom their wares. These "Doctors of Refraction" are exceedingly ignorant, having but a mere pretence of training. They do a great deal of harm by persuading people to wear glasses, whose eyes are otherwise diseased. This has been frequently exemplified. Moreover, their knowledge of refraction is so slight that it is impossible for them rightly to prescribe glasses. The regular optician does not recognize these jewelers as opticians. The regular optician does not base his claims to that name upon the giving of glasses; for this he knows to be but a recent addition, and one in which he does the best he can, confessing that he understands very little of it. A contrast you will thus see to the blatant and ignorant "Doctor of Refraction." Many of the public are asking why these men are allowed to sail under false colors without any intervention on the part of the law.

G.H.B.

THE MOSCOW INTERNATIONAL MEDICAL CONGRESS.

To the Editor of THE CANADIAN PRACTITIONER :

SIR,—*Apropos* of an editorial in this week's *Medical Record*, entitled "Politics and Medicine in Russia," I desire to ask for some space in your esteemed and most widely circulated journal in order to express my opinion upon the subject. My, at first, perhaps, somewhat startling opin-

ion and advice is that the members of the medical profession throughout the world should, collectively or individually, resolve to have nothing to do with that congress, to ignore it completely. This opinion is shared by quite a number of my colleagues, and the reasons upon which it is based are as follows: A country in which the popular and higher education is in the palm of the hand of Constantin Pobyednoszeff, a narrow-minded, marble-hearted bigot, as cruel as Torquemada, with the only difference that he does not burn his victims at the *auto-da-fé*—this being out of fashion now—but sends them instead to pine their young lives away in the Siberian mines and prisons; a country in which the students are watched and spied upon like penitentiary convicts; a country in which the most brilliant university professors are treated like lackeys, discharged and exiled at the caprice of the above-named autocrat; a country in which the possession or reading of the Declaration of Independence, or of the constitution of the United States, is considered a heinous crime, and is punished by from three to five years' solitary confinement in a prison, or subterranean dungeon (this is fact, not fancy); a country in which citizens of the highest ability and integrity are debarred from university education, from certain professions and positions, on account of professing a certain faith; a country which in the last quinquennium of the nineteenth century establishes a school of medicine for women, and inserts a clause rigidly excluding women of Jewish faith from entering its portals—such a country, I say, should not be honored by the holding of an international medical congress in one of its capitals. And in this opinion I do not stand alone. When in Berlin I spoke to many physicians upon the subject, and several of them who participated in previous congresses expressed their resolution to have nothing to do with the Moscow congress, neither as readers of papers nor as visitors. And if the entire medical profession throughout the world decided to do likewise, the rebuke would have a wholesome effect upon the pitiless northern despot.

The case of Erismann is not by any means unique. Many a Russian professor has been forced to resign or has been exiled, only to be received with open arms by the universities of Switzerland, France, and Germany.

WILLIAM J. ROBINSON, M.D.

The above letter is taken from the *Medical Record*, and is a very fair criticism. Dr. Erismann, the liberal-minded general secretary of the congress, was removed from his secretaryship and deprived of his professional chair for his liberal ideas of an international congress. It is more than probable that he is now on his way to Siberia.

Book Reviews.

THE PHYSICIAN'S VISITING LIST FOR 1897 (Lindsay and Blakiston). Forty-sixth year of its publication. Philadelphia: P. Blakiston, Son & Co.

This is one of the most neat and compact of the many visiting lists published. Among the contents we find a calendar, 1897-8; the metric or French decimal system of weights and measures (very clearly explained); dose table; directions for treating asphyxia and apnœa; comparison of thermometers; a new table for calculating the period of utero-gestation. Then follow leaves for visiting list, memoranda, addresses of patients, addresses of nurses, accounts asked for, memoranda of wants, engagements, records, cash accounts, etc. The arrangement is, in all respects, good and simple.

FOOD IN HEALTH AND DISEASE. By I. Burney Yeo, M.D., F.R.C.P., Professor of Therapeutics in King's College, London, etc. New and revised edition. Lea Brothers & Co., Philadelphia and New York.

The first edition of this admirable work appeared in 1889, and was highly prized by a large number of physicians in Great Britain and North America. In the present edition we find many changes and additions which bring the book well "up to date." It contains many practical hints, based on extended observation and laboratory work. We know of no work on this subject that so thoroughly combines the practical and scientific aspects of the subject-matter. We have no hesitation in recommending the book as one that is likely to be exceedingly useful to all classes of medical practitioners. We think every physician should have it.

A MANUAL OF ANATOMY. By Irving S. Haynes, Ph.B., M.D., Adjunct Professor and Demonstrator of Anatomy in the Medical Department of the New York University, etc. With 134 half-tone illustrations and 42 diagrams. Philadelphia: W. B. Saunders, 1896.

This volume, which is the latest of the "New Aid" series of manuals, is, we think, well worthy of perusal, especially by students who are actually working in the dissecting room. It will also be useful for the practitioner as a book of reference. Considerable prominence has been given to surface anatomy, both in the illustrations and in the text. This is a very good feature of the manual, as it gives the student a good foundation for his hospital work when he comes to take up the subject of physical diagnosis. As this manual is intended as a dissector's guide, it purposely omits descriptions of bones and joints, for which the student will have to consult his Gray or Quain.

As a sample of the printer's work this volume holds its own with others of the series.

A MANUAL OF OBSTETRICS. By W. A. Newman Dorland, A.M., M.D. Philadelphia : W. B. Saunders, 917 Walnut street.

Dr. Dorland's recent work upon obstetrics is a fair, complete, and up-to-date presentation of that science and art. While there is no wasted space in the book, abundant reference is made to various theories held and methods of treatment adopted at the present time. That which is of peculiar interest to the practitioner is the mention of the names of teachers and writers in connection with certain theories and practice, and many references are made to their more comprehensive publications.

Perhaps the chief charm of the book is the systematic arrangement of the subjects and the completeness of directions for treatment in so small a space. The scientific classification of puerperal sepsis will enable many to arrive at a more definite understanding of this all-important subject. Perhaps every obstetrician has his own theory regarding the etiology of eclampsia, and so we must forgive the author for having omitted ours. We congratulate him upon having presented the whole subject so comprehensively and interestingly. No safer or better guide could be put into the hands of students and practitioners.

Books received :

A TEXT-BOOK OF MATERIA MEDICA, THERAPEUTICS, AND PHARMACOLOGY.

By George F. Butler, Ph.G., M.D., Professor of Materia Medica and of Clinical Medicine in the College of Physicians and Surgeons, Chicago ; Professor of Materia Medica and Therapeutics, Northwestern University, Woman's Medical School, etc. 8vo, 858 pages. Illustrated. Prices : Cloth, \$4 net ; sheep or half-morocco, \$5 net.

Medical Items.

DR. GEORGE MORE (Tor., '96) has commenced practice in Hawkesville.

DR. E. S. HICKS, of Deseronto, has been appointed an Associate Coroner for the County of Hastings.

DR. THOMAS H. MIDDLEBRO (Tor., '92), of Owen Sound, has been appointed jail surgeon for the county of Grey, in the place of Dr. Henry Manley, deceased.

DR. THOMAS MORE MADDEN, the well-known obstetrician and gynaecologist of Dublin, has received the degree of Master of Obstetrics (M.A.O.), *Honoris Causa*, from the Royal University of Ireland.

THE AMERICAN MEDICAL ASSOCIATION.—The next meeting of the American Medical Association, which is to be held in Philadelphia in June, 1897, will be the semi-centennial gathering of that society.

HE—I am really surprised at Dr. White. After being our family doctor for years, and treating me for all sorts of things, and to think of all the money we've paid him, too! She—What has he done? He—He wouldn't pass me for the life insurance company!

AT the annual meeting of the Clinical Society of Maryland the following officers were elected to serve for the ensuing year: President, Dr. S. K. Merrick; vice-president, Dr. W. D. Booker; recording secretary, Dr. H. O. Reik; corresponding secretary, Dr. W. G. Townsend; treasurer, Dr. W. J. Todd; member finance committee, Dr. J. M. Hundley. Executive committee: Dr. J. W. Lord, chairman; Dr. W. B. Canfield, Dr. T. P. McCormick.

THE CHARLOTTE MEDICAL JOURNAL.—The *Charlotte Medical Journal* published in Charlotte, North Carolina, has for some time been recognized as one of the most progressive medical journals in the United States. Several changes have recently been made—especially as to increase of reading matter—which are likely to add to its popularity and usefulness. We desire to congratulate the editors, Drs. Register and Montgomery, on the success which has attended their efforts in producing a first-class medical journal.

NO FULL DRESS UNIFORM IN U.S. ARMY.—It has been decided by the military authorities of the U.S. Army, including Surgeon-General Sternberg, at whose suggestion the action was taken, that there shall be no full dress uniform for the members of the hospital corps. The pomp and pride and panoply of war, the nodding plumes of grand parades and glittering military

pageants, are not for them. Although they may be *in* these parades and pageants hereafter, they will not be *of* them. When they are there they are there not for show, but for business—in their fatigue suits, with their hand litters handy and their hospita! corps pouches ready to furnish whatever is needful for the emergency.

ALVARENGA PRIZE OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA.—The College of Physicians of Philadelphia announces that the next award of the Alvarenga prize, being the income for one year of the bequest of the late Senor Alvarenga, and amounting to about \$180, will be made on July 14, 1897, provided that an essay deemed by the committee of award to be worthy of the prize shall have been offered. Essays intended for competition may be upon any subject in medicine, but cannot have been published, and must be received by the secretary of the college on or before May 1, 1897. Each essay must be sent without signature, but must be plainly marked with a motto and be accompanied by a sealed envelope having on its outside the motto of the paper, and within the name and address of the author. It is a condition of competition that the successful essay, or a copy of it, shall remain in possession of the college; other essays will be returned upon application within three months after the award. The Alvarenga prize for 1896 was not awarded.

DOCTORS AND LAWYERS.—In the speech of Mr. Justice Vaughan Williams, at the annual presentation of prizes to the students of the Charing Cross Hospital Medical School, he declared that there was a considerable affinity between the professions of law and medicine. Both required the same qualities, both were the recipients of confidences from their clients, and he would add that the clients rarely found their confidences misplaced. He, as a lawyer, often came into contact with doctors in the law courts, where the most important issues were often determined solely on the evidence of medical experts, who were, for the most part, safe guides in the administration of justice. One point, however, in which the professions differed was that the medical profession was essentially progressive, while the legal profession was, in a sense, stationary. If the doctors of the last century came to life again, they would know comparatively nothing of contemporary medical science, but if the judges of former times were installed in the law courts to-morrow they would try the cases quite as well, if not better, than the judges of to-day.—*British Medical Journal*.

HERBERT ALEXANDER BRUCE, M.B. TOR., F.R.C.S. ENG.—We have to announce, with much pleasure, that Dr. H. A. Bruce has passed the final examination for the Fellowship of the Royal College of Surgeons of England. Dr. Bruce's career in medicine up to the present time has shown remarkable success. He was a student of the Medical Faculty of the University of Toronto from 1888 to 1892, and at his final examination was awarded the gold medal, the highest prize in the gift of the Faculty. He was appointed one of the resident assistants in the Toronto General Hospital for the year 1892-3, and his conduct in that capacity was highly satisfactory to all connected with that institution. In 1893 he was appointed surgeon to one of the C.P.R. steamships, on

which he remained for nearly two years. Early in 1895 he went to England, where he engaged in post-graduate work. The simple announcement that he is now F.R.C.S. Eng. shows that he has worked to some purpose. To those who respected Dr. Bruce for his ability, and loved him for his rare goodness and kindness of heart, the news is very welcome. THE CANADIAN PRACTITIONER offers very cordial congratulations.

DR. MORE MADDEN.—Dr. More Madden, upon whom the honorary degree of M.A.O. was conferred recently, for many years has been well known as an obstetric and gynecological practitioner, teacher, and writer, and has received many honors in these branches of medical science. Thus he has filled the positions of President of the Obstetric Section of the British Medical Association and of the Irish Academy of Medicine, and was Hon. President of the International Congress of Obstetricians at Brussels. From the Medical College of Galveston he got the degree of M.D. *Honoris Causa*. He has held a number of offices in his special branch, being Obstetric Physician and Gynecologist to the Mater Misericordiae Hospital, Consulting Physician to the Children's Hospital, and Consultant and ex-Master of the National Lying-in Hospital. Amongst his writings are: "Clinical Gynecology: A Handbook of Diseases of Women"; "The Health Resorts of Europe and Africa." He has also contributed very extensively to periodical medical literature and to works such as "Quain's Dictionary of Medicine," and has been editor of "The Dublin Practice of Midwifery," "Memoirs of the late Dr. R. R. Madden," "A Handbook of Obstetrics and Gynecological Nursing," etc.

LIST of chairmen and secretaries of the various sub-committees for the Montreal meeting of the British Medical Association, 1897:

Reception—Chairman, Sir Wm. Hingston, M.D.; Secretary, Dr. B. F. Ruttan.

Finance—Chairman, Dr. E. P. Lachapelle; Secretary, Dr. F. G. Finley; Treasurer of the branch, Dr. J. Alex. Hutchison.

Excursion—Chairman, Dr. G. E. Armstrong; Secretary, Dr. H. S. Birkett.

General Purposes—Chairman, Dr. A. Proudfoot; Secretary, Dr. R. B. Devlin.

Museum—Chairman, Dr. J. Perrigo; Secretary, Dr. J. W. Stirling.

Printing and Publishing—Chairman, Dr. J. G. Adami; Secretary, Dr. J. A. Macphail.

Dinner and Luncheon—Chairman, Dr. James Bell; Secretary, Dr. F. A. L. Lockhart.

Soiree—Chairman, Dr. F. J. Shepherd; Secretary, Dr. G. G. Campbell.

Local Entertainment—Chairman, Dr. C. P. Girdwood; Secretary, Dr. K. Cameron.

A RATHER amusing story is told by a New York doctor concerning one of his patients, who was a pushing young barrister. This legal luminary was often accustomed to spend an evening with a client of his, a wealthy old lady, with whom he tried to keep in good favor. These evening seances always terminated with refreshments. On this particular evening our legal friend was not feeling in very good trim for much of a repast, but *volens volens* he must take something. The consequence was that as he was wending his way homewards, he began to be afraid that on the morrow he would be incapacitated, and unable to plead in an important suit on hand. He therefore thought he would consult his physician, which he accordingly did, and under his orders he took a very fair dose of zinci sulph. with the desired effect. Feeling rather depressed after it, he took a good-horn of brandy, and next day was at work all right. When sending his cheque to his physician for his services, he accompanied it with the following literary production :

“ No more cake, and no more candy,
No more zinc, and no more brandy.”

OBITUARY.

SIR BENJAMIN WARD RICHARDSON, BART., M.D., F.R.S.—This distinguished physician died at his home in London, November 21, 1896, aged 68 years. He was well known as an author, especially on subjects connected with hygiene.

THOMAS HERRING BURCHARD, M.D.—Dr. Burchard, of New York, died suddenly from cardiac disease, November 15, 1896, aged 48 years. He was well known by many Toronto physicians, and was married to a lady who lived in Toronto for some years. He was a good physician, a good teacher, a good writer, and, socially, a genial, lovable man.

RUSSELL HERBERT GOWLAND, M.B. TOR.—Dr. R. H. Gowland, a bright boy from Hamilton, commenced his studies in medicine in 1888. He was a student in the University of Toronto, and received the degree of M.B. from that institution in 1892. He commenced practice in Hamilton, but his health failed shortly after he went into harness. He suffered from disease of the kidneys, and went to Johns Hopkins Hospital, Baltimore, early in December. An operation was performed on him December 10, but he died on the following day. This sad termination of what promised to be a bright career is greatly deplored by all his friends.

ROWLAND JOHN HASTINGS, M.B.—Dr. R. J. Hastings, of Toronto, was one of our most promising young physicians. He took his medical course in the University, getting the degree of M.B. in 1894. Soon after completing his course he located in Toronto, 535 King street east, and his prospects appeared very bright. He was suddenly seized with illness on the last day of November, and died in four days. He first developed high temperature, together with a scarlatiniform eruption. Great prostration followed, and he sank continuously and rapidly. Although the scarlet rash was at first misleading, it is

probable that the cause of his condition was acute septicæmia. He died December 4, aged 34, and had been in practice exactly two years. He was a nephew of Drs. C. J. and A. O. Hastings, of Toronto. •

ROBERT JAMES WOOD, M.D., C.M., L.K. & Q. COLL. PHYS. IRELAND.—Dr. R. J. Wood, of Vancouver, died after a short illness of pneumonia, December 1, 1896, aged 32. He received his medical education in the Toronto School of Medicine, and received the degree of M.D. from Victoria University in 1886. In the same year he went to Great Britain and became a licentiate of the King's and Queen's College of Physicians, Ireland. He commenced practice in Streetsville in 1887, and remained there until 1894, when he went to the Pacific coast and located in Vancouver, B.C. A widow and one child survive. His sad death caused a great shock to his many friends, who were all fond of "Bob" Wood. Although he had been in British Columbia only two years he had already acquired a large lucrative practice, when death suddenly seized him in the midst of his well-earned and well-deserved prosperity.

DR. GEORGE HARLEY.—Dr. George Harley, F.R.S., aged sixty-seven years, died suddenly on Tuesday from rupture of a coronary artery. His remains are to be cremated this afternoon. I knew him for many years, a genial and cheerful companion whose intense interest in the scientific aspect of medicine never abated. You will remember his researches on the urine and on the liver, and important as these were he made many others of equal value. He was a very highly trained scientist. After graduation at Edinburgh he spent two years in Paris under Magendie and Claude Bernard. Then he took two years in Germany, working under Scherer, Kolliker, Virchow, and others. On returning he was appointed to the chair of histology and practical physiology at University College and physician to the hospital. Soon for his elaborate researches, among which those on the chemistry of respiration had great influence, he obtained the scientific blue ribbon, F.R.S. He naturally became a fellow of both the Edinburgh and London Colleges of Physicians. He had to fight against ill-health for a long time, and he did it with a courage deserving of admiration and sympathy. I remember his attack of glaucoma, from which, on account of the state of the other eye, extirpation was advised; but he retired to a darkened room for several months to try what rest would do and recovered sight in both eyes. He recorded a number of observations he made on his vision as he recovered. He was always ready to experiment on himself, and on more than one occasion he ran considerable risk from doing so. A careful, exact experimenter and fluent lecturer, his pupils had the greatest respect for his work, and many will mourn the loss of an ardent devotee of scientific medicine and a cheerful, skilful, and learned physician.—*London Correspondent of Medical Record.*