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THE DIAGNOSIS OF TYPHOID FEVER.*

BY J. E. GRAHAM, M.D.,
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There is no subject in the practice of medicine of greater importance than the study of typhoid fever. The disease is so prevalent in all parts of our country, occurring with almost equal frequency in crowded cities and in country districts, in the cottages of the poor and in the palaces of the rich, that none of us can afford to lose any opportunity whereby we may increase our knowledge of its various phases. Moreover, there is no disease the study of which more amply repays the physician, because in none other is the management of greater importance to the welfare of the patient.

Many affections, such as tuberculosis and carcinoma, are of great importance on account of their frequency, and of the mortality which attends them. When, however, we meet with advanced cases of these diseases, the fatal result is so inevitable that the management is simply of a palliative character.

In typhoid fever, on the other hand, no case, except one absolutely

*Read at the Ontario Medical Association.

moribund, is so hopeless as not to draw upon every resource of which the physician is possessed to bring about a favorable result. It may also be safely stated that no part of the study of typhoid is of greater importance than the diagnosis. It is necessary to arrive at a correct conclusion on this point as early as possible in the course of the disease, so that an appropriate plan of treatment may be adopted.

Moreover, many affections with which typhoid may be confounded in its early stages require a form of treatment quite different from that for the disease under consideration. Typhoid fever I look upon as a disease produced by a distinct virus, probably of bacterial origin, which finds its way into the human system through the alimentary canal. The almost constant effects are the elevation of temperature, and the inflammation of Peyer's patches and the solitary glands of the intestine.

Instead of giving a systematic dissertation on the diagnosis of the affection, I shall rather take up the difficulties which have occurred to me, hoping that in the discussion other points which I have omitted may be referred to. One of these difficulties is to distinguish between typhoid and tubercular meningitis in children. After a careful examination into every particular, the distinction is made in most cases with comparative ease. We have in meningitis the irregular pulse, the retracted abdomen, the constipation and the occurrence of those nervous phenomena which follow the brain lesions. I have, however, seen cases of meningitis which so closely resembled typhoid that a conclusion could not be arrived at until the peculiar nervous phenomena appeared.

In typhoid fever there is a peculiarity in the delirium. It does not deepen into coma. The headache which may be a very prominent feature at the onset of both diseases usually disappears in four or five days in typhoid. In the latter disease, one authority states there is often an interval between the cessation of the headache and the commencement of the delirium. In tubercular meningitis there is no such interval.

In some cases of typhoid the pain in the back of the neck is so severe and continuous, and may be accompanied by such nervous symptoms, as to lead the attending physician to look upon the case as one of cerebro-spinal meningitis. If, however, he carefully watches for the development of the usual signs of typhoid, he will not long be left in doubt.

There are a great variety of nervous symptoms which are often so prominent as to completely mask the real disease.

The following case is a marked example of this. I shall give in detail, as I was led astray completely during the greater part of the illness: M. F., bank clerk. Called to see me May 19, 1892. The patient when a child suffered from brain symptoms. He was often irritable, and had the habit of burying his head in the pillow. He had diphtheria when he was ten

years of age. During the past winter he lost a good deal of sleep, going out to evening parties. He, at the same time, was actively engaged in athletic exercises. About a month ago the patient began to feel drowsy during the daytime, and would go to sleep as soon as he came home from work. Shortly afterwards he was noticed to fall asleep during working hours, and made frequent mistakes in his calculations. These occurred so often that he had to be sent home. When I first saw him he complained of languor and inability to work, but did not say anything about his sleepy spells. I prescribed a quinine mixture. He went to the druggist, and while waiting for the medicine he fell asleep on the chair.

On May 24th he called again, and seemed much worse. He had great difficulty in keeping awake. Pulse and temperature normal. Was called to see him in the evening. He had slept nearly all day, and when waked up he had spells of delirium which lasted about half an hour.

During the following week he remained in much the same condition. He slept twenty-two hours out of the twenty-four, and when awake he would answer questions rationally, but acted in a childish manner. One of his principal occupations was biting a rubber ring. He would scratch his face, if allowed to do so, and would gaze at himself in a mirror for quite a long time. Tremor of arms and legs were present. His pulse was generally under sixty, and his temperature was normal. Dr. Workman saw him with me, and we were both inclined to look upon the case as one of those rare instances of narcolepsy.

On May 31st, his pulse increased in frequency to about 100, and the temperature rose to 99½°.

June 1st. He exhibits the same vacant expression as before, but answers questions in a fairly rational way, although slowly.

June 2nd. Patient had a bad night. Pulse 130, temperature 99 6°. There is a slight rigidity of the muscles of the arms and legs. The hands are clenched, and there is some difficulty in opening them. He had this morning a severe tonic spasm. His intellect seems clearer, and he can open his eyes much better than yesterday. He has difficulty in swallowing. Bowels constipated. Profuse perspiration. He does not suffer any pain whatever. At 2 p.m. I noticed a slight hiccough after taking food. Pulse 120, temperature 99⅘°. Spasms of muscles of the arms still continue. He will sometimes answer questions a long time after they are asked. In one instance three quarters of an hour intervened between the question and the answer. I notice for the first time distension and tympanites of the abdomen.

June 3rd. For about two hours during the night his mouth and tongue were drawn to the right side. Passed urine involuntarily. He is quite conscious to-day. Pulse 80, respiration 16, temperature 99½°.

2 p.m. Pulse, 96; temperature, 100½°. He is quite willing to take food, but is unable to swallow it. Well-marked tremors of the arms.

7 p.m. He has slept quite soundly to-day, and could be roused with difficulty. He has spoken very little, answering questions by movements of the head. Skin reflexes much exaggerated. Noise startles him. Pulse, 82; temperature, 99½°.

June 4th. He was not able to speak during the night, and has been in a profuse perspiration. Pulse, 88; temperature, 100⅘°. Pupils dilated, and occasional tremors of the whole body.

June 5th. Patient has taken very little food. He has not spoken, but will put out his tongue slowly when asked to do so. He has very marked tremors, particularly of the left arm. Skin reflexes still very marked. He died on June 6th.

A *post-mortem* examination was made eight hours after death. Brain: Great engorgement of the veins on the surface, and much softening of the brain substance. Increased amount of fluid in the ventricles. Lungs and heart normal. Liver and spleen normal in size; the latter may have been somewhat enlarged. Kidneys normal. The peritoneal surface of the intestines much congested, and the mesenteric glands enlarged. Marked typhoid inflammation, and ulceration of Peyer's patches and solitary glands of the intestine. Although typhoid fever was spoken of, a correct diagnosis was not made during life. Two of the most constant symptoms, roseola and enlargement of the spleen, were absent.

In another, the renal class of cases, as they are sometimes called, the diagnosis is at first very difficult.

Last autumn, a gentleman about fifty years of age called on me, suffering from anorexia lassitude and some slight œdema of the legs. I examined the urine, and found it loaded with albumen. The case was looked upon as one of acute nephritis, and treated accordingly. In three or four days he called again, presenting a peculiar, stupid, irritable condition. Albumen in the urine was somewhat diminished. The next day I was sent for, and found the patient in bed. I then discovered tympanites, enlargement of the spleen, and roseola; his temperature was elevated. He went through a severe attack of typhoid, and completely recovered. The urine returned to a perfectly healthy condition. No microscopical examination was made when he first called. Such cases should be closely examined, as the purgative treatment of acute nephritis might be very injurious to one suffering from typhoid.

Cases of what is called the pneumonic type are at first exceedingly puzzling, and require the most careful scrutiny. During the past winter I saw a marked instance of this variety with Dr. McCullough. The patient was seized with what appeared to be an ordinary lobar pneumonia.

Although the lung symptoms subsided, there was a continuance of the high temperature instead of the usual fall at the crisis. Typhoid fever or tuberculosis was suspected. The sputa gave no evidence of bacilli, and the urine gave the reaction with Ehrlich's test. The patient went through the usual course of typhoid, and made a complete recovery.

Perhaps there is no greater difficulty in diagnosis than the separation of malarial remittent fever from typhoid. Here we are very much assisted by an examination of the blood during an exacerbation of fever, when, if malaria is present, the plasmodium will be found in the blood corpuscles. The examination can be easily made by one who has received proper training in microscopical work.

Cases of continued fever sometimes come under our observation which differ very much from ordinary typhoid, and yet are not, so far as we can see, due to malarial or any other known poison. It has sometimes occurred to me, in attending such cases, that there may be a morbific agent different in nature both from that of typhoid or intermittent fever. A case of this kind occurred last winter, in which Ehrlich's test gave a negative result throughout. We could not, however, call it one of malarial; and the true nature of the disease was not made out.

The points which are usually given as of the greatest importance in the diagnosis of typhoid are: (1) The course of the disease; slow beginning and gradual rise of temperature, with the typical daily increase; (2) enlargement of the spleen, abdominal symptoms, and roseola; (3) typhoid symptoms, such as dry tongue, sordes, cephalalgia, etc. Very frequently only two or three of these signs are present, and yet from the general history we pronounce the case one of typhoid. It must be remembered, however, that there are cases in which almost all the signs usually given may be present, and still the disease is not typhoid.

Fagge says: "In some cases the most careful clinical observations from day to day may leave one to the last in a state of doubt." A most striking instance of this kind occurred in the hospital last winter. The patient, a man of thirty-five years of age, was sent in as a case of typhoid. An examination was made into the previous history and present condition of patient as carefully as possible. He came to the hospital in a partial state of stupor, and did not answer questions readily. He had been ill ten days, suffering from anorexia, general weakness, and fever of a continued character. When examined his tongue was dry and cracked; his teeth were partly covered by sordes. Abdominal tympanites, with distinct tenderness in the right iliac fossa, as well as enlargement of the spleen, were present. The rose-colored spots were not found in the anterior aspect of the abdomen; but near the spine were some which we considered typical. Three days after he entered the hospital the patient

had a severe intestinal hemorrhage, which did not, however, lower the temperature. On the following night he had a fatal attack of hæmatemesis. The temperature chart made during the few days he was in the hospital showed a daily rise of between one and two degrees.

On *post-mortem* examination no typhoid lesion could be discovered. The spleen was examined for the bacillus, with negative results. The liver was cirrhosed, and a small amount of fluid was found in the abdominal cavity. Some enlarged mesenteric glands were found, one of which, in a state of suppuration, was situated near the right iliac region, and was no doubt the cause of the localized tenderness. Another centre of suppuration was found near the under surface of the liver. The spleen was very much enlarged, but, as said before, no typhoid bacilli were found in it, although a careful examination was made for them by Dr. John Caven. We have here a case presenting nearly every one of the diagnostic features laid down by the best authorities, and still typhoid was not present.

In a case of pyæmia, sent in as typhoid, we had the greatest difficulty in making a diagnosis. It is possible that if we had paid full attention to the observation of Liebreich, who says of typhoid, "The more one believes in the possibility of error, the surer he will be to avoid mistake," we might have arrived at more correct conclusions. Most of our errors are made by a too rapid and insufficiently thorough examination into every feature of the case. When typhoid is prevalent, we are too prone to put down every case of continued fever as one of typhoid. On the other hand, when there have been no cases of that disease in the neighborhood, its presence may not occur to us at first. Upon reading the history of such doubtful and obscure cases as have been given, one is impressed with the thought that the general practitioner ought to have at hand some method whereby he can come to a more correct diagnosis. Of late years, through the use of the microscope, and by chemical analysis, we are in some cases enabled to do this.

There are three ways whereby much light may be thrown upon typhoid cases: (1) Ehrlich's method of examining the urine; (2) an examination of the contents of the spleen for typhoid bacilli; (3) a microscopical examination of the blood taken from typhoid spots.

Ehrlich's test has been in use for the past eight or ten years, but has not received that attention which it, in my opinion, merits. It was introduced into the Toronto General Hospital last winter.

The test is made as follows: Two solutions are kept in separate bottles. No. 1 is made out of 50 c.c. of hydrochloric acid, diluted to 1000 c.c., and saturated with sulphanilic acid; No. 2 of a solution of sodium nitrite, ½ per cent. with water. When we wish to make the test,

40 c.c. of No. 1 solution and 1 c.c. of No. 2 are mixed together in a test tube and thoroughly. The hydrochloric acid acts upon the sodium nitrite, producing nitrous acid in a nascent state. This again forms diazo benzine-sulphonic acid, by its action upon the sulphanilic acid. A small quantity of the test solution is poured into a test tube with an equal quantity of urine, then an excess of liq. ammonii is added; and in cases of typhoid fever the solution assumes a dark claret color, the color being communicated to the foam on the surface of the solution. Dr. Simons, of Johns Hopkins, recommends the introducing the liq. ammonia slowly by means of a pipette, allowing it to run down the side of the test tube and form a layer on the surface of the urine, to which the test solution has been added. A dark carmine-red color will separate the lower solution from the liq. ammonii on the surface. If the test is made in the first way described, and the solution is allowed to stand, the carmine-red disappears, and a dark-green sediment falls down. This reaction never occurs in normal urine, and is due to the presence of some peculiar aromatic compound.

So far the same reaction has been found in some cases of phthisis, leukæmia, and pernicious anæmia, as well as in cases of measles. According to Dr. Simons' observations, the reaction may be obtained without difficulty from the fifth to the thirteenth day of typhoid, and with difficulty until the twenty-second day. It is much more marked in severe than in mild cases. In the latter, it may not occur until the ninth day.

During the past winter a number of tests have been made in various diseases. In every case of typhoid the reaction was found from the fourth or fifth to the thirteenth day, and sometimes as late as the eighteenth or twentieth day. The reaction was found in some cases of phthisis. It was also found in every case of measles. Ehrlich found it also in measles.

In three or four cases where there was much doubt about the diagnosis we found the test of great assistance in clearing it up, and we also found that where typhoid was indicated the case ran the natural course of that disease.

I have already mentioned the pneumonic case of Dr. McCullough. In another, under the care of Dr. Cotton, the disease was masked by marked hysterical symptoms, and urine on the second examination gave the characteristic reaction.

The test must be made with care, and it must be remembered that in all cases a light reddish color is produced. This, however, is very different from the deep dark-red of typhoid.

The weakest point is that it does not distinguish typhoid from tuberculosis. If, however, in the latter disease, the lungs are affected, an accurate diagnosis may possibly be made by examination of the sputa for bacilli.

TUBERCULOSIS.

PRESIDENTIAL ADDRESS READ BEFORE UNIVERSITY MEDICAL SOCIETY

BY W. B. THISTLE, M.D., L.R.C.P. LOND.,

Assistant Demonstrator of Anatomy, University of Toronto; Physician Victoria Hospital for Sick Children; Clinical Lecturer on Diseases of Children in the Woman's Medical College.

GENTLEMEN,—You will allow me to take this first opportunity to thank you for your kindness in asking me to be your president for the coming term. Believe me, I fully appreciate the honor you have done me, and am gratified at this evidence of your esteem. This evening I propose to take advantage of the position in which you have placed me, and instead of the customary inaugural address I shall, with your permission, devote a short time to the consideration of the disease, tuberculosis.

That this subject deserves consideration, and, indeed, demands the best efforts and most earnest study of every one of us, will be evident when one reflects upon the appalling fact that one-seventh of the entire mortality is due to this disease. That there is need of education will be apparent to every thinking man who has paid any attention to the way in which the public, and perhaps a large number of the profession, regard this affection.

This evening, then, gentlemen, I propose to place before you a *résumé*, to some extent, of ascertained facts concerning tuberculosis.

I shall pay no attention to clinical distinctions or varieties: the process being the same whether the lesion occurs in the lungs, the growing bone, the mucous membranes, or the lymph glands. What, then, is tuberculosis? It may be defined as a condition which arises when the minute vegetable organism which we know by the name of bacillus tuberculosis gains an entrance into the body, and finds the conditions favorable for its growth and development; these grow and multiply, bringing about certain changes in the tissue in which it is located, and also producing certain toxic symptoms.

Having defined the disease, one may inquire further as to the nature of this tubercle bacillus. It is, as we have mentioned, a minute vegetable organism, an unicellular body, simply a little mass of vegetable protoplasm. It belongs to the great class of tission-fungi or bacteria. These organisms exist on every hand, and are the active agents in many of the familiar processes of life, *e.g.*, fermentation, putrefaction. In fact, the breaking up of dead organic matter, whether vegetable or animal, into its original constituent elements is entirely the work of these minute organisms. The great majority of bacteria are in their action beneficent, and conserve life;

indeed, life would soon be impossible without them. Commonly, they flourish in dead organisms only, and are termed saprophytes. There are, however, a number capable of living and growing in living organisms—true parasites. To this second class belong the specific bacteria of the infective fevers, and to this class belongs the germ or bacillus we are considering. Regarding the life history of this minute plant, it is essentially parasitic, and it is with difficulty that it can be made to grow and multiply outside the living body, differing from the typhoid bacillus, for example, in this important particular; for while the latter is as truly parasitic, yet it grows luxuriantly in decaying matter. But while the tubercle bacillus will not multiply under ordinary circumstances without the living body, it still preserves its vitality for long periods, and in spite of considerable extremes of temperature and varying conditions of dryness and moisture, so that the moment it is transferred to suitable soil in the living tissue it is capable of reproducing itself. Reproduction is accomplished by spore formation in the interior of the bacillus.

So much for the little vegetable cell itself, and if there were nothing more in its life it is not likely that it would concern us much. There is, however, during the growth of the bacillus, the formation of a chemical substance which is of a highly toxic nature, and to this excretory product we attribute the tissue changes and certain constitutional symptoms seen in the disease.

This power of producing chemical substances is common to the entire class of bacteria; *e.g.*, what has been termed typho-toxine from the bacillus typhosus, cadaveric alkaloids from the germs of putrefaction, and the strychnia-like poison of the tetanus bacillus. This power possessed by the vegetable cell to produce chemical substances, in many cases of a highly poisonous nature, we are quite familiar with in the more highly organized plants; as, for example, strychnia from the nux vomica plant, atropia from the deadly night-shade, or muscarine from the toadstool.

Having seen thus briefly something of the nature and life-history of the infective agent in the disease, we naturally come to the question, how does it effect an entrance into the body, and what, in short, are the conditions favoring its lodgment and growth in the tissues? This at once brings up the much-discussed question of the inheritance or direct transmission of tuberculosis. It may be taken as already proven that such transmission from parents to offspring does take place, that children are born containing in their bodies the tubercle bacilli. The prevalence of the disease in young infants, and its location in bone, so frequently the case in young children, had pointed to the probability of the direct transmission of the germ; but the fact had not been demonstrated until Jacobi found numerous miliary tubercles in the body of an eighth-month fœtus

born of a phthisical mother. In the lower animals also tubercles have been discovered at birth. Since medicinal substances are known to reach the fœtus through the placental circulation, and we also know that syphilis and smallpox are transmitted from mother to child, it is not difficult to conceive of the passage of the tubercle bacillus or of its spores. We must, then, accept the fact of intra-uterine transmission or inheritance. It would, however, seem to be infrequent. Jacobi's case seems unique, although conclusive. Epstean found, in examining two hundred infants born of tuberculous mothers, that only one of them had tuberculosis at ten weeks. The immunity during the early weeks is, however, not marked, as there are many cases of advanced tuberculosis recorded during the first three months of life. The disease is, then, in a number of cases inherited; in the remainder, the germ enters the body from without; even in the inherited cases the infection may also be said to come from without, for the first of the series must of necessity have acquired the disease. Let us now look for the channels through which the bacilli may be conveyed. The moment a child is born, it becomes liable to infection through the medium of its food supply. Should the mother be phthisical, her milk may be a source of danger to the child. While many authorities deny this, yet, judging from analogy, it would seem highly probable that the mother's milk in such cases does contain the bacilli.

Tuberculosis, as is well known, occurs very frequently in cows, and in the animals so affected a tuberculous mastitis is often seen. The milk from the animals has been proven to contain tubercle bacilli, and other animals have been made tuberculous by being fed on this milk. It was held that only in those cases having this affection in the milk gland were the bacilli seen. Professor McFeydan, however, demonstrated bacilli in the milk ducts of tuberculous cows in the absence of any disease of the milk gland. If, then, the bacilli have been found in the milk of tuberculous cows when no disease of the gland could be made out, we have sufficient reason to suspect the mammary secretion of a phthisical mother. The disease, then, may be acquired either through the milk of a tuberculous mother, or through using the milk of tuberculous cows. The flesh of affected animals is usually rendered sterile by the process of cooking. Even if this were not the case, the bacilli contained in solid food are much less likely to escape destruction by the acids of the stomach than those carried in with a large quantity of fluid, which passes quickly through the stomach, and, moreover, acts as a diluent to the acid secretion. Inhalation has always been considered one of the chief sources of tubercular infection. Immense numbers of bacilli and spores are contained in the expectoration of phthisical patients. This sputum, when dried, is carried about as suspended particles in the air, and settles on the floor, walls, and clothing, and may be readily inhaled. In

this condition the germs, although they do not multiply, yet retain their vitality for long periods. Bacilli and spores have been demonstrated as retaining their vitality after being exposed in sputum for forty days, and when protected from the action of the atmosphere for 186 days. It is indeed a fortunate fact that they do not multiply without the living body. Bacilli are constantly found on the walls, furnishings, and in the dust of the rooms occupied by consumptives. There is no proof that they are carried off by the patient's breath. No bacilli were found in the dust taken from an inhalation cabinet used by consumptives.

That individuals and families contract the disease readily, while others living under identical conditions escape, is a fact constantly observed; as also the additional fact that a condition in which the vitality is lowered and in which certain tissues—notably mucous membranes, lymph glands, and bone—are subjected to injury or irritation, and consequent inflammation very frequently precedes the onset of tuberculosis. On the other hand, individuals of robust condition and healthy tissues remain free of the disease, although much exposed. These facts would seem to point out the condition or soil necessary for the lodgment and growth of the germ. "The healthy, vigorous tissue cell is quite capable of destroying any bacilli which may find their way into the body" (Woodhead). It is only when the cells are originally of poor quality, are weakened by inflammation, or have their activity impaired by certain excretory products retained in the blood, that the bacilli escape destruction and grow, becoming the aggressors and destroying the cells.

The manner in which this destruction of tissue is accomplished may be most readily understood if we follow the bacillus. A child, for example, as the result of the irritation of indigestible food, has developed an intestinal catarrh, and consequently the mesenteric glands became enlarged. Bacilli, taken perhaps with the milk, are carried to these inflamed glands and deposited there, the vitality of the cells in the gland is diminished, and the bacillus escapes destruction and is able to effect a lodgment, multiplies and produces its excretory toxic substance. At first the poison stimulates the cells of the gland and they proliferate rapidly, causing still greater enlargement. As the poison becomes more concentrated its action becomes more intense, and the tissue cells swell, lose their vitality, and undergo necrosis. This process continues until the gland becomes a caseous mass. While the concentrated poison was causing the interior of the gland to caseate, the stimulating effects of the smaller dose of poison is being shown in the rapid proliferation of connective-tissue cells at the periphery, forming a capsule, as it were. After a time this newly-formed connective tissue may also yield to the poison and undergo necrosis, with rupture and escape of the broken-down contents, consisting of a caseous and liquefying mass, containing bacilli and probably an immense number of spores.

In the lung, in the head of the fermur, or in any situation, the process is the same—cell proliferation, followed by degeneration, both processes being the result of the action upon the cells of the chemical substance elaborated by the growing bacilli.

In the treatment of tuberculosis we have, as in typhoid or any other contagious disease, a double duty to perform—to treat the patient, and to protect his friends and the public from the contagion. Regarding the treatment of the disease, while constant effort is being made to find some agent that will counteract the poison in the body, so far without very decided success, the best treatment embraces anything and everything that will improve the nutrition of the tissue cells, thereby increasing their resistance to the bacillus and opposing the progress. This improvement may be brought about by giving good and suitable food, by securing a plentiful and constant supply of fresh air, by change of climate, by judicious exercise, by attention to the patient's habits and surroundings, and by the giving of medicines that are known to stimulate and improve nutrition. In so far as the patient is concerned, our treatment follows logically upon our knowledge of facts. But is this the case when we come to the question of the protection of the patient's friend, or of the public? Quite the reverse, as a rule. While the profession is possessed by the new facts relating to tuberculosis, yet it would seem that, to a very large extent, the old ideas which were formed when consumption was regarded as a mysterious sort of blight are those acted upon. There is no reason why tuberculosis should not be classed amongst the infectious diseases, and the same scrutiny exercised and precautions enjoined by boards of health as in the other members of the class to which it properly belongs. Were this done, the public would soon become educated regarding the nature of the disease and the precautions necessary to prevent contagion, with the result of an immense reduction in the death-rate from this cause. In Germany, for instance, where this matter of public education has to some degree been attended to, and instruction published regarding disinfection and prevention of contagion, the result is seen in the diminution of the death-rate from tuberculosis at .28 per thousand. If a lessening of the death-rate to the same degree were brought about in the British Isles, it would mean the saving of 10,000 lives per annum. Every physician must be able to recall instances in his own practice where neglect in this particular has resulted in the death of several members of a family instead of one. Indeed, this is the case to such an extent that the laity are prone to consider the first case as the beginning of a series in that family, and friends immediately become solicitous about the other members.

Let me give you one or two examples to illustrate this point.

CASE 1. W.R., a young man, æt. 24, who had been living in a large

city, returned to his home with tuberculosis. He was one of a family of nine children, the eldest then about thirty years of age, the youngest about ten. Prior to this the children had all been healthy. The father was alive and well. Mother died from puerperal fever, aged about forty-five. The grandparents on both sides lived to be about eighty.

The young man was nursed for perhaps a year, going about the house and grounds, taking no precaution whatever regarding sputum. The house, it may be added, was closely surrounded by trees, so that sunlight was practically excluded.

Shortly after his death an elder sister, who had looked after him for the most part, and who after his death occupied the same room, began to fail, and in a short time died from tuberculosis. At the time of her death I was asked to see a younger sister, who, it may be noted, occupied the same room and slept with the deceased sister, and found then moist crepitation and breaking down in the apex of the lung.

That the second and third cases might have been prevented if disinfection had been carried out in the first case does not reasonably admit of doubt. Cases such as this are seen many times in the practice of every medical man.

If the physician were to bear in mind the facts regarding the life-history of the germ, he would in every case explain the danger and manner of contagion to the patient and his friends, and would instruct them in the methods of disinfection of sputum and room. In addition, he would pay attention to the surroundings, securing, where possible, a plentiful supply of light, preferably sunlight. Exposure to the sunlight for a few minutes kills the bacillus, and ordinary daylight accomplishes the same result in a somewhat longer time. Regarding food materials, he would have milk sterilized by immersion in boiling water. In cases of intestinal disease, the discharges should be disinfected as in typhoid. On the termination of the disease, a rigid cleansing of the room should be undertaken.

BILIARY CALCULI.*.

By J. H. Burns, M.D., Toronto.

The case which I have to describe to-night is one of biliary calculus, which in itself presents no especial features beyond the ordinary, except that it was under observation by the patient himself for a longer term of years than usual, although he so strongly dissented from the opinion given him that *post-mortem* examination was permitted to satisfy those of his friends who coincided with his dissent.

* Read at a meeting of the Toronto Clinical Society, December 15th, 1892.

The patient, in his fifty-second year at the time of his death, had pains of a colicky nature in the region of the gall bladder, recurring at intervals from the time he was twenty years old. These, however, were so slight, and of such brief duration, that professional assistance was not sought until two years ago, when I saw him in the agony of passing a calculus for the first time. Upon careful inquiry, at that time, into the history of his former seizures of colic, I could not learn anything more definite than that there was pain more or less acute, of shorter or longer duration, and always referable to one place, but never requiring more diligent treatment than hot stupes and simple hot aromatic infusions. No after effects were noticeable, not even the slightest icteric tint.

The attack in question, of two years ago, was, however, most unmistakable; there was present the usual abrupt invasion with the excruciating pain in the right hypochondrium, radiating to the right shoulder, thorax, and epigastrium, associated with rigor and elevation of temperature, and followed by marked jaundice after the decline of the acute symptoms.

I saw him again in June of this year in another attack, quite as severe, and learned from him that in the intervening period he had suffered from two other seizures similar in character, which had been treated by another physician, whose diagnosis, I was told, did not agree with mine.

On the 26th October last he had a more than usually severe recurrence, which continued for three days, and before convalescence was established another attack (on the 31st October) of colic supervened, more severe than the first, which was followed by intense depression, violent hiccough lasting for two days, syncope from exhaustion and the intensity of the pain, and death on the 5th of November.

Post-mortem examination, conducted by Dr. W. H. B. Aikins, revealed a gall bladder about six inches in length, distended with bile, mucus, and pus, and containing forty-five calculi, here shown, the largest of which completely obstructed the opening into the cystic duct, and was with some difficulty pushed backward into the gall bladder. The inner surface of the gall bladder was extensively ulcerated.

The liver, which was intensely congested throughout, was fatty cirrhotic, its upper surface covered with lymph. The inflammation had extended to the diaphragm, which was also congested, giving rise, doubtless, to the hiccough which had persisted during the last two days of life. The kidneys were in an advanced stage of Bright's disease.

Such, Mr. President, is a brief account of this case in particular; but if you will allow me to observe in connection with this subject in general, although I may be guilty of transgressing the rules which are supposed to guide a clinical society, that the literature of cholelithiasis furnishes very little accurate information as to the chemical process involved in the formation of gall stones.

We know that age, sex, habits of life, and certain diseases of the liver and gall ducts are predisposing causes; but the manner in which the formation of the calculus takes place is, to a very great extent, conjectural.

Dr. Thudichum, in a paper recently (November 4th, 1892) read before the West London Medico-Chirurgical Society upon the subject of gall stones, their origin, nature, and treatment, maintains "that they are originally caused by a catarrh of the mucous epithelium and glands of the bile ducts; this leads to a formation of the casts of the ducts, and around these, after they have been shed, the gall stone matter is deposited. During the catarrh bacteria enter the ducts from the duodenum and cause decomposition of the bile. Foreign bodies are rarely, and the often alleged inspiration of bile never, the cause of gall stones, their real composition being a selection of the products of bile decomposition. A rational treatment of gall stones could only be based upon a right appreciation of the functions of the liver and bile."

He further says: "But little progress has been made of late years in this direction, but direct relief was now obtainable by cholecystotomy. When the bladder was diseased cholecystotomy should be performed, but this operation involved a greater risk."

I have not had any experience myself in connection with this operation, but believe there are present here to-night surgeons who have performed it, and it will be a matter of interest for us to obtain from them their views upon the subject.

In the case which I have described, operation was considered in consultation, but was advised against because of the feeble state of the patient.

It appears to me that it must be a most difficult point to determine in a case of recurrent obstruction of this kind whether the efforts of nature will be sufficient to overcome one seizure as well as the last one, or whether any particular crisis may be that special one demanding operative interference.

I have not been able to discover in the literature of this operation, which of necessity is yet very meagre, any distinct guide in coming to a conclusion upon this point.

The rapid termination of my case left very little time to prepare for surgical interference, if that were necessitated by the opinion that such was likely to prove beneficial as a last resort; whereas, on the other hand, it would not appear unreasonable to hope that, with the greatly improved means at the disposal of modern surgeons, a fair expectation of safety in operation might be looked for in all such cases. Operation, as in irreducible hernia, might be resorted to if there is the slightest doubt. As

yet, however, I believe the results of gall-bladder surgery are insufficiently collected to justify the establishment of a code of rules.

Fraenkel, writing September last upon this subject, states "that in records of operations for biliary colic too little attention has hitherto been paid to the presence or absence of adhesions in the region of the gall bladder. Two cases are reported in which, on operating for the relief of symptoms indicated of severe cholelithiasis, Gersung, of Vienna, discovered nothing save adhesions between the region of the gall bladder and the omentum. In one of these cases there was complete absence of the gall bladder. Division of the adhesions was followed in each case by speedy and permanent cure. These instances," Fraenkel points out, "show that symptoms resembling those of cholelithiasis may be caused by the results of old inflammatory processes, due, in some cases, to the presence of biliary calculi, and in others quite independently of any disease of the gall bladder and ducts. The fact that such symptoms may be caused solely by adhesions and tense cicatricial bands would favor a recourse to operative interference in those cases in which, with all the subjective indications of cholelithiasis, there is an absence of tumor and other palpable signs of retention. It is probable that more frequently than is generally supposed, and, indeed, even in cases of actual cholelithiasis, intense biliary colic may be due to the frequent presence of old inflammatory adhesions. Similar conditions about the female sexual organs have long been regarded by gynecologists as indicative of exploratory laparotomy, as severe and exhausting attacks of pain have often been arrested by division of morbid uterine and ovarian adhesions."

For my own part, I should not hesitate, were I to have a similar experience with this trouble, to make an exploratory incision as soon as there appeared doubt as to the usual rapid recovery one looks for from the passage of the offending stone. And I am led to this conclusion from the very unsatisfactory therapeutic means at our disposal.

In the acute stages, we are limited to the use of morphia as our very best agent to control pain, and in the intervening periods, besides the ordinary hygienic advice which one may give to his patient in regard to diet, exercise, avoidance of cold (for these attacks mostly occur in cold weather), etc., it would seem that no medicine has any effect whatever upon the calculi already formed and retained in the gall bladder. Phosphate of soda, olive oil, bicarbonate of soda, and chloroform are remedies recommended by various writers, but equally disappointing. In view of the fact that common observation recognizes such dangers as the following: exhaustion from repeated attacks; fatal collapse from pain; fatal jaundice; dropsy of the gall bladder, and danger of it rupturing; empyema of the gall bladder; abscess of the liver; local peritonitis; perfora-

tion of the gall bladder or gall ducts causing abscess; peritonitis and septicemia, and intestinal obstruction or hemorrhage, it is to be hoped that we may have such collected experience that we shall know more accurately when we should operate, and feel less hesitation in undertaking this operation than has been the case in the past.

REPORT OF THREE CASES OF UNUSUAL JOINT LESION.*

By B. E. McKenzie, B.A., M.D.,
Lecturer on Orthopædic Surgery, and on Surgical Anatomy, in the Woman's Medical College, and Surgeon to the Victoria Hospital for Sick Children, Toronto.

I. SPONTANEOUS DISLOCATION OF THE HIP.

Nov. 20th, 1890: Mrs. J.T.R., æt. 21, had one child two months ago. Her mother once lay for some time confined to bed because of some nervous trouble. Aug. 16th, at about midnight, Dr. Mennie was called to see the patient, and found her sitting upon the side of the bed, unable to get in. Complained of great pain down the back of the right thigh and leg, and about the hip. Had not been lame previously, except that there was a noticeable limp on the 16th. Had for some time previously complained of pain in the shoulders, elbows, knees, and fingers, and some of the joints, especially those of the hand, were slightly swollen. Dr. Mennie had been treating her for rheumatism. No accident had occurred. She came upstairs herself, and undressed to retire. The pain came on when she sat down on the side of the bed. Dr. Mennie found her very nervous, and could not get her into bed until he had administered chloroform. From the first, the right femur assumed a position of flexion and adduction. In a few days she had to have a pillow under the knee. The leg became more flexed and more adducted during the weeks that followed. She lay in bed two months; complained much of pain in the groin over the adductors, and over the great trochanter. She habitually sat in bed during this time, bringing the right knee up nearly to the chin, and having her hands clasped over the knee. During the month that had just elapsed, previous to this consultation, she had been out of bed at times, moving about by the aid of crutches. Upon examination, I found the right foot drawn up, and its inner surface lying against the inner and anterior surface of the left tibia, and the right heel about seven inches above the left. The femur was held at an angle of 145° and adducted 45°, so that the opening of the vulva was placed against the inner side of the thigh, and the femoral crease was covered by an eczema over a space two inches by six inches; the femur rotated inward. Gave chloroform. The thigh

* Read at the meeting of the American Orthopædic Association, New York, Sept. 20th to 23rd, 1892.

was fully flexed, and upon movement the trochanter could be well outlined, not much higher up than that on the left side, and the head of the femur could be distinctly felt behind and a little above its normal position. There was no swelling of the parts about the joint. It was evidently a case of dislocation of the head of the femur upon the dorsum ilii.

The knee being fully flexed, also the femur, abduction was made, rotation outward and complete extension, the left hand being kept behind the joint as a fulcrum. Some structure, apparently fibrous, was felt to give way, and the leg was brought down into nearly normal position. The obstacle to complete extension seemed to be the contraction of the flexors and adductors, and the shortened inter-muscular septum lying inward from the tensor vaginæ femoris. The limb was fixed in this position by a long side splint, and the next day a Thomas posterior hip splint was applied with a view to retaining the limb in this position. There was no elevation of temperature, and no swelling or reaction because of the reduction of the dislocation. The following are the measurements made with care at this time: Right calf, 8¼ inches; left calf, 8¾; right knee, 11¼; left knee, 11¼; right thigh, 10¼; left thigh, 10¾; (2 inches above patella), right thigh, 13¼; left thigh, 13¼; (6 inches above patella) from right anterior superior spine to right internal malleolus, 30 inches; from left anterior superior spine to left internal malleolus, 30¼ inches; from umbilicus to right internal malleolus, 32½ inches; from umbilicus to left internal malleolus, 33 inches. Splint was removed early in January, 1891, hip joint apparently anchylosed; has remained constantly in bed; suffers no pain.

June, 1891. Mrs. R. lame, but walking without aid. General health much improved.

September 8th, 1892. Patient has had another child, now nine months old, a large healthy boy. She is much improved in health, being much fleshier and of good color; walks lame; is worse at some times than at others, depending upon conditions of the weather. Sometimes for a few days is almost confined to a couch, having pain at the front of the joint, over the great trochanter, and sometimes as far as the knee, and even to the ankle. On examination I find complete anchylosis, no adduction, no shortening, no atrophy.

Nearly all cases of spontaneous dislocation have been observed at the hip.* This case, no doubt, occurred through muscular action, and through pressure of the paient's hands pushing the head of the femur toward the cotyloid notch, as the limb was held strongly flexed. The anchylosis which now exists in the joint probably points to the rheumatism as an important causative factor.

*Stimson on Dislocations, 1888, page 463.

II. COMPLETE LATERAL DISLOCATION OF THE KNEE.

M.M., æt. 50, farmer, about five feet nine inches in height, 170 pounds in weight; always a rugged, healthy, active man. In March, 1891, while working in the woods hauling logs with his team, a long and rather slender log to which his team was hitched became wedged between two trees, one of which was in contact with the butt of the log, the other on the opposite side about the middle, while the team was hitched to the smaller end, drawing so as to bend the log, thus increasing its pressure against both of the trees; at the smaller end, the log had a diameter of about six inches. While the team was drawing forcibly the chain about the log broke, and the latter, springing back, struck the leg. Upon examination there was found a complete lateral dislocation, the femur inward, the tibia outward. There was about three inches of shortening. There was no abrasion or bruising on the surface to indicate what part of the leg had been struck. Reduction was easily accomplished by traction and manipulation, and the leg was placed on a MacIntyre splint at an angle of about 160°. There was soon a large amount of swelling and considerable ecchymosis, especially on the outer side. There was not much shock. No great amount of pain was complained of. Pulsation could be found in the dorsalis pedis a few hours after the accident. The leg was kept carefully at rest for about three months, there being considerable tenderness about the joint. There was no sloughing; no abnormal sensations remained in the leg. There was a considerable shortening in the calf muscles, producing a moderate degree of talipes equinus. This has been satisfactorily overcome in later months by exercises employed for stretching the posterior group of muscles. There is now very slight lameness, and the limb can be fully extended and flexed to 90°.

The number of cases of this dislocation in which there was a complete separation of the ends of the tibia and femur is very small.* As in other cases, the reduction was easily effected, the reaction slight, and recovery good.

III. SEPARATION OF FEMORAL EPIPHYSES AT BOTH HIPS DURING SCARLET FEVER.

January 15th, 1891. C.C., male, æt. 4 years. Was ill in spring of 1890 with scarlet fever; had always been a healthy boy, active, and perfectly formed. Had a long illness; made a tedious recovery; had several abscesses, one in front of the ear, one over the larynx, and one over the great trochanter on the left side. These all seemed to be superficial. He became greatly emaciated, and digestion was very poor. Was carried out of doors each day, and in autumn had sufficiently improved to be able to walk, in so doing showing a very awkward mode of movement. It was described

* Stimson on Dislocations, 1882, p. 467, *et seq.*

by his father as a waddling gait. His appearance and movement were characteristic of double congenital hip dislocation. On drawing the limbs down, and shoving up again, they move through a distance of about an inch and a half, and there was felt a cartilaginous grating in each limb, most marked in the left. No tenderness or swelling; general health excellent; has no pain; sleeps well.

Diagnosis. Separation, and probably absorption, of the epiphyses. I recommended fixation and extension by the use of a Thomas double hip splint. This treatment was not adopted, and the boy was taken to an institution in the United States where a complicated appliance was employed.

January, 1892. Examined the boy again, and found that mechanical appliances of various kinds had been employed with a view to correcting the lordosis and holding the femora in place. There is, however, little or no improvement. When the weight rests upon the feet, the trochanters are carried far above the normal line. In any case of this kind, I think it exceedingly doubtful whether an ambulatory appliance can be devised which will retain the femora in right place in reference to the acetabula.

CANCER OF THE BREAST AND AXILLARY GLANDS.*

By Dr. N. A. Powell, Toronto.

Mrs. L., æt. 69, received a blow in the lower and outer quadrant of the right breast two years ago. In May, 1892, she noticed a small, hard growth there, and in November, after consulting her relative, Dr. Mitchell, of Enniskillen, she was referred to me. With the assistance of Dr. Mitchell, I removed the tumor now presented, and also the axillary contents. Enlarged and hardened glands were found behind, below, and in front of the axillary vein, but their removal presented no special difficulty when undertaken by the plan which I have now for some years adopted, and which, in order to open the discussion, I shall presently describe.

The wound in this case was healed by the seventh day. The temperature at no time, when taken, exceeded 99°F., and there was no pain, nor disturbance of rest or nutrition.

I would feel like apologizing for having taken your attention while relating such an ordinary history and result were it not for the fact that very ancient and very faulty advice is given in certain of our surgical textbooks with reference to the operation in question.

Besides that, we all see it done from time to time in such manner as

*Abstract of remarks at a meeting of the Toronto Medical Society.

almost to insure early recurrence. I have done it that way myself, and am trying to be as honestly critical of my own work as of work done by others.

Position of patient. The body should be tilted from the operator by a pillow covered with rubber sheeting, and placed under the shoulder of the affected side. This gives better light in the axilla, and facilitates its dissection. During the breast removal, the arm should be held accurately at a right angle with the body.

For the axillary part of the operation, the hand should be carried up and placed under the head. Titian's "Sleeping Venus" illustrates most admirably the correct position.

The latest edition of Erichsen figures a patient lying on a bed with a wrist tied to an upper bedpost, as all ready for operation. Such illustrations insult the intelligence of modern surgeons.

Incisions for the breast. We may leave out of consideration the plan suggested by Dr. T. G. Thomas, to secure healing with hidden—*i.e.*, submammary—scar. It is called for only when a non-malignant tumor is to be removed from a patient who must be able, subsequently, to appear in low-cut evening costume.

The narrow elipse formerly so much in use is now giving way to a wider elipse, one that falls well outside of all suspicious tissue. So far, I have not seen any case in which the circular or dinner-plate incision of Gross seemed to have any advantage over this wide elipse.

Extension for axilla. Many authorities direct that the excision for the breast be extended "into the axilla." This is inexact, and leads to undue and dangerous prolongation of the operation. It is better, for many reasons, that the incisions should not be made into the axilla, but should pass just in front of its anterior border, and then out upon the arm for about two inches over the prominence formed by the corico-brachialis. The slow and risky way is to work up the axilla toward the axillary vein. The rapid and safe way is by incising the bicipital fascia covering the corico-brachialis, to come down at once on the vein, and then to work away from it. As cancer cells are found in the fat as well as in the glands, it should be cleared away in one mass with these glands. The intercosto-humeral nerves, being cutaneous, need not be preserved, but injury to the subscapular nerves must be carefully avoided. It is of the first importance to clear away the fascia covering the great pectoral muscle near its outer border, as in it lie the lymphatic radicles. I believe that recurrence most commonly starts in this tissue, or from glands left between the axillary margins of the two pectorals, or at the apex of the axilla.

When the dissection is completed the flap formed can be raised up, and it will be found that the suture line is nearly vertical, thus favoring

drainage, and that it is in front of the axilla, thus tending to delay the oncoming of œdema of the arm when recurrence does take place. I like to place a good-sized short glass drainage tube in the axilla, and bring its distal end out through an opening made in the skin at the edge of the latissamus dorsi. So placed, its mouth will lie in the groove between the arm and the body, and the drainage will be perfect. Such a tube can, as a rule, be removed by the second or third day, and the wall of lymph which has formed around it will be sufficiently rigid to keep the opening patent as long as any opening is required.

Wound closure. If the upper and lower flaps of the breast wound are freely dissected up from the chest wall, they will generally slide together and lie in easy apposition when the hand is placed as it should be with the finger-tips touching the opposite shoulder. This expedient, coupled with the use of relaxation sutures, aids materially in securing prompt repair. Disregard of these points will increase the number of cases in which the wound remains open, or reopens on account of tension upon the stitches. The advice sometimes given to fill the wound for a few minutes before closing it with hot sponges does not commend itself to me. When removed, these sponges must tear away the clots that have formed in the mouths of small vessels. A better plan is to make elastic compression by large sponges held outside the flaps.

For sutures, I have been better pleased with silkworm-gut than with any other material, and Treeves' suggestion to tie the first half only of a surgeon's knot, and to leave the ends long with each point of interrupted suture, is a good one.

Stiles' test. In this connection it may be well to call attention to the usefulness of the method suggested by Mr. Stiles, of Edinburgh, for determining, during operation, the extent to which the tissues are involved by cancerous growth. Briefly, this consists in washing the removed breast under the tap for five minutes, then placing it in 5 per cent. nitric acid for ten minutes, again washing, and finally placing it for two or three minutes in methylated spirits. The result is that the fat is unchanged or slightly yellowed, the normal tissue of the breast becomes translucent, while all cancerous tissue takes on a dull, opaque appearance, which has been compared to that of the eyes of a dead fish. By this test, which an assistant can easily make during the clearing out of the axilla, it is possible to determine whether or not the incisions have been placed sufficiently outside all infected tissue.

Prognosis. Of necessity the ideas which we hold regarding the causation of cancer will influence the prognosis. While insurance companies still cling to the notion that hereditary influences are paramount in tubercular and in cancerous diseases, the consensus of medical opinion is

in favor of the strictly local origin of cancer. The most extensive European statistics point to one or more of three factors as standing in causative relationship to practically all cases of mammary cancer. These are: (1) Trauma; (2) puerperal mastitis; (3) eczema of the nipple. Early and complete removal justifies a reasonably favorable prognosis. Late or partial—or, worse still, late and partial—removal justifies Paget's statement that "recurrence is as certain as anything in surgery."

Statistics ten years ago justified the belief that, out of one hundred operations, there would be fifteen deaths, ten cured cases, and seventy-five recurrences.

Antiseptic surgery can make no change in the real nature of cancer, but earlier and more radical extirpation can give and is giving far better results.

Warren, of Boston, thinks that the mortality is now down to from 3 to 5 per cent., and that we may hope for 20 per cent. of cured cases.

I have data regarding 182 aseptic radical operations by five surgeons, four of whom are men of distinction. In this series there were but 8 deaths, a mortality just over 4 per cent.

As to immunity, prolonged or otherwise, after operation, I am not yet ready to report.

HYDROSALPINX, CAUSING OBSTINATE AND DANGEROUS UTERINE HEMORRHAGE.

Reported to the Toronto Medical Society, December, 1892.

By Dr. J. F. W. Ross.

The causes of uterine hemorrhage may be divided into two classes: first, puerperal; and, secondly, non-puerperal conditions. The puerperal conditions do not concern us at present. Of the non-puerperal there are several that require special mention. I would divide the non-puerperal into intra-uterine causes and extra-uterine causes. Of the extra-uterine causes there are a variety. To several of them, however, little attention has been paid in text-books, and, as a consequence, professional attention has not been called to them. They may be classed as follows: First, extra-uterine pregnancy; secondly, inflammatory diseases in the tubes; and, thirdly, inflammatory diseases in the ovaries. Of the inflammatory diseases of the tubes, we have pyosalpinx, hæmatosalpinx, and hydrosalpinx. Of the inflammatory diseases of the ovary, we have cystic disease of one ovary, with formation of one large cyst, and a probably healthy condition of the other; we have cystic disease of both ovaries, with enlargement of the organs and a degeneration of the parenchyma into a

number of medium-sized cysts; and we have hæmatoma of one or both ovaries—more frequently the former—where we have a large cavity in the structure of the ovary filled with blood. I have now met with all of these conditions, and there is one other that should be added to the list, namely, inflammatory disease of the peritoneum producing the so-called cystic disease of the peritoneum. It is only two days since I saw such a case, and learned from the attending physician that for nearly four months she had continuous uterine hemorrhage. I have never yet seen continuous uterine hemorrhage accompanying tubercular disease of the peritoneum.

In this connection there are three cases I would like to speak about. The first is a case of hæmatoma of the left ovary, together with double pus tubes. The tubes, however, were small, firmly fixed, and contained but a few drops of pus. The ovary was enlarged to about the size of a small orange, and converted into a blood cyst. The symptoms of the case were: The patient had been confined eight months before I saw her, and was sick for ten or eleven days. The husband was suffering from a urethral discharge that came on in some unaccountable way during an absence from home. About two or three months after her confinement, pain came on in the left side and back, accompanied by high fever, and confined her to bed for six weeks. She then went around for one week, when hemorrhage from the uterus came on, and it became so free that she was obliged to go to bed again. She remained there for a week; was then able to be about for two weeks without any loss of blood. The hemorrhage then recurred, and she was obliged to remain in bed for two weeks. The loss became so excessive that she came to the city to consult me.

The next case was one of cyst of the right ovary. The ovary was completely disorganized, and the capsule contained one large cyst. The organ would be about the size of a Mandarin orange. The symptoms of the case were those pointing to a supposed miscarriage with continuous hemorrhage. The patient was sent to me with a diagnosis of retained placenta. When I put her on the table for the purpose of dilating the cervix and removing the piece of placenta, I made a vaginal examination for the first time, and was surprised to find a cystic, fluctuating, movable mass down behind the uterus. The diagnosis then appeared to lie between unruptured extra-uterine pregnancy and small cyst of the ovary. Under an anæsthetic the ovarian ligament was distinctly felt, and the case was diagnosed as one of small ovarian cyst.

The next case is the one attended by Dr. Galloway and myself. He has promised to outline the history of the case before I saw her. After seeing her, I decided that it was advisable to explore the interior of the uterus with the finger before proceeding to do a laparotomy. On examining under chloroform we discovered a cystic, movable mass, with lax

walls, lying in the pouch of Douglas, and feeling very much like a piece of intestine. I dilated the uterus, passed in the finger, found the cavity empty, packed with iodoform gauze, and we then left the house. After removal of the gauze, hemorrhage came on, and the doctor used muriated tincture of iron on a swab to the interior of the uterus. This did not control the hemorrhage, and it was found necessary to pack the uterus firmly with gauze, so as to produce pressure on the vessels. As soon as this was removed, hemorrhage recurred. I then applied the actual cautery to the interior of the cervix and repacked. The hemorrhage again recurred, and we used the gauze dipped in a saturated solution of alum, and, subsequent to this, used tannic acid powder on iodoform gauze. The patient became very weak and bloodless; her pulse ranged, at times, at 110 to 130. No inflammatory reaction ensued. For several days we almost despaired. The uterine cavity looked angry, as a consequence of the continued packing and irritation of the different applications. This packing was kept up for a period of three weeks. The patient gradually improved. Packing was discontinued, and, under the care of a trained nurse, she was slowly nursed back to a condition of fair health, when I performed abdominal section and removed the mass presented here to-day. It is a cyst of the right tube; the contents are, as you see, clear and serous. The right ovary was so atrophied that it appeared like three or four small peas on the posterior surface of the broad ligament. The left tube was normal, and was not removed. The left ovary was in a condition identical with that of the right, and was not removed. There were virtually no ovaries to remove, because they were so small. The patient is making an excellent recovery.

In the two former cases there has been no return of the uterine hemorrhage. In the first, both ovaries and tubes were removed; in the second, but one ovary, the cystic one, was removed; and, in the third case, but one tube and neither ovary was removed.

It is not necessary for me to speak, at present, of any of the intra-uterine causes of uterine hemorrhage. A diagnosis, in these cases, is of the greatest importance. The intra-uterine applications will not give permanent relief when the cause of the hemorrhage is extra-uterine.

Hemorrhage, as a consequence of the presence of the above-mentioned conditions, is not a frequent occurrence. The conditions enumerated are perhaps more frequently accompanied by irregularity of menstruation and a copious discharge of mucus from the uterus and vagina, constituting a profuse leucorrhœa. In such cases it is as useless to attempt to cure the leucorrhœa by intra-uterine applications, or the curette, as it is to attempt to stop the hemorrhage in those cases that bleed from extra-uterine causes by intra-uterine applications, or the curette.

Progress of Medicine.

MEDICINE

IN CHARGE OF

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Tuberculous Pericarditis.

Tuberculosis follows hard upon rheumatic fever as a cause of pericarditis. The affection is usually overlooked clinically, and possibly in some cases anatomically. In 1000 autopsies, the majority of which were made at the Montreal General Hospital, there were 275 cases with tuberculous lesions, in seven of which the pericardium was involved.

Etiology. Tuberculous pericarditis is not limited to any age. The youngest of my cases was a child of five years; the oldest a man of seventy-two years. Parrot, Duckworth, Rolleston, and Letulle have reported cases in infants under a year. In Brackmann's Gottingen Thesis of sixty-five cases collected from the literature, nineteen were in children. It does not seem to be at all uncommon in old men, and there are two cases on record in octogenarians. Males seem more prone to the disease than females; there were only four women on my list.

Tuberculous pericarditis is due, in a majority of instances, to infection of the membrane from caseous mediastinal lymph glands.

A second, less common, mode of extension is from the pleura or from the lung.

And, lastly, there are instances in which the pericardium appears to be involved with the pleura and peritoneum in a general tuberculosis of the serous membranes. In some of these cases the extension can be shown to have been directly from the pleura and pericardium into the peritoneum, while in others it would appear that the extension was from the peritoneum into the serous membranes of the thorax.

Morbid Anatomy. The picture is extremely varied. Practically there are two groups of cases; those with firm adhesions between the pericardial layers, usually with great thickening; and those with recent exudation, fibrinous, sero-fibrinous, hemorrhagic, or purulent. The cases with adhesions are the most numerous.

The condition of the heart in the chronic adhesive form is most interesting. As is usual in adherent pericardium, particularly when the layers

are very thick, there is enlargement of the organ, which may reach an extreme grade.

In the cases with effusion there may be (*a*) a simple plastic exudate similar to that of ordinary rheumatic pericarditis, with little or no serous effusion, and with scarcely any thickening of the membrane, the eruption of miliary tubercles alone indicating the nature of the process. More commonly there is (*b*) extensive sero-fibrinous exudate, consisting of flakes of lymph and a turbid serum. (*c*) In some cases the exudate is hemorrhagic. The membranes here may be deeply engorged, and hemorrhagic foci may be seen in them. The color of the effusion may be bright red, but is more commonly a reddish-brown or chocolate color. The amount of the effusion may be large, ranging from 500 c.c. to 2000 or 3000 c.c. And, lastly, (*d*) the effusion may be purulent, and this, too, apparently from the outset, and not following paracentesis. The exudation may be enormous, and the cases have been diagnosticated as left-sided empyema.

CLINICAL HISTORY. We may recognize four groups of cases.

First group. Latent tuberculous pericarditis. The disease is discovered accidentally in individuals who have died of other affections, or of chronic pulmonary tuberculosis.

Second group. With symptoms of cardiac insufficiency following the dilatation and hypertrophy consequent upon chronic adhesive pericarditis. The clinical features are really those of cardiac dropsy.

Third group. Acute tuberculosis. The clinical picture may be that of an acute tuberculosis, either general or with cerebro-spinal manifestations.

Fourth group. Cases with symptoms of acute pericarditis. This group, the most important in many respects, includes cases in which the pericarditis is acute and accompanied with more or less exudation of a sero-fibrinous, hemorrhagic, or purulent character.

DIAGNOSIS. The diagnosis of tuberculous pericarditis is extremely uncertain. In the large group of cases in which the membranes are thickened and united, the difficulties are those which pertain to the recognition of adherent pericardium—difficulties which are enormously enhanced by the state of cardiac insufficiency with which these cases usually come under observation for the first time. In children with a history of repeated attacks of rheumatism, the bulging præcordium, systolic retraction at the apex, the fixation of the upper limit of cardiac dullness, and the diastolic rebound, speak for adherent pericardium; and if in a case of this sort there has been no history of rheumatism, and if, on the other hand, there are indications elsewhere of tuberculosis, a probable diagnosis may be made. In the cases which set in as acute pericarditis, unless there are evidences of tuberculosis in other parts, as, for instance, in the left pleura

or in the peritoneum, or there are signs of local disease in the lung and tubercle bacilli have been found in the expectoration, the diagnosis can rarely be made. The effusion may be equally great in tuberculous as in rheumatic pericarditis. If paracentesis be performed, the presence of a bloody exudate is decidedly in favor of tuberculosis; once, at least, tubercle bacilli have been found (Kast). The clinical features themselves offer no criteria, though it would seem probably that in the acute cases with sero-fibrinous exudation the course is more protracted and the fever more irregular than in the ordinary forms of pericarditis; and in such a case the development of diffuse signs in the lungs may lead to a strong suspicion that the process is tuberculous.

TREATMENT. It is not improbable that tuberculosis of the pericardium may, as a similar process in the peritoneum, recover completely. Possibly some of the cases of simple adherent pericardium are instances of healed tuberculosis. The chronic adhesive form persists, in all likelihood, for years, producing few, if any, symptoms until the compensation fails in the hypertrophied and dilated heart.

It is highly probable that a majority of cases which terminate in general synechia of the membranes present no clinical features; the process is slow, insidious, essentially chronic, and not associated with definite symptoms. A case which has set in acutely must be dealt with as any other form of pericarditis, the indications being, first, to limit, if possible, the intensity of the inflammation; and, secondly, to prevent the evil consequences of the presence of a large amount of fluid in the sac. We have no medicinal agents at our command which have any positive influence in controlling the ordinary inflammation of serous membranes. In "Guy's Hospital Reports" of a year or two ago, *apropos* of the treatment of pericarditis, there is a story told of Sir William Gull which is worth quoting in this connection. "He once met a practitioner on a case of rheumatism, in which he detected a pericardial rub. He said nothing of this to the patient's friends, but approved the general treatment, and they came away together. 'Oh, Dr. Gull, it was very good of you not to let them see I had made that dreadful oversight. I cannot think how I can possibly have failed to detect the pericarditis.' 'Never mind,' said Gull, 'it is just as well; for if you had detected it, perhaps you might have treated it.'" There is one measure in the utility of which we may have great confidence, namely, the ice-bag applied continuously over the præcordium. It allays the pain when present, and appears to check the tendency to effusion, while under its use an exudate may be absorbed with rapidity. It is very much to be preferred to blisters or the thermo-cautery. In some instances the patients complain very much of the intensity of the cold of the ice-bag, and in such I was in the habit, in Philadelphia, of using Leiter's coil,

through which the water flowed continuously, and it could be arranged to have any temperature thought necessary.

A second indication holds good in tuberculous, as in other forms of pericarditis. When the effusion reaches a certain grade, and the pulse is irregular and feeble, the color becoming bad, the respirations hurried, paracentesis should be performed, or, if necessary, the sac freely incised and drained.—*Wm. Osler, M.D., in American Journal of the Med. Sciences.*

The Diatetic Treatment of Chronic Nephritis.

M. Dujardin Beaumetz, in speaking of chronic nephritis before the Academy of Medicine, Paris, said "that the quantity of albumen excreted was only a matter of secondary importance. The permeability and eliminatory power of the kidney alone can be taken as a basis for prognosis and treatment."

The treatment, then, will consist in aiding the elimination of the toxines by the supplementary organs, and in reducing by means of intestinal antisepsis and diet the production of these toxines.

To eliminate toxines, the first place he gives to purgatives, then to diuretics and diaphoretics.

To reduce the production of toxines in the intestine benzo-naphthol, which contains neither carbolic nor salicylic acids, is to be preferred to salol as the antiseptic.

To reduce the source of the toxines recourse should be had to a vegetable diet, to the exclusion in general of all forms of meat, game, fish, molluscs, crustaceous and ripe cheese, which during their rapid fermentation produce toxicons. Alcohol should be excluded, since it reduces the eliminatory power of the kidney by its special irritant action on the parenchyma.

A vegetable diet will consist of farinaceous foods, green vegetables, and fruits. To these must be added milk and eggs.

All are agreed as to the value of milk. It is an admirable medication even, and the only one we should employ in grave cases. There is a less unanimous agreement with reference to eggs. It is believed by some that egg-albumen is excreted in the urine in these cases; egg-albumen does not in any particular resemble the serum-albumen found in the urine. Theoretically, it seems entirely inadmissible that cooked and peptonized albumen could be excreted in the urine; and experimentally it has never been ascertained that the ingestion of eggs has ever increased the quantity of albumen.

The farinaceous dietary has lately had added to it several new products; soja from Japan, fromentine, legumine, embryonine, etc. What

value can be placed on these cannot yet be ascertained. It is a question whether or not the peptonization of the nitrogenous principles of these vegetable substances is interfered with on account of the manipulation necessary in their preparation. Rice, according to the observations of M. Hervé-Mangon, is three and a half times more nutritive than potatoes. He then heartily recommends it. He allows all fruits, especially if cooked, and all vegetables, except cabbage; these set up intestinal fermentation. He insists on the danger of meats, but still it seems permissible to him to use the gelatinous forms—calf's head, pig's feet, calf jelly, and very well-cooked meat. Of course the physician will have full latitude to regulate the severity of the diet. A patient threatened with an uræmic attack should be limited exclusively to a milk diet; as his condition improves vegetables, then jellies and extremely well-cooked meats, might be permitted.

Before finishing, he called attention to the marvellous efficacy of this regimen in other affections—arterio-sclerosis, cardio-sclerosis, and gastric and intestinal digestive troubles.

M. Leroy de Méricourt remarked that fish did not seem to him so injurious as it was generally thought to be. In many sections of Newfoundland it is used almost exclusively as food.

M. Dujardin-Beaumetz, in reply, said he agreed thoroughly with M. Leroy Méricourt, when the fish used was as fresh as that used on the banks, but not so when Parisian fish, that contained many toxines, was used. —*Gaz. des Hopitaux* (*Paris*).

Incubation Period of Mumps.

In October, 1887, there was an epidemic of mumps in St. John's Foundation Schools. The first case occurred on October 4th; one occurred on October 18th, or fourteen days after; one on October 19th, or fifteen days after; five on October 20th, or sixteen days after; four on October 21st, or seventeen days after; seven on October 22nd, or eighteen days after; four on the next day; one on the next, and two on the next day, showing that the larger number of failures are about the seventeenth and eighteenth day, while the disease may be developed as early as the fourteenth day, and as late as the twenty-first.—*Arthur Stedman in British Med. Jour.*

Turpentine in Typhoid Fever.

When during the convalescence of typhoid we find local intestinal symptoms persist, indicating a slow healing of the intestinal ulcers, turpentine is a very valuable remedy. Earlier in the disease, when a very dry tongue and marked tympanites exist, it is also indicated. Its action on

the ulcerated surface is a local one. This remedy has been used empirically for over half a century, and recent laboratory experiments show that there is a special relation between the oil of turpentine and the bacillus of typhoid fever. A good formula is oil of turpentine 1 part, glycerin 4 parts, mucilage of acacia 6 parts—peppermint water to make thirty-two parts—a tablespoonful every four hours during the day.—*Therapeutic Gazette.*

Quantitative Determination of the Red and White Blood Corpuscles in Health and Disease.

Daland (*Fortschritte der Medicin*) has recorded the results of observations made at the clinic of Von Jaksch as to the value of the hæmatokrit in the volumetric study of the red and white corpuscles in human blood in health and disease. He found that the best diluting fluid was a two and a half per cent. solution of potassium permanganate. In fifty-five healthy adult males the average volume of red corpuscles, as determined by the hæmatokrit, was 51.6 per cent.; while the average number among seventeen observers, as determined by the hæmocytometer, was 5,130,248. One per cent. of volume is therefore the equivalent of about 100,000 red blood corpuscles. It was shown that, in spite of the most scrupulous care, the results obtained by means of the hæmocytometer in the hands of competent observers were most variable. The two chief sources of error reside in the difficulty of securing an equable dilution and an equable distribution of the blood. For purposes of accuracy, one should prepare not less than two (or, better, four) slides, and count in each the contents of not less than sixty-four squares. The hæmatokrit gives results as accurate as, if not more accurate than, those of the hæmocytometer; while its employment requires less skill, demands less eye-strain, and occupies less time.—*American Journal of the Medical Sciences.*

Cholera and Flies.

The Hamburg correspondent of the *British Medical Journal* states that nine flies that had been in contact with the intestines of persons dead of cholera in the necropsy room at the Eppendorf Hospital were placed in separate flasks containing ordinary nutrient gelatin, and that in six of the nine flasks numerous colonies of comma bacilli were produced.

THERAPEUTICS

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PIPERAZINE (SCHERING), AN URIC-ACID-SOLVENT.

During the last few years various organic bases have been tested in the laboratory of the "Chemische Fabrik auf Actien" (late E. Schering) in Berlin in regard to their power of dissolving uric acid. But there was found to be present in almost every one of them some property which forbade their therapeutic employment. At last piperazine was discovered, and it seemed to fulfil the desired indications. It has no toxic or corroding effect, and may be taken for any length of time without deranging the digestion of any of the vital organs. Its power of dissolving uric acid was found to be greater than anything heretofore observed. A solution of piperazine in cold water will dissolve twelve times as much uric acid as the same quantity of lithium carbonate. In addition to this, the urate of of piperazine was shown to be seven times as soluble in water at a temperature of 63° F. (17° C.) as lithium urate. Then, again, piperazine, when combined with uric acid, never forms an acid, but always a neutral salt, which lithium carbonate does not. And it is soluble in cold water in almost any proportion, while lithium carbonate is not. The composition of piperazine is represented by the formula $C_4H_{10}N_2$.

In experimenting in Schering's laboratory to test the solvent action of the new drug on uric acid, it was found that in a comparatively short time a one per cent. solution of piperazine would completely dissolve a small uric acid calculus; the sharp edges melted away and the surface of the exceedingly hard fragment became slippery very shortly after the first immersion, and in eight hours it was completely dissolved. Other experiments, in which the temperature was always maintained at blood heat, gave similar decisive results.

Following these investigations, the solvent power of piperazine on uric acid while in the human system was made a subject of experiments by a number of French scientists. The results were communicated to the "Société Thérapeutique" by Dr. Vogt. He demonstrated, aside from the fact that piperazine was very well borne by the patients, that the amount of uric acid in the urine decreased, while that of urea increased. Thus it

was shown that in consequence of its alkalinity, or its antiseptic properties, or some chemical action, the oxidation of uric acid into urea was greatly promoted by piperazine. Now it was time to have the clinical test applied to the new remedy. This was done, and the various reports unanimously confirmed the results obtained by the various chemical and physiological tests.

The pathological condition known as nephrolithiasis, gravel in the urine, etc., and gout, are those in which piperazine is superior to every other remedy known so far. Prof. Ebstein, Dr. Bardet, Prof. Schweninger, Dr. Volmer, Dr. Ritter, Dr. Von Herget, and Prof. Zuelzer's assistant, Dr. Heubach, and others, all reported favorably on the power of piperazine to dissolve uric acid, and thereby improve the pathological condition above mentioned in their patients.

In cases of nephrolithiasis the object of the physician is not only to combat the terrible attacks of renal colic, caused by the passage of a calculus through a ureter; he must also bend his energies on curing the primary condition, *i.e.*, the excess and the consequent precipitation of uric acid, and of the salts it forms with the alkaline bases. And here piperazine, given in 15-grain (1.0 gm.) doses daily, is of the greatest benefit.

This the reports of the clinicians above named have confirmed beyond the possibility of a doubt. The amount of uric acid excreted with the urine invariably diminished, while that of urea increased in proportion. And even when given during an attack of renal colic, its specific action was evident from the fact that the calculus passed in one of Dr. Heubach's cases on the third day was "plainly eroded on its surface."

The same observer reports another similar case of a fifty-year-old lady who had for years passed bloody urine loaded with gravel of the uric acid variety. Ten days after the administration of a one-half per cent. piperazine solution, a tablespoonful every two hours, profuse elimination of small, roundish uric acid calculi took place, which continued for several days. And since then the colicky attacks have ceased, likewise the hæmaturia.

It is a fact established by the experiments of Dr. Holtz, viz., that piperazine displays its solvent properties not only on concretions consisting of uric acid exclusively, but also on urinary calculi composed of a combination of uric acid, calcium phosphate, ammonium urate, etc. All sorts of concretions of this description dissolved readily and completely in a one per cent. solution of piperazine within a relatively short time. In a few cases nothing was left of these stones but light, honeycombed skeletons, consisting of hardened cementing mucus. Here also it was especially noticed that the sharp edges of the calculi melted away very rapidly, and became smooth and roundish. The clinical importance of this fact is readily

understood, for the pain caused by these calculi in the kidneys, and, above all, during their passage through the ureters, depends, aside from their size, principally on the sharpness and roughness of the individual particles.

From this it is evident that piperazine is far superior to any drug of which we know in these affections. It is even far superior to morphine and atropine; for while the latter acts only on the propulsive, peristaltic action of the ureter, and the former only allays the pain for the time being, the action of piperazine is directed on the removal of the cause itself, smoothing off the edges and reducing the size of the calculus by its solvent effect.

Another bright chapter in regard to the therapeutic action of piperazine is its efficacy in the treatment of gout. In this disease it has been used with great advantage locally, as well as internally.

Next to Dr. Biesentnal, who treated forty-seven cases of gout with piperazine, Prof. Schweninger has reported the largest number of cases of this disease, viz., 150.

Most of his patients had been suffering for a long time, and had undergone various forms of treatment, without avail, before they came under his care. Of these 150 cases, almost all of them severe ones, Prof. Schweninger claims to have had an unexpectedly favorable success in over ninety per cent. with the piperazine treatment. His opinion is that this is entirely due to the unequalled solvent action of the new drug on uric acid and its salts, the formation of which in excess and their deposition in various tissues of the body constitute the essential feature of this disease. The great solubility of piperazine in water and the ready absorption of it by the stomach are, according to Prof. Schweninger, the two great primary advantages. Another is its absolute harmlessness, since it is free from any disagreeable secondary or accompanying effects. The quick and easy manner in which it dissolves the deposits of urates and enables the blood and lymph stream to carry them away is the last and most important action of piperazine. Thus it is that not only the rapid excretion of uric acid takes place constantly, but the secondary inflammatory and necrotic processes caused by the gouty deposits in the tissues implicated are cut short, and to a certain extent prevented, since the new formation of the urates is prohibited.

Prof. Schweninger employs the drug internally as well as subcutaneously in doses of from fifteen to thirty grains (1.0 to 2.0 gms.) in the twenty-four hours. His results were always good, certainly better than with those he formerly employed, *e.g.*, lithium, the alkalies, colchicum, etc.

He never observed any injurious effects from the piperazine; the mucous membranes as well as the tissues in which he injected the drug were never injuriously affected thereby. After the subsidence of the acute gouty attack, the patient was ordered to take from eight to fifteen grains

(0.5 to 1.0 gm.) every third day for months, in the same manner that lithium had been employed hitherto.

The hypodermic injections were given in the strength of 1/3 grain to fifteen minims (0.1 to 1.0 gm.) of water. They were usually given in the neighborhood of the affected joints, and their effect was a very gratifying one: the swelling and the pain subsided, and the gouty deposits were partially dissolved and greatly reduced in size. Prof. Schweninger even reports miraculous results in cases with large stone-like deposits of gouty material about the elbow joints, in the eyelids, and in the pinnæ. In these cases two or three injections were given in the neighborhood of the swelling, and at the same time piperazine was administered in daily doses of from eight to thirty grains (0.5 to 2.0 gms.). Dr. Bardet and others have also used piperazine hypodermatically in the same manner, with similar excellent results.

Dr. Swinford Edwards, in his inaugural address as president of the London Medical and Surgical Society, read at its last anniversary, referred to the progress made in the treatment of diseases of the urinary organs during the last eleven years. After speaking of various therapeutical agents, he referred to piperazine in the following manner:

"As a solvent for uric acid, urates, and also for phosphates in certain cases, I know nothing equal to piperazine."

A great advantage of piperazine is to be found in the fact that even when it is used for long periods of time it does not change the reaction of the urine from acid to alkaline. There is, therefore, no possibility of the precipitation of the earthy phosphates, which would tend to foster the formation of calculi by depositing a secondary layer on the uric acid concretions not yet entirely removed.

In conclusion, some points may be stated in regard to the administration of the new remedy:

(1) Piperazine occurs in crystalline form, but it is a hygroscopic body, and will deliquesce on exposure to the air; hence

(2) Piperazine must never be dispensed in powder form, pills, tablets, capsules, or any other similar form.

(3) Piperazine is supplied by the manufacturer in vials containing five grammes (75 grains), or sufficient for five days' dosage; therefore it is practical, economical, and preferable that

(4) Piperazine should be prescribed thus:

℞. Piperazine pur. (Schering).....grm. v.

Solve in Aquae.....℥ v.

Sig. Dissolve one-fifth of this solution, *i.e.*, two tablespoonfuls, each day in one pint or one quart of water, keep the solution in a warm place (neither hot nor cold), and drink the full quantity during the day in convenient doses to quench the thirst.—*Trans. Berl. Med. Woch.*

The Treatment of Insomnia.

Dr. Joseph Collins, of New York, in an interesting article on insomnia, published in the *Journal of Nervous and Mental Disease*, contrasts the action of chloralamid and sulphonal in the treatment of insomnia, and arrives at the following conclusions:

(1) Chloralamid is a safe and one of the most reliable hypnotics.

(2) It is not ordinarily followed by distressing after-symptoms, particularly headache.

(3) It is especially valuable as a hypnotic where pain is a prominent factor, but not violent.

(4) In cases of insomnia, where there is excessive activity of the brain, it is also useful.

(5) On account of its stimulating activity on the respiratory function, it is the hypnotic *par excellence* in nervous exhaustion associated with an asthenic condition of respiration and symptom complex indirectly dependent on this, brought about by defective oxidation and the formation of unstable chemical compounds in the system.

(6) On account of its very slight action in depressing the circulation, it can be given in diseases associated with a weak heart with greater safety than most of the other hypnotics, not excepting chloral itself.

(7) It is conveniently administered in the shape of an elixir, and this overcomes the need of dissolving it.

(8) Its dose is from one to three scruples, administered one hour before sleep is desired, and this should not be repeated within two hours, for occasionally the action of the drug is delayed.

Sulphonal is preferred when we wish to get very rapid action. It should be given dissolved in boiling water, taken as hot as possible. In this way it is at once absorbed, sleep frequently occurring in from fifteen to twenty minutes. The disadvantages of sulphonal are that the patient is liable to form the sulphonal habit, and that its effects last through part of the following day.—*Western Med. Rep.*

Filtered or Boiled Water?

M. A. J. Martin, under this title, presents a very carefully studied paper. Recognizing the fact that many filters, so far from separating the bacteria, may even make the water richer in these organisms, this method cannot be recommended. Boiled water has lost its carbonic acid gas, and the salts of lime and magnesia are precipitated; the taste is flat, although on standing in a cool place it reabsorbs the greater portion of the lost gas. Even boiled water ought not to be long preserved. The problem, apparently, was solved in heating the water without loss of air, cooling it

mechanically, and adding oxygen by means of an air-pump, or it can be boiled in closed bottles. Various ingenious apparatus has been devised for boiling water in closed vessels under pressure, and cooling it in the same apparatus. Investigations have shown that the slight differences observed in the chemical composition of the water before and after sterilization have not altered its potability. With a filter, one can drink only the water of which he knows the source; with boiling, one can use any water. Boiling, then, should be the procedure of choice as soon as any suspicion arises; it should be the rule, especially in large cities, during the progress of any epidemic.—*Gazette hebdomadaire de Médecine et de Chirurgie.—American Journal of the Medical Sciences.*

The Use of Strychnine and Digitalis in Diarrhœa.

In fevers of a remittent character, the complication of persistent diarrhœa occurred frequently, and at periods when the patient was worn out by fever, and the digestive powers were rapidly failing, I determined to use these drugs to combat certain symptoms. In these cases the temperature ranges from 1° to 2½° above normal, the pulse is soft and yielding, not very rapid, and markedly wanting in tone; the motions, four or five daily, increase in number until nourishment appears to excite an action of the bowels, marked by even a greater tendency to fluidity, the extreme being reached when the motions escaped involuntarily, and is followed by a tendency to cardiac failure, if not collapse, frequently accompanied by a consciousness of approaching dissolution in the patient. Digitalis was chosen for these cases because of its well-known general action upon the vaso-motor system; strychnine for its less known more direct action upon that portion of the system concerned in the control of the blood supply to the intestines. The mixture employed was tr. digitalis, *miv*; liq. strychniæ, *mij*; spts. chloroformi, *mv*; in water, and repeated at from one to four hourly intervals.—*Mr. Harold Hendley in The Practitioner.*

Substances Incompatible with Antipyrine.

The following substances precipitate antipyrine from its aqueous solutions:

(1) Concentrated solutions of carbolic acid.

(2) Tannin, and preparations containing tannin.

(3) Tincture of iodine.

(4) The chlorides of mercury.

The following substances, when triturated with dry antipyrine, decompose it:

(1) Calomel, which forms a toxic compound with antipyrine.

(2) Beta-naphthol.

(3) Choral hydrate, which forms an oleaginous liquid with.

(4) Sodii bicarbonas, which when brought in contact with it sets free an odor of acetic ether.

(5) Salicylate of soda, which also forms an oleaginous compound with it.

(6) The salts of quinine and caffeine, which have their solubility increased by antipyrine.—*Gaz. des Hopitaux.*

The Hypodermatic Injection of Iodoformized Guaiacol in Pulmonary Tuberculosis.

Drs. R. Massalongo and S. Silvestri believe that with a combination of these well-tried and approved remedies (1 part iodoform, 5 parts guaiacol, to 100 of sterilized oil of sweet almonds) injected into the scapulo-vertebral space, or, better, into the supra-spinous fossa, they obtained satisfactory results in eight reported cases. They conclude that it is especially indicated in the first, second, and rarely in the third stages; that the cough, expectoration, number of bacilli, fever, night-sweating, appetite, weight, and general appearance are improved; that these results are justified by the physiological properties, antiseptic, astringent, and modifying, of these drugs; that no other pharmaceutical curative method has yielded so satisfactory results.—*Gazetta degli Ospitali.—American Journal of the Medical Sciences.*

Cimicifuga in Uterine Disorders.

Dr. Boardman Reed (*American Therapist*, July, 1892) recommends the exhibition of five to twenty drops of the tincture several times a day in scanty menstruation, especially in maiden ladies. Small doses, one drop every one or two hours, will often promptly relieve frontal headache due to mental fatigue, or any kind of headache resulting from pelvic congestion. Two or three drops of the tinctures of cimicifuga and gelsemium, every hour or two, are among the most certain means of bringing on the menstrual flow when delayed by passive congestion, cold, grief, or other similar cause, and have a similar action on the lochial discharge after parturition.—*Internat. Med. Mag.*

Amorphous and Crystalline Aconitines.

Eugéne Cassariny has come to the following conclusions after a study of the different forms of aconitine:

(1) The crystalline aconitines of Duquesnel and of Mialhe, the amor-

phous and crystalline ones of Merck and of Tromsdorff all reacted about the same to the reagents used.

(2) The toxic action of amorphous forms is very variable; that of the above-named crystalline forms is about equal in all.

(3) All forms of amorphous aconitines should be avoided, they being so unreliable and dangerous.

(4) Crystalline aconitines should be administered as the nitrate, in granules only, and in doses of not more than $\frac{1}{10}$ milligram, one every two hours.—*Gaz. des Hopitaux.*

OBSTETRICS AND GYNECOLOGY

IN CHARGE OF

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The Tampon in Menorrhagia.

Is the tampon a childish expedient in recurrent profuse hemorrhages at the menstrual epoch? In certain cases its uses has been recommended by Gehrung, by Mays, and by Reeves Jackson. Still, with the profession at large, respect for menstruation as a physiological function has a dominant influence in determining treatment.

I am prepared to admit in advance that, as a rule, menorrhagia is the result of pathological conditions, viz., of inflammatory thickening of the endometrium, with increased vascularity and polypoid growths, and of enlargement of the uterine cavity, with consequent increase of the bleeding surface. The changes in the endometrium may be due to a primary inflammation, or may be secondary to displacements, to neoplasms, to obstructions of the cervical canal, to connective-tissue changes in the uterine walls, to imperfect involution, and to retention of portions of the ovum following abortions or childbirth. In all these, and in similar instances, a rational therapeusis should unquestionably be directed to the source and origin of the evil.

But there still remain cases in which no definable cause is recognizable. The curette, uterine drainage, and internal remedies fail to afford relief. The recovery of the patient between the menstrual periods becomes

more and more incomplete, and the conditions resulting from profound anæmia lead to hopeless invalidism. In such cases the question is often broached as to whether the ovaries had not best be removed. "Normal ovariotomy" is practically devoid of danger. If the removal of the tubes and ovaries is complete, the hemorrhage will cease. The relief of suffering following the removal of incurable pus tubes is one of the most brilliant achievements of modern gynecology, and is cheaply purchased by the sacrifice of the ovaries. But in the class of cases under consideration, especially if the patient be young, the loss of the ovaries has not seemed to me to be a matter of indifference. The medical men to whose care these patients ultimately fall will bear me witness that many of them subsequently display symptoms of mental and moral perversity, and that all dislike the thought that they are "different from other women."

For this reason I have been led, when other lines of treatment have proved ineffective, to resort in anæmic patients to the tampon as a means of restraint or repression at the menstrual period. By this plan opportunity is afforded for the continuous repair of the blood, and for the restoration of disordered function. At first it was with a feeling of timidity that I ventured to employ the tampon upon the first evidences of menstruation, but experience speedily showed that the practically complete repression of the menstrual flow is absolutely harmless.

However elementary it may seem, it may be well to state that the method of tamponing is not a matter of indifference. At least, personally, I have only got satisfactory results when following the procedure of the late Dr. Marion Sims. He advised, as material for a tampon, wads of cotton of suitable size soaked in carbolized water, and compressed into the form of flattened disks. These, by means of a Sims' speculum, should be applied firmly to the vault of the vagina. It is important that they should be placed with the flattened surface in a transverse direction, rather than in one parallel to the vagina, and that the packing should be arrested at the urethro-vaginal septum. At the end of twenty-four hours the tampon should be removed, the vagina should be irrigated, and a fresh tampon should be introduced. When thus employed for forty-eight hours, the flow is usually ended. In rarer cases a third application of the tampon may be called for.

It is interesting to watch, as the result of this plan, the restoration of the patient to health. In time, likewise, the normal tonus of muscular structure of the uterus is restored, and the further use of the tampon ceases to be necessary.

As an illustration of the beneficial workings of the tampon, I select the following instance:

Mrs. F., aged thirty-six years. In girlhood had obstructive dysmen-

orrhœa, associated with retroflexion and stenosis of the cervical canal, for which she received treatment from the late Dr. Elwood Wilson. At nineteen she married; she had two miscarriages in the first year of her married life; afterward she gave birth to three children at term. During gestation she always experienced a peculiar exhilaration and sense of *bien aise*. With the weaning of her children, which was usually delayed until the second year, the menstrual flow returned, and was characterized by great profuseness. For this the usual remedies, internal and local, were employed, including ergot, viburnum, hydrastis, tannin, cannabis indica, curetting, and applications of iodine to the mucous membrane. All were of no avail. There were no fungous growths obtained by the repeated scrapings. After the birth of the third child, I repaired a laceration of the cervix of moderate extent.

The menstrual period lasted from five to six days. For ten days following, the patient was compelled by dizziness to remain in bed or upon a couch in the recumbent posture. Gradually a neurasthenic condition developed, characterized by insomnia, multiform neuralgias, palpitations of the heart, and hysterical twitchings. For two years, owing to flatulent dyspepsia, she lived exclusively on a meat diet. Finally she withdrew altogether from society, and devoted her entire time to a contemplation of her symptoms. Her weight fell from 140 to 97 pounds.

From the time of the performance of Emmet's operation, in 1889, she lost faith in medical aid, and was guided in her treatment, for the most part, by the volunteer counsel of non professional friends. Her husband discussed her case with an eminent gynecologist, who advised removal of the ovaries; but the proposition was promptly and indignantly rejected by the patient, whose maternal instincts were strong.

In January last, when I called to visit one of the children, I was shown by her husband the contents of a chamber, which contained fully a pint of pure blood. Similar losses, he assured me, were the rule at her menstrual periods. I at once introduced a tampon and checked the bleeding. The tampon was removed upon the two succeeding days, when the flow ended.

Acting upon the theory that the primary cause of the trouble had been protracted lactation, and that its persistence was due, not to any organic disease, but to the relaxed condition of the uterine muscular fibre, I administered iron and food, the latter at first in small quantities at short intervals, and, afterward, as her digestion improved, I persuaded her, though with many misgivings on her part, to adopt a mixed diet. Since January, with the return of each period, I have employed the tampon for two days. The patient has gained twenty-two pounds. Sleep, appetite, strength, and color have returned. All her morbid fancies have disappeared. She is one of the happiest women in my *clientèle*, and never

ceases to rejoice that she still possesses her ovaries, and that she has not been robbed of the hope of some day again becoming a mother.— *William T. Lusk, M.D., in Amer. Journ. of the Med. Sciences.*

The Ideal Dressing for the Abdominal Wound.

One of my earliest efforts in abdominal surgery was to improve the dressing of the wound in the abdominal wall. The dressings then and now in use consisted of layers of cotton, sterilized or impregnated with antiseptic solutions, or alternating layers of various impermeable or antiseptic substances. The whole purpose of such a method clearly depends upon preventing access of pathogenic germs to the wound by heaping up impassable barriers on the patient's belly. To the practical eye noting the impossibility of affording adequate protection of this sort around the mons veneris and the creases of the thigh, where septic matter is most prone to enter, the inconsistencies are but too evident; for every movement of the patient which slides the dressings a little on the body and tends to displace them, as well as the necessary attentions to the genitals on the part of the nurse, each time open this avenue of infection. Convinced of these facts, I abandoned this form of dressing and adopted a variety of dry and moist dressings, all the time casting about in my mind to determine just what was needed to establish an ideal dressing.

The ideal dressing would seem to be a solution or paste which would quickly harden until it formed a thin, flexible, impenetrable layer over the wound and the surrounding skin, which would be thus hermetically sealed; in this way absolutely preventing any invasion of the wound from the outside, and preserving the aseptic conditions established at the operation. It would also be desirable, if possible, to add to these qualities the property of transparency, allowing the line of the wound and the stitches to remain under constant observation, noting changes without disturbing the dressing. A dressing possessing such qualifications may certainly be named ideal.

My researches have been in large measure rewarded; for, although unable to secure a transparent dressing unaffected by cotton or other protective in contact with it, I have found, and for two years past used, a dressing which hermetically seals the wound in a thin layer, with certainty preventing the invasion of pathogenic organisms from without. This dressing is easily made, simple, and always satisfactory. After closure of the incision, the skin, the line of the wound, and the sutures are dried, and two layers of sterilized gauze or cheese-cloth, large enough to project five to ten centimetres (two to four inches) beyond the incision on all sides, laid on the skin. This is saturated with the following adhesive mixture, which is evenly distributed over the whole surface :

℞. Squibb's Ether, or Washed Ether, and Alcohol, absolute.....equal parts
Bichloride of Mercury (Merck's recryst.).....
enough to make the solution.....$\frac{1}{10000}$
[Anthony's] snowy cotton.....
enough to make a syrupy consistence,
added in small pieces, stirring.

As soon as this is poured over the wound evaporation begins to take place at once, and the celluloidin hardens, gumming the gauze fast to the skin. To avoid delay in waiting for this to grow quite hard, and to prevent adhesion to the cotton applied above it, the whole surface is freely dusted over with a finely powdered mixture of iodoform and boric acid.

℞. Pulvis Iodoformi..... 4 grammes, or 1 drachm.
Acidi Borici..... 28 grammes, or 7 drachms.
M. exactissime.....S. Dust freely on wound.

This powder is of itself an invaluable protective. I use it constantly in obstetric cases, separating the labia and throwing it into the vagina, where it acts as a guard to the vaginal outlet against septic invasion from without.

The wound thus sealed with celluloidin gauze may be left untouched for a week or more, when the dressing should be softened with water, or more rapidly with ether, the gauze lifted off, and the stitches taken out.

If there are any signs of suppuration, as evinced by pain, local tenderness, and redness, associated with elevated temperature, the dressing should be removed earlier and the discharge of the stitch-hole abscess promoted in the usual way.

The purpose of cotton heaped up on the abdomen is now no longer protective and antiseptic; it merely serves the purpose of padding out the inequalities for the application of the bandage. Common cotton may be substituted for absorbent and prepared cotton by simply sterilizing it in the Arnold steam-sterilizer.—*Howard A. Kelly, M.D., in The Amer. Journ. of Obstet.*

THE DECIDUA IN THE DIAGNOSIS OF EXTRA-UTERINE PREGNANCY.

Ayers (*Amer. Jour. of Obstetrics*, 1892, No. 3), from microscopical studies of the normal and diseased endometrium, reaches these conclusions: In cases of ectopic gestation, the endometrium is usually transformed into decidua. This decidual tissue is pathognomic of pregnancy. It may be removed with the curette for examination under the microscope, which, however, merely reveals the presence of the characteristic cells. The clinical history will then determine whether the condition is intra- or extra-uterine pregnancy.—*American Journal of the Medical Sciences.*

SURGERY

IN CHARGE OF

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The Palliative Treatment of Anal Fissure, or Irritable Ulcer of the Rectum.

At a meeting of the Philadelphia County Medical Society, held on November 23rd, Dr. Lewis H. Adler, jr., read a paper, the first portion of which, relating to the palliative treatment, was as follows:

There are some general rules that must always form a part of the treatment of anal fissure—to wit, to lessen as much as possible any inordinate action or distension of the bowel, and to prevent the ulcerated surface being irritated and abraded by the passage of hardened fæces.

To fulfil these indications enemata or mild aperients should be employed, and the diet must be regulated, the use of bland and unirritating foods being enjoined.

It is not possible to point out a diet that would be even generally applicable, as so much must depend upon the state of the constitution and the previous habits of the patient; but in general it should be moderate in quantity, yet sufficiently nutritious—what the stomach can digest with ease, and which has no tendency to produce constipation.

The patient should be directed to take moderate exercise; and, if the bowels are disposed to be costive, a daily evacuation should be secured by the administration of an enema of warm water, or one of rich flaxseed tea—say, from half a pint to a pint, to be given every evening, preference being given to the night-time, as the patient can then assume the recumbent posture, which, combined with the rest, affords the greatest protection from subsequent pain.

Instead of the enema, or in conjunction with its use, the action of the bowels may be regulated by the employment of some mild aperient, such as the patient has found by experience to agree with him.

All drastic purges should be avoided, as they are more or less stimulating and irritating to the extremity of the rectum.

The pain and spasm of the sphincter muscles attending the evacuation of the bowels is best relieved by the use of a suppository consisting of:

℞.—Ext. belladonnæ.....gr. $\frac{1}{8}$ to $\frac{1}{2}$
Cocain. hydrochlor.....gr. $\frac{1}{4}$ to $\frac{1}{2}$
Ol. theobromæ.....gr. x.
Misce et ft. suppositorium j.

One suppository to be employed about half an hour before the enema is given or a movement of the bowel expected.

Instead of the suppository, an ointment of extract of conium may be used, as recommended by Mr. Harrison Cripps: *

℞.—Ext. conii ..... ʒij.
Olei ricini ..... fʒiij.
Ung. lanolini ..... q.s. ad ʒij. M.

A small quantity of this ointment should be smeared over the parts five minutes before a passage, and again after it has occurred.

The various methods of treating anal fissure may be divided into the palliative and the operative.

Palliative treatment will meet with success in cases in which the fissure is tolerably superficial and of somewhat recent origin, especially when there is no great hypertrophy of the sphincter muscles.

Allingham† states that the curability of the lesion does not depend upon the length of time that it has existed, but rather upon the pathological changes it has wrought. This same authority states that he has cured fissure of months' standing by means of local applications when the ulcers were uncomplicated with polypi or hemorrhoids, and when there was not marked spasm or thickening of the sphincters.

It is essential to the success of the treatment of fissure, especially by local applications, that rigid cleanliness of the parts be maintained; for this purpose the anus and the adjacent portions of the body should be carefully sponged night and morning, and after each stool with hot or cold water, the temperature being regulated to suit the patient's comfort.

In applying the various local remedies, it is necessary first to expose the ulcer to view, and to anæsthetize its surface with a four or eight per cent. solution of cocaine hydrochloride, well brushed in with a camel's-hair pencil.

The application may have to be repeated once or twice, at intervals of about five minutes, in order to obtain the desired anæsthetic effect.

If any ointment has been used about the fissure, the anus should be subjected to a hot-water douche before using the cocaine, as cocaine will not exert its anæsthetic influence on a greasy surface.‡

Among the different remedies that have been used in the local treatment of fissure of the anus may be mentioned the following: Nitrate of silver, acid nitrate of mercury, fuming nitric acid, carbolic acid, sulphate of copper, the actual cautery, and chloral hydrate.

*_Diseases of the Rectum and Anus_, second edition, London, 1890, p. 189.

†_Diseases of the Rectum_, fifth edition, London, 1888, p. 215.

‡W. P. Agnew, M.D., _Diagnosis and Treatment of Hemorrhoids_, etc., second edition, San Francisco, Cal., 1891, p. 91.

Of these topical applications the nitrate of silver is the best. Its effects are various; it lessens or entirely calms the nervous irritation, which is so important a factor in producing spasmodic contraction of the sphincters; it coats and shields the raw and exposed mucous surface by forming an insoluble albuminate of silver; it destroys the hard and callous edges of the ulcer, and tends to remove the diseased and morbid action of the parts.

The form in which this salt is usually employed is in solution (from ten to thirty grains to the ounce). The stick caustic may be also used.

To accomplish the best results, the solution should be used once in twenty-four or forty-eight hours, according to circumstances. It may be applied by means of cotton attached to a silver probe or to a piece of wood.

The application is made by separating the margins of the anal orifice with the thumb and index finger of the left hand, and introducing into the anus the probe charged with the solution. The argentic nitrate is to be applied to the fissure only; a few drops are all that is required. If thorough local anæsthesia has been induced by the use of cocaine, the application of the silver salt produces little, if any, suffering; for by the time the anæsthetic has lost its effect, the otherwise acute pain of the nitrate of silver will have passed away.

After each application the part should be smeared well with an ointment of iodoform (thirty grains to the ounce). The odor of that drug may be disguised by the addition of a few drops of attar of roses. Iodol may be used instead and in the same way, but I prefer the iodoform, owing to its anæsthetic qualities. After the ulcer has been touched once or twice with the silver solution the effect will be, in the cases that are benefited by this treatment, a considerable mitigation of the pain from which the patient suffered when at the closet and afterward, and the sore will present a healthy, granulating appearance, and will slowly contract in size.

Some authorities speak highly of the use of acid nitrate of mercury, fuming nitric acid, carbolic acid, the actual cautery, etc., but their employment, with the single exception of carbolic acid, is attended with more suffering than follows the use of the nitrate of silver or the simple operative treatment presently to be described. Furthermore, the application of these remedies is not so certain to effect a cure as either of the two procedures just mentioned.

The daily introduction of a full-sized bougie made of wax or tallow will sometimes act beneficially in cases of fissure by strengthening the sphincter and producing such an amount of irritation as will set up a healing process in the ulcer. An application of cocaine or of belladonna ointment should be made to the part previously to the employment of the bougie.

In children and young persons, unless a polypus or a polypoid growth, or a congenital contraction, complicates the fissure, it is almost always curable without operation. In children suffering from hereditary syphilis, numerous small cracks around the anus are common, and they cause much pain. Mercurial applications and extreme cleanliness soon cure them, but they will return from time to time unless anti-syphilitic medicines be taken for a lengthened period.*—*N. Y. Med. Jour.*

Further Report on Aseptic and Septic Surgical Cases, with Special Reference to Infection of the Skin.

Lockwood, in the *British Medical Journal*, May 28th, 1892, continues the report which appeared in the issue of the same journal of October 25th, 1890. Inoculations on culture media have been continued. A few wounds have remained sterile; these cases are cited. As a rule, however, microbes could be demonstrated. Bloch, in a series of forty-six cases, secured aseptic wounds in but two instances. Halstead has also demonstrated pyogenic organisms in wounds after operations performed in the most careful manner.

Lockwood says: "There is no plan which can allow the so-called harmless microbes to enter a wound and at the same time keep out the harmful. Nor can we rely upon the vital resistance, phagocytic power, or microbe-destroying properties of the fluids and tissues of the body. They are faculties beyond control, while asepticism is not."

The skin also harbors the staphylococcus aureus and albus, as well as others which are pathogenic for man. Aseptic surgery must therefore look for advancement to a more thorough means of disinfecting the skin, and to this object many surgeons are now directing their attention.

In the first place, when proper care is exercised in preparing the materials used in the performance of the operation, the sourses of infection can be narrowed down to (*a*) the hands of the operator and of his assistants, and (*b*) the skin of the patient. The atmosphere is not a danger. The culture-tubes have been left open for hours in operating theatres and rooms, and they have not become infected; and gelatin spread out in dishes has had the same immunity. But any danger of infection from the atmosphere has been provided for by filling the wounds with perchloride of mercury lotion, 1 in 2000, squeezed from a sponge, or, in large and deep wounds, discharged from an irrigator.

It is quite otherwise as regards the skin of the surgeon's hands and arms. A great deal has been written about the sterilization of the hands and of the skin, but it is evident that the usual precautions are not sufficient.

*Allingham. *Op. cit.*, p. 213.

In a case of removal of a chronic mammary tumor, although the skin had been washed and scrubbed until the woman complained, had been washed in 5 per cent. carbolic solution, covered for eighteen hours with an antiseptic dressing, and finally washed, just before the operation, with perchloride of mercury lotion, 1 in 1000, nevertheless a bit of this skin infected culture-tubes with cocci, streptococci, diplococci, and bacilli such as are usually found in the skin. The reason for this failure to disinfect the skin was shown in the following way:

A cover-glass preparation of the contents of a sebaceous gland stained with fuchsin shows that sebum is a mass of cocci, diplococci, and bacilli, together with occasional epithelial cells. After an area which has numerous sebaceous glands had been washed with soap and water, then with perchloride of mercury lotion, 1 in 1000, and lastly with absolute alcohol, its glands were squeezed and cultures inoculated from its surface. The result was a plentiful growth of long and short bacilli, leptothrix, monococci, diplococci, and staphylococci. In a similar way the properties of the sweat glands were shown. A perspiring surface was washed with soap and water, then with perchloride of mercury lotion, 1 in 1000, and afterward with absolute alcohol. As soon as the sweat reappeared, nutrient material was inoculated with it, and grew quantities of staphylococci, and in old cultures some bacilli and leptothrix. Thus there was a slight difference in the first results of these experiments. Sweat glands gave a growth of cocci with few bacilli, whilst sebaceous glands gave bacilli with few cocci.

It was found that when a fluid composed of skin scrapings suspended in normal saline solution was injected into the auricular veins of rabbits, some died at once—killed, perhaps, by the coarse particles; others died some days or weeks afterward. A strong, healthy animal wasted and died twelve days after the injection. It had diarrhœa, and its cage was constantly wet. In another the symptoms were the same, but there was also suppuration at the seat of inoculation, and a considerable inflammatory œdema of its neck. After it had been killed, infarcts were found in its kidneys, and there were areas of pleuro-pneumonia in the lungs. In another animal the kidneys seemed to have escaped, but the lungs contained many infarcts.

These effects might possibly have been caused by the particles of epidermis, and therefore the experiments were repeated with gelatin cultures which had been inoculated with the same kind of fluid—namely, normal saline solution mixed with skin scrapings. The gelatin was rapidly liquefied, and contained a great many kinds of microbes—cocci of various sizes, diplococci, staphylococci, chains of from four to twelve cocci, some consisting of large, others of small elements, numbers of very small, short

bacilli aggregated into small groups, a larger spore-containing bacillus with rounded ends, and leptothrix. This fluid seemed more virulent than a mere solution of skin scrapings. An intra-venous inoculation of from five to ten drops soon made the rabbits ill; they ceased to feed and became emaciated, and their cages were constantly wet. The lungs were the organs most attacked, and in the early stages were engorged and inflamed, especially at their periphery.

Thus the skin contains microbes which are pathogenic for mice and rabbits. But it also constantly harbors staphylococcus aureus and staphylococcus albus, which are pathogenic for man, and Eisenberg gives a list of others which, if less known, are equally dangerous.—*American Journal of the Medical Sciences.*

Chancre of the Left Eyelid.

W. Goldenberg presented to the Society of German Physicians in New York a case of ulcus durum which had been under observation for three weeks. The patient sought medical relief from a painful swelling of the left eyelid. On examination of the lower eyelid a well defined superficial ulcer on the border of the skin and mucous membrane, about the size of a ten-cent piece, was found. Swelling of the preauricular and submaxilliary glands, also a maculæ-papular enytin were also present. The source of infection was probably a towel. The patient was a waiter in a hotel where 150 waiters are employed, who were all using the same towels. G. calls to notice that swelling of the preauricular and sub-maxilliary glands are always present in chancre of the eyelids.—*Pacific Med. Jour.*

Intubation of Larynx.

Dr. Egidi has done intubation of the larynx for croup 60 times. Four of these were in children of one year or under, 28 in children of from one to three years, 24 in children of from three to six years of age. If 2 deaths that took place just at the moment of operation be deducted, he had 11 cures for 47 deaths—that is, 19 per cent. He says: "The operation was generally easy; the tube was expelled but once; feeding was done without much trouble."

Taking all things into consideration, the results are not better than those of tracheotomy. They are even less favorable.—*Prog. Médical.*

Hemorrhage after Tonsillotomy.

Dr. Buisseret, of Brussels, contends (*Rev. de Lar., d'Otol.*, etc., No. 22) that hemorrhage a few hours after the operation is favored by the

previous application of cocaine, which he attributes to vascular dilatation succeeding the immediate constriction produced by the topical use of the drug.—*American Journal of the Medical Sciences.*

Perforating Ulcers of Foot.

M. Tuffier showed before the Surgical Society of Paris a patient on whom he had done a double Chopart amputation for perforating ulcer of the foot. The patient walks well.—*Gaz. des Hopitaux.*

GENITO-URINARY AND RECTAL SURGERY

IN CHARGE OF
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Pus in Urine—How to Discover its Source.

At a recent meeting of the New York Academy of Medicine, Dr. Keyes opened the discussion on the above topic. He said that the question could be discussed in a general way. He would assume in these general discussions that no knowledge of the cystoscope or the endoscope was necessary, and only a very slight knowledge of microscopy. It is a fact that a great many physicians are not at all acquainted with what pus is. Pus is not the healthy mucous cloud that always collects in the urine; it is not an excess of that mucus; it is not bacteria; it is not phosphates. Pus in the urine is in the form of a granular deposit, dirty white or pinkish in color, or it may have a stringy appearance which is called by some stringy mucus. There is no such thing as stringy mucus. The stringy form of pus indicates that some portion of the genito-urinary tract is in a condition of abrasion or ulceration, and that there is decomposition of urine, and with the pus mucus is present. It means catarrh of some portion of the genito-urinary tract. These shreds that occur in the urine are practically of three kinds; the linear, the tad-pole shred, and the fleecy, cotton-like thread. The linear shred, as a rule, may be presumed to come from the anterior urethra. The origin of the tad pole shreds is limited to no particular area; they come from a little follicular abscess, or from a granular or excoriated spot in the membranous urethra. The fleecy, cotton-like shred is generally from the prostatic sinus; if spermatozoa are present, it is more than presumptive evidence. When the pus exudes from the meatus, it is almost conclusive evidence that the trouble lies anterior to the bulbo-membrane

junction, although occasionally its source is posterior to that, especially if there has been sexual excitement. In spermatorrhea and posterior urethritis a little comes out at the meatus, but a free flow of pus usually indicates that the anterior urethra is in trouble. If the question is in doubt, you can clear it up by irrigating the anterior urethra with a solution of salicylic acid and then putting in an ordinary bulbous sound, as big as will go down to the junction, and leaving it there for thirty seconds or a minute. On withdrawing the sound, if the pus has come from the anterior urethra, there will be on the shoulder of the bulb of your instrument a little soft scab, perhaps tinged with blood. In posterior urethral pus, there is no better expedient than first washing out the anterior urethra, and then making your patient urinate in two parts. Practically, the pus will be found in the first specimen, while the rest will be reasonably clear. If you suspect that the pus originates in a prostatic abscess or the seminal vesicles, you may be able to settle this by making your patient pass his water in three parts; first let him pass about one-third; then put your finger into his rectum and press upon the seminal vesicle or the prostatic abscess, if you can appreciate it; by milking the focus of suppuration in this way, you will find the discharge of pus in the second flow of urine. The third flow will be comparatively clear.

The great trouble is to distinguish between bladder pus and kidney pus. The characteristics of the two, however, are very different. If the pus has its source in the kidney, it is not flocculent; it is cheesy and heavy, and does not float around like pus from the bladder. It settles down to the bottom of the vessel. Bladder pus, on the other hand, is stringy in appearance. Urine containing bladder pus will quickly decompose; when passed it is frequently ammoniacal or neutral. In pyelitis the pus will often come in urine that is over-acid, and it will remain clear and acid perhaps for a week. When blood and pus are both present in the urine, the blood will fall later than the pus, and will remain as a little thin layer on the top of it.

Another distinguishing consideration is that the amount of albumen in urine is relatively greater when the pus present comes from the kidneys than it is when it comes from the bladder. If the amount of albumen is relatively high, then the probabilities are that the pus comes from the kidneys. However, if you have an ulcerated surface in the bladder, caused by cancer or stone, then you may get a considerable amount of albumen with the pus, but under ordinary circumstances the above statement holds good. If the urine contains a lot of granular pus, with perhaps one-half per cent. of albumen (by weight), you may be almost certain that you have a case of pyelitis.

Another exceedingly good way to differentiate these two conditions is

by washing the bladder. You first have your patient pass his water in two parts, each of which is opaque. Then pass a soft catheter into the bladder; if you find that he is not able to empty his bladder completely, it is presumptive evidence of cystitis. Through the catheter wash the bladder with a salicylic acid solution until it is perfectly clean. Let the patient rest for an hour and then urinate; if the urine is still very cloudy, then it is probable that the pus comes from the kidney.—*The American Practitioner and News.*

An Efficient Method of Controlling Hemorrhage After Suprapubic Prostatectomy.

As the operation of prostatectomy is almost invariably performed on subjects who are already debilitated and anæmic from constant suffering and want of rest, who in addition to their age not infrequently are afflicted with some kidney lesion, the importance of preventing as far as possible loss of blood, with its attendant shock, is easily recognized.

With this in view, Dr. Keyes has devised a method which certainly seems to be more rational and effective than any which have preceded it.

This consists in the use of a plug or tampon of bichloride gauze. A square of four thicknesses of gauze is first cut, the length of each side being about six inches. Upon this are placed eight thicknesses of gauze cut square, each side measuring four inches, and upon this eight other thicknesses of gauze also square, the side measuring three inches. Centrally upon the three-inch pad a small white shirt-button is tied by stout silk ligatures, transfixing the pad and tied upon the six-inch square surface. This central button also has a piece of silk attached to it, running out freely in the direction away from the three-inch surface. This is to facilitate extraction. Each of the corners of the six-inch pad is stoutly tied with a piece of silk, and the silk from each of these four corners is knotted at its end into a double knot, while the silk running out backward from the button is tied with a single knot, for the purpose of distinguishing which is which when making the extraction; although practically it will be found that they must all be made taut and pulled upon all together in order to effect removal with the greatest care and facility.

In the first of Dr. Keyes' cases, he passed a soft bulbous olivary French catheter through the urethra into the bladder and out through the suprapubic wound, and tied the double silk upon the end of it, and with the silk making traction along the line of the urethra he drew the tampon powerfully down into the funnel-shaped excavation of the prostate, and tied the double ligature over a piece of soft gauze at the urinary meatus upon the relaxed penis.

In the second instance (because the patient also had deep urethral stricture), a perineal urethrotomy was made, and by direct traction through the perineal incision upon the tampon it was drawn firmly into place, and the strings tied over a gauze perineal pad.

In both instances the subsequent removal of the pad was comparatively easy, and its effect in carrying out the function for which it was designed manifest, and satisfactory.

Dr. A. T. Cabot, of Boston, having used this tampon in one case with admirable success, has devised a modification in the construction of the plug which perhaps might render it more easy of removal. This consists in a long strip of gauze, the edges of which can be rolled in and stitched so that there should be no loose, frayed edges, and which could then be doubled as is done in making a conical compress, and run on silk to which is attached a button. It could then have another thread attached to the upper end to remove it by. This could be drawn into the neck of the bladder as firmly, he thinks, as any compress; but on loosening the thread which passes through the perineum and then drawing on the upper thread, it would come out in a long strip, much as does the packing which one applies to a bleeding uterus.

In these cases drainage takes place entirely through the suprapubic opening, which must be kept open in order to remove the tampon.—*Edward L. Keyes in N. Y. Med. Record.*

A Manipulative Mistake and Its Consequences.

This paper was read by Dr. George Ross, of Richmond, Va. He related the case of a woman who had suffered from unremitting, agonizing tenesmus, the result of a mass which she had carried for seven years in her bladder, and which had proved on inspection to be a pleget of absorbent cotton once saturated with iodine, in shape a truncated cone, and thinly incrusted with phosphate of calcium. The patient believed that it had been introduced by her first physician, who, when attempting to apply some intra-uterine dressing, had mistaken the urethra for the cervical canal.

Hæmaturia.

Dr. Willy Meyer, in referring to the value of the cystoscope in making a differential diagnosis in cases of hæmaturia, says: "This instrument has shown that most of the old-fashioned rules which governed us in making our diagnosis were erroneous; only this one rule is still considered to be correct, that if at the end of a discharge of urine blood exudes, it comes from the bladder or prostate."

PEDIATRICS

IN CHARGE OF

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An Hour in the Operating Room of the Hospital for the Ruptured and Crippled, New York, October 28, 1892.

Lorenz-Operation for Congenital Dislocation of the Hip. Fully described in *Centralblatt für Chirurgie*, 1892, No. 31.

Case 12. James H., a boy, five years of age, with congenital dislocation of left hip, inches shortening. Details of operation as follows: One assistant making traction and abduction on the limb, another counter-extension by means of a canton flannel bandage through perineum and over the upper end of operating table; subcutaneous myotomy of abductors, tendons, and all bands within reach; then flexion of thigh, which brings into prominence the muscle attached to the tuberischii; division of these muscles subcutaneously through a second punctured wound; firm traction and abduction brings limb down equal in length with its fellow; an incision two and a half to three inches in length, extending from the anterior superior spinous process vertically down the limb, exposing the fascia lata; this cut transversely, exposing the tensor vaginæ femoris and the sartorious; muscles now separated by retractors, when the capsule of the joint is exposed; finger inserted to recognize the tendon of the rectus femoris, which is divided; capsule opened and cut away throughout its anterior and inner aspects; head of the bone now fully exposed, which is flattened and shaped somewhat like a lozenge; ligamentum teres found very wide and lying loosely over the head; this ligament cut away and finger inserted into acetabulum, which is found very shallow; then, with finger as guide, a sharp spoon on end of the flush, gouge cuts away a depression in the acetabulum toward the upper and outer border, leaving this border, however, intact; a good cup-shaped depression is thus made, into which the head of the bone is placed, when limbs are found to be of exactly same length. Limb put up in extension and abduction at an angle of about twenty degrees with the body; catgut drain inserted; wound sewed up by continuous suture, antiseptic dressing, plaster of Paris reinforced by curved steel on the outer side, plaster extending from the nipples down to the malleoli. Under the plaster, however, adhesive strips applied for traction. This being the first operation of the kind, it required about three-quarters of an hour for its completion.

November 1st. The child has done well since operation; a little elevation of temperature yesterday, but down this morning.

Lorenz argues that the muscles which oppose the reposition of the head of the bone into the acetabulum are the long muscles running in the line of the shaft; that the subperiosteal denudation of the head of the bone and trochanter is unnecessary, and adds much to the danger of the operation. He endeavors, by subcutaneous myotomy under extension and counter-extension, to bring the head of the bone opposite the acetabulum before opening the joint. This author has operated four times with primary union; patients being able to support weight on the operated side in three or four weeks. No final results given.

CASE 13. Sadie E., three and a half years of age, with femoral adduction resulting from an operation done by Hoffa, of Wurzburg, in this hospital about one year ago, for congenital dislocation of the hip. Hoffa operated at that time by a straight incision above and over the trochanter major, exposing the capsule by vertical incision, cutting away the ligamentum teres, scooping out the acetabulum in its upper portion, replacing the head, and putting the limb up in moderate abduction. This case did badly from the first. Suppuration followed. The immediate result was not good; in fact, the child has been under splint treatment for nearly a year, and now has three-quarters of an inch shortening, the same as before operation, and limb is in adduction, though the movements of the joint are good.

The operation, this morning, was to simply stretch the adductors, put the limb up in abduction, and hold it in plaster of Paris.

CASE 14. Morris C., a boy, about ten years, with talipes equinus; hemiplegic; extreme. Simple subcutaneous tenotomy, with over-correction of deformity; plaster of Paris dressing. In addition to the foot deformity, he has wrist-drop, an extremely attenuated hand and forearm, but no treatment adopted for the upper extremity.

November 1st. The foot has swelled a little, but the boy has suffered comparatively little. The plaster is removed this morning, and the foot is put up in better position. No excoriations found. Up in wheeled chair. —*V. P. Gibney, M.D., in Archives of Pediatrics.*

TWO CASES OF HEMORRHAGIC BACTEREMIA IN THE NEWBORN.

Tavel and Quervain (*Centralbl. f. Bakteriol. u. Parasitenk*) have reported the case of a premature male child, in which infection of the umbilicus was noted a few days after birth. On the tenth day multiple and rather extensive hemorrhages took place beneath the skin. At the same time rigidity of the skin of the lower extremities was observed. The

child died on the thirteenth day. At the *post-mortem* examination, in addition to the subcutaneous hemorrhages, the epidermis was found detached in places. A small amount of pus was present at the umbilicus the pleural cavities contained bloody fluid there was double hemorrhagic pneumonia; hemorrhages had taken place beneath the pleura and the mucous membrane of the stomach and intestines, and into the parenchyma of the kidney. In the blood from various sources, in the tissues of the various organs, and by cultivation, streptococci were found in considerable numbers, with a small number of staphylococci. In a second case, also in a premature child, the signs of pneumonia appeared on the tenth day, and death took place on the twelfth day. At the *post-mortem* examination, double pneumonia was found; there were, besides, hemorrhages beneath the epicardium, beneath the dura mater, into the pia mater, into the cerebral substance, and into the ventricles. In the blood, by cultivation, and in sections of the lung tissue, staphylococci aurei were found in great preponderance. The special feature of the cases resides in the occurrence of the hemorrhages, which cannot be ascribed to external influences, as the labors took place without instrumental intervention. The inference is clear that infection took place by the umbilicus. The infants, by reason of premature birth, were less able than mature children to resist the invasion and multiplication of the organisms.—*Medical News.*

Three Infective Diseases Incubative at the Same Time.

Dr. Nash, in the *British Medical Journal*, reports that he had recently under his care a child, aged 3½ years, in whom was developed within a week the following infectious diseases, in the order named, namely: Whooping-cough, chicken-pox, measles. The incubative period of pertussis is stated to be a few days, that of chicken-pox to be variable, and that of measles from seven to ten days, and the point of interest is that three distinct poisons (microbic?) should flourish in the one *corpus vile*, and come to full maturity at one and the same time.

Gout in a Child Eleven Years Old.

Marboux (*Lyon Médical*) has reported the case of a girl, eleven years old, in which, after a brief period of malaise, sore throat, and difficulty in swallowing, pain, redness, and swelling appeared at the metatarso-phalangeal joint of the right great toe. On the following day the symptoms subsided with the abruptness with which they had appeared; some discoloration, pain, and swelling, however, persisting. A day later, the great toe of the left foot became similarly involved. Forty-five grains of sodium salicylate

were administered in twenty-four hours, and decided improvement followed. There was no doubt from the mode of onset, from the appearance of the affected parts, and from the progress of the case, that the condition was gout. There was no family history of gout on either the father's or on the mother's side. The father had, however, eighteen months previously, had an attack of the same kind as the child. The child did not suffer from migraine or from gastric disorder, or from cutaneous eruptions; nor had menstruation occurred.—*Medical News.*

Diphtheria Bacilli upon the Fauces of Patients Convalescent from that Disease.

Tobiesen (*Centralbl. f. Bakt.*) found Loeffler's diphtheria bacillus upon the fauces of twenty-four out of forty-six patients convalescent from that disease, about to be discharged from the hospital. In these cases the disease had not been unusually severe, and the patients were discharged after a period of seclusion of the average duration. From these investigations, it seemed possible that one-half of the discharged patients might be sources of contagion. Tobiesen was able personally to ascertain the facts in twenty-one of the twenty-four cases, and his inquiries showed that one only had (probably) been a source of infection. He therefore infers that the community is practically subject to no risk from patients discharged convalescent from diphtheria, notwithstanding that many of the latter probably still have the specific bacilli upon the fauces and adjacent parts at the time of discharge.—*British Medical Journal.*

Spasmodic Movements of the Head in Infants.

Petersen reports five cases of rotatory spasm of the head in infants. He proposes the term "gyrospasm" for the condition, but does not seem to suggest that its etiology is different from that of other spasmodic movements, such as nodding, also observed in infants. In one case only was there any associated nystagmus, and in this the movement was confined to one eye. In another case there was convergent strabismus. The gyrospasm was first noticed in one case at 3 months of age, in one at 4 months, in one at 5 months, in one at 7 months, and in one at 8 months. Taken together, therefore, the cases do not support Henoch's view that dentition is a cause. Petersen suggests that in most of the cases cerebral concussion will be found to be the determining factor, and observes that in adults concussion, if severe, may give rise to a rapid, though temporary, nystagmus. The prognosis, he believes, is good, but recovery may be hastened by the administration of bromide of potassium, in doses of from 1½ to 3 grains thrice daily.—*Medical News.*

PATHOLOGY

IN CHARGE OF

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The Germ Theory in Relation to Cancer.

From present indications, it would seem highly probable that cancer will presently be added to the list of diseases depending for their causation upon the growth of some form of germ. Virchow, in 1851, described the occurrence in the epithelial elements of carcinomota of certain bodies which he took to be young epithelial cells; the process by which they originated he spoke of as "endogenous cell formaton." Judging from Virchow's description, one cannot avoid the conclusion that the founder of modern pathology saw those bodies which many recent workers regard as parasites, and as the probable exciters of the cancerous process.

The discoveries of the vegetable germs of anthrax, and, later, of tuberculosis, followed, as they were, by others belonging to the same kingdom, naturally led many to expect that the cause of cancer would be found amongst the bacteria, and, working with this expectation, more than one investigator has claimed to have discovered the desired organism. Notable amongst these were Scheuerlen, Kubasoff, and Russell. The results of none of these men have stood the test, however, and more recent investigators would have us believe that the cause looked for is to be found, not in the vegetable kingdom, but amongst the lower forms of the animal kingdom—the protozoa. Since the publication of the observations of Darier on follicular psorospermosis, and of Pralassez and Albarron on coccidia in epithelioma in 1889, a great amount of labor has been gone through in the attempt to settle the question as to the relationship of these or similar organisms to cancerous growths. Those who wish can find a historical sketch of this work in the article on "Parasitic protozoa in cancerous tumors" by Ruffer and Walker, in the *Journal of Pathology and Bacteriology* for October, 1892.

In the above article, Ruffer and Walker describe a number of different cell forms which they have been able to demonstrate satisfactorily by new methods of staining, and of which they present very careful and beautiful drawings. They do not claim that similar appearances have not been observed before, but do think that their methods place the parasitic charac

ter of these cells beyond question. It is worth noting that E. Metchnikoff, who has inspected these slides, believes that they have accomplished all that they claim. The organisms are described as occurring singly or in groups *within* cancer cells only, and in the growing parts of a cancer. In only three cases out of a large number examined were they not to be found. Ruffer has, since the appearance of the above published a note in the *British Medical Journal* of Nov. 5, 1892, in which he claims to have seen the development of the parasites within the cell nuclei, and their final escape from the nucleus into the cell protoplasm.

That carcinoma is infectious, and therefore most probably parasitic, has been proven by the experiments of Hanan on rats. It is said also that in one instance, at least, transplantations have been successfully carried out in the human being, *but these* were from one part of the same person to another. It has hitherto, however, been found impossible to infect an animal with cancer taken from another of a different species. This is curious, in view of the supposed fact that epithelial cells transplanted from one animal to another, *e.g.*, frog to man, in skin grafting, will grow. We cannot yet be said, then, to have gotten further in our proof than the first postulate of Koch, if even so far.

Tizzoni's Fifth Case of Traumatic Tetanus Treated with the Blood of an Immunized Animal.

The patient presented a bruised, lacerated wound of the middle finger of the left hand, much contaminated with earth. Twelve days after the infliction of the wound, the first symptoms of tetanus appeared. In order to remove the focus of disease and prevent the spread of tetanic poison, Tizzoni ordered the amputation of the damaged finger. This was carried out, and at once injections of blood serum from tetanus-immune rabbits commenced. In all, there were sixteen injections of from 2½ to 5 c.cm. of serum, and six injections of altogether 1.35 gr. of antitetanine separated from blood serum of rabbits. Recovery took place. The quantity of serum used amounted to 40 c.cm.—*Centrabl. für Bakt. u. Parasit*, Dec. 12, 1892.

[It is worth noting in this connection that recovery is said to have followed amputation alone in cases of tetanus.—J.C.]

The Thyroid Gland and Myxœdema.

M. Moussu reports to the Biological Society of Paris that he has performed a large number of thyroidectomies in young animals, and finds that

their development is thereby impaired and an atrophic cretinism or myxœdema induced.

H. W. Cunningham reports to the *British Medical Journal* of Dec. 10, 1892, that he is at present attending a typical case of myxœdema in which the thyroid is much enlarged. His explanation, probably the correct one, is that the enlargement is due to fibrosis, and that the gland elements proper have undergone atrophy.

It is a curious fact, and one requiring explanation, that thyroidectomy in the horse, an operation not infrequently performed, is *not* followed by myxœdema, nor apparently by *any* bad results.

Micro-Organisms in the Milk of Healthy Lying-in Women.

Paleske concludes, as the result of a series of researches, that micro-organisms are to be found in the milk of many healthy women, possibly in 50 per cent. These germs belong to the cocci, and solely, as far as Paleske has himself determined, to the variety known as staphylococcus pyogenes albus. It is doubtful whether the germ reaches the mammary gland through the blood current or enters the ducts from without. It is certain that the staphylococcus may actually abound in milk fresh from the mammary gland without the simultaneous or consequent occurrence of inflamed breast or general symptoms of fever.—*Epit. of Cur. Med. Lit.*, *Brit. Med. Journ.*, Dec. 10, 1892.

The Effect of the Bichloride of Mercury on the Kidney and Intestine.

MM. Pilliet and Cathelineau have studied the effects of minimum doses of bichloride of mercury on the kidney and intestine. The cells become vacuolated, rupture and fall out necrosed. The vessels are engorged, dilated, and allow the blood to pass through. The lesions observed in animals, the dog or rabbit, do not differ in any way from those found in man poisoned by the sublimate of mercury.—*Prog. Médical.*

Editorials.

THE CANADIAN PRACTITIONER.

We have said good-by to our old form of publication, and have adopted the best approved among modern styles in medical monthly journals. Form and style, however, while good enough in their way, are only secondary matters in connection with medical publications. Quantity and quality are much more important. Our readers will notice that this issue contains eighty solid pages of reading matter, and will, probably, willingly admit that no complaints should be made about the quantity. Many will think that quality is of more importance than either style or quantity, or both combined. With such we are inclined to agree, and it is our intention to make a vigorous effort to make THE PRACTITIONER acceptable in all respects to all classes of medical practitioners.

The Editor begs to tender his thanks to all those who have given valuable assistance to THE PRACTITIONER during the last seventeen years. He has, fortunately, good reason to hope that nearly all the contributors of the past will continue to render substantial aid in the future. It has been deemed advisable to reorganize the editorial and literary staff; and the result of such a departure will be seen in this and future issues. The various departments of medicine have been placed under the charge of competent men, who assume full responsibility for the matter which, in in the future, will appear in the pages assigned to them. The Editor will still be responsible for all matters contained in the editorial columns; but he will receive the active co-operation and assistance of Drs. Ross, Caven, and King, who have consented to act as associate editors.

In the improvements which have been effected, the publishers have more than done their share. The editors and collaborators highly appreciate the determination which they have shown to furnish a first-class journal—a medical magazine on which it will be a pleasure for its contributors to work. We do not intend to make any extended comments on a change which is very expensive, as far as outlay is concerned. We are willing to let this journal speak for itself; and, if it pleases the professional public, let physicians and surgeons in Canada and the United States show their appreciation in a way that will be satisfactory to The J. E. Bryant Publishing Company.

McGILL MEDICAL FACULTY AND MR. OSLER.

McGill Medical College is certainly fortunate in having a strong support from Montreal's most intelligent and wealthy citizens. The numerous generous gifts to that very worthy institution have done much to assist its faculty in many respects. It was freely stated in the lay press last month that strong efforts were being made to bring back Dr. Osler from Baltimore to Montreal; and, with that object in view, a prominent citizen had offered to give $100,000 towards the endowment of a chair in medicine, and other substantial assistance in addition, if the desired result could be accomplished.

We do not know that any definite proposal has been made to Professor Osler; but we are certain that his friends in all parts of Canada would gladly see him again settled in our Dominion. Since he left, Montreal has suffered great losses through the deaths of Howard, MacDonnell, and Ross—all, as it happened, connected with the department of medicine. His return would do much towards filling the tremendous gap. Little wonder is it that McGill's friends appreciate this, and show a willingness to offer strong inducements for his return.

What Mr. Osler's views or intentions are, we know not; but we cannot but recognize the fact that he occupies now probably the most desirable and most honorable position open to physicians in the world. While he has done much in the past, he is likely to do more in the future; he has magnificent opportunities for the sort of medical scientific work he likes, and grand possibilities before him. The friends of Johns Hopkins expect much from him in the further development of their great hospital, their laboratories, and their proposed medical school, and, in equity, have certainly a very strong claim on him. Considering all the circumstances, it seems unlikely that Mr. Osler will come back to dwell in Canada, at least for some time to come.

THE MEDICAL COUNCIL.

As weeks and months pass, it seems more and more deplorable that the Council and the Defence Association cannot come to something like an agreement. At the conference, to which we have before referred, they appeared to be coming close to each other; but, since that time, the signs are that they are seriously diverging. While the majority were waiting for the final touch of diplomacy which was to heal the breach, the Sangster cyclones appeared. To call Dr. Sangster's letters broad, liberal, and conciliatory would probably occur to no one. Clever they were: but what possible good can they do? There can be no doubt that, since their

appearance. Defence stock has gone down somewhat. The association is not dead, however, nor even in a sickly condition. Many of its members are strong, honest men, who are determined to wage what they think is a righteous war. Without, however, the slightest desire to offend men whom we respect very highly, we have to say that some of them hold views which must be considered extreme.

The "legislation committee" of the Council, composed of Dr. Fowler (president), Dr. Campbell (vice-president), Drs. Day, Bergin, and Britton, met in Toronto, December 11th, and considered certain proposed changes. The Defence Association desire to abolish university and school representation. The committee thought, with reference to this, that as the Council on a former occasion had asked the Legislature for a reduction of such representation, and had been refused because such institutions had vested rights which they surrendered for a consideration (representation) when the Council was organized, it was useless to renew the request. The members of the committee appeared to agree with the Government that certain universities and schools had vested rights.

With reference to the annual assessment, and the penal clause, the committee decided that as the Defence representatives had refused to accept the proposition made at the joint meeting, that (1) the assessment clause should stand, but that it should be left to the honor of physicians to pay the fee; (2) that the penal clause should be inoperative until after the next election—the clauses should be left as they now stand until after the next election in the Council. The committee had no objection to an increase in the number of territorial representatives, excepting in so far as it involved extra expense.

A DECORATED QUACK.

The cable notes published by the daily papers recently contained a notice of the conferring of a decoration upon one Pastor Kneipp, of Munich, by Prince Regent Luitpold, of that city, "for his discoveries in the water-cure mode of treating disease." The decoration is believed to have been secured for the clerical meddler in the physician's art at the instigation of no less a personage than the Empress of Austria, whose feats of daring and skill as a horsewoman, as well as her great personal beauty in her younger days, have made her famous, and who has recently derived much benefit from the treatment recommended her by Kneipp. His method of water-cure consisted of inducing the Empress to do what any regular physician of whatever standing would have lost his official head for proposing—to drink three quarts of water per diem, to run barefooted through the wet grass for a certain length of time at daybreak, and to leave off

corsets. The regular and conscientious physician will of course recognize the value, under certain conditions, of at least the first and the third of these items in the "course of sprouts" to which the royal beauty has submitted, and even of the second, the doffing of her boots being evidently meant to divert the royal mind from the fact that she is getting vigorous exercise at the most invigorating and enjoyable period of the day; but who but an ingenious and irregular practitioner could even induce an Empress sadly inclining to *embonpoint* to leave off her corsets? And is not the man who can prove the connection between the abandonment of corsets and "discoveries in the water-cure method of treatment" worthy of a decoration? The incident only shows again what has been already proved to demonstration a hundred times—that the public dearly loves humbug; that human nature in this regard, as in many others, is the same in the circles of royalty as in the gaping crowd that surrounds the long-haired puller-of-teeth on the street corner; that in matters where each is equally ignorant intelligence in other matters counts for nothing, or rather less, in what pertains to the healing art; and that, as Dr. O. W. Holmes says, the fact that a man is a thorough gentleman, an accomplished scholar, a conscientious and consecrated bishop of an enlightened church, as was the late Bishop Bukely of tar-water fame, does not make a physician of him. It would seem indeed at times that the more freedom and accuracy of judgment, and the higher the standard of general information that prevails in a community, the more readily do the educated and influential lend themselves to frauds, based without an exception upon the *post hoc vel simul cum, ergo propter hoc* fallacy, upon which, for instance, homœopathy depends for its existence. The concluding sentences of the report of the British Medical Association's investigation committee on the matter of cancer cure is a relevant conclusion to this article: "The savage trusts to his armlet; the civilized man, both in the upper and lower circles, submits himself with childish, if not child-like, simplicity to the pretences of the quack. It is a strange world; but, such as it is, open and honorable medicine has to live in it, and work in it, and must make the best it can of so wonderfully varied an environment."

INTRA-UTERINE INJECTIONS OF GLYCERINE TO INDUCE LABOR.

Intra-uterine injections of glycerine have lately been employed for the induction of premature labor by Pelzer, in Germany, who reports five cases, four of which were successful. Dr. Clifton Edgar, of New York, has used Pelzer's method in two cases, in which the results were very satisfactory, as shown by his report (*Medical Record*, Nov. 26). Dr. Edgar de-

scribes his procedure and the results in the case as follows: "The woman was brought to the edge of the bed, the bladder emptied, and the vulva and vagina were scrubbed with green soap and water, and, finally, with a solution of bichloride of mercury, 1 to 2000. Then, under the strictest aseptic and antiseptic precautions, the anterior cervical lip was seized in the grasp of a double volsella forceps, and the cervix drawn nearly to the vulva. Half an ounce of sterilized glycerine was then slowly injected between the membranes and the uterine wall by means of a No. 9 (English scale) braided silk catheter, connected with a simple glass syringe. The catheter was introduced to a distance of eight inches from the external ring of the cervix. No pain was apparently caused by the operation, and the woman, in the dorsal position, with her hips raised by pillows, was left in charge of a physician. The injection was made at 11 a.m. Two hours and a half after strong uterine contractions set in, and labor was completed in six hours. The child was born alive and vigorous; the mother had an uninterrupted recovery." This method was employed in the Burnside Lying-in Hospital, of Toronto, in one case, a report of which will appear hereafter.

JOHNS HOPKINS MEDICAL SCHOOL.

We learned from Professor Osler, during his recent visit in Toronto, that Johns Hopkins had received a reasonably handsome Christmas box in a gift of $300,000 from Miss Mary Garrett, to be expended in the organization and maintenance of a medical school. The trustees had some time ago decided that a fund of half a million dollars was required to complete their equipments in certain departments, and provide for proper maintenance, before their medical school could be established. Towards the close of 1892, they had on hand $200,000, and it was thought the school would have to be a thing of the somewhat distant future.

The generous donor has solved the difficulty in a somewhat simple but very effective style. Johns Hopkins has been struggling along with an endowment of only a limited number of millions, and had to proceed somewhat slowly. The laboratories of chemistry, physiology, and pathology have been thoroughly equipped for many years; the departments of medicine, surgery, and gynecology have been in complete working order since the opening of the hospital in 1889. They only wanted departments in anatomy and pharmacology, but could not seriously contemplate their establishment with only a small sum like $200,000 available. Miss Garrett's timely cheque will prevent them from feeling any longer the perils of poverty; and we hope that, in the near future, the long-expected Johns Hopkins medical school will be in active and successful operation.

THE McCULLY TRIAL AND THE MEDICAL DEFENCE ASSOCIATION.

We publish in this issue a letter from Dr. Coburn, containing a somewhat indignant protest against certain references in the *Ontario Medical Journal* to the Medical Defence Association, and especially Dr. Sangster. Without indulging in any criticism on the article referred to, we will leave the *Journal* to look after itself; but it is simple justice to affirm that Dr. Sangster is undoubtedly one of the ablest men in the Canadian profession. He is not only a capable and accomplished man, but he is also above even the suspicion of ever countenancing or encouraging charlatanry or quackery in any form.

We had supposed that his connection with the McCully trial was generally understood in Toronto. He did not know until about the close of the first day of the trial that he was expected to give evidence in favor of the defendant, McCully. He at once showed his opposition to the McCully methods in such terse and forcible English that he was promptly told that he would not be wanted, and that he might go home. We do not pretend to agree with Dr. Sangster in all subjects; but his ability, his position in the past as one of the leading educationists of the province, his age, and his honorable career as a physician, should command for him at all times the highest respect from all parties.

SMALLPOX IN TORONTO.

During the last four months there have been altogether seven cases of smallpox in Toronto and vicinity, all of which have been treated in the new Isolation Hospital without any fatality. It was feared that it would be impossible to prevent the disease from spreading, and certainly few thought that, under the circumstances, it was likely that it could be confined to such narrow limits. The Toronto Board of Health certainly showed commendable zeal in making such strenuous efforts to stamp out the loathsome disease, and the Medical Health Officer, Dr. Allen, deserves the thanks of the community for his very vigorous and successful work in the same direction.

Meetings of Medical Societies.

THE TORONTO CLINICAL SOCIETY.

The regular meeting of the Toronto Clinical Society was held December 14th, 1892; Dr. Temple, president, in the chair.

Dr. Burns was then called upon to read his clinical notes on a case of gall stones. (See page 13.)

DR. JOHNSON: *Mr. Chairman and Gentlemen,*—Dr. Burns says that in a *post mortem* that was made on this man he found that the gall bladder was full of bile, and the stone was lodged in the cystic duct. My experience is that where you have gall stones, and a gall stone fixed in the cystic duct, you have a thin mucus present, and sometimes the gall bladder is enlarged, but the presence of bile in the gall bladder is very unusual. It has been estimated that one man out of fifty is the subject of gall stones. A great many have gall stones, and they are living and have no symptoms, and even when symptoms do occur they are of such a doubtful character that there is great difficulty in coming to a conclusion as to whether *the case is one of gall stones or one of indigestion.* Perhaps the symptoms that one would pay most attention to, and I look upon as being most characteristic, are (they were mentioned by Harley about three years ago), namely, shivering, vomiting, and excessive irritation of the skin, particularly of the skin of the abdomen; indigestion, more or less, frequently happens at first; pain over the region of the liver and gall bladder; vomiting, shivering, itching of the skin, enlargement of the liver, and, in some cases, jaundice, but no jaundice occurs unless a gall stone passes into the common duct. There is no jaundice when the stone passes into the cystic duct. The shivering is of a peculiar character; it is accompanied with cold, clammy skin, generally with a normal or very little higher temperature. The face is pallid, and the countenance anxious. In some cases we have severe pain, excessive depression, and hiccough. The hiccough is a symptom which has not been much dwelt upon, and is a very grave symptom.

I consider that there are two kinds of gall stones. The one form, light yellow, breaking with a peculiar fracture; the other form, like huckleberries, of a blue-black color. The latter are found in dissipated men, and I have seen them in seventy-five per cent. of the *post mortems* made in jails and places of that character.

Dr. Burns has spoken of primary cancer of the gall duct. I have not had the pleasure of seeing such a case, but, no doubt, any irritation

from the gall stones will produce a change in the lining membrane, and may originate cancer.

The treatment adopted some years ago was used with considerable success where the stone was small, namely, the treatment of manual expulsion by external manipulation of the gall bladder for ten or fifteen minutes each day. It has been possible, in a great many instances, to expel from the bladder small gall stones by this method.

A treatment was suggested some years ago which, I think, is superior to morphia. When an attack comes on with severe pain, the usual treatment is to put the patient into a hot bath, to apply hot applications, and give morphia; but I believe belladonna, given in half-grain doses, is preferable to the morphine. Belladonna does not produce the bad after-effects, and it relieves the pain.

As to the prevention of gall stones, I do not believe that there is any known preventive. I have lately had two or three cases of gall stones that passed out of my hands to a gentleman attending a hospital in a neighboring city. In these cases he gave them very large doses of oil, and they came back well, much to my disappointment. I do not believe in the oil treatment, and have not used it of late years; but here were three cases that came under my notice, undoubted cases of gall stones, that went to this neighboring city, and came back cured, or they thought they were cured. Gall stones are very common in people who are great eaters and take little exercise.

I have only once seen rupture of the gall bladder. This was a case in which was found several gall stones, loose in the abdomen, at the *post mortem* examination. Perforation of the gall bladder, and escape of bile into the peritoneum, is not necessarily fatal.

DR. MACDONALD: I have had some unfortunate experience in the treatment of gall stones. The results by the oil treatment seem to be more fortunate. I use the expression "seem to be" because, in some hands, the patients have got much better. To be of any benefit, I think the oil must be given in large doses. One case I now have under treatment to whom I gave the oil in large quantities. She had the characteristic symptoms of pain, with chills and itchings of the skin. After having been under the olive oil treatment for a time, the attacks left her, and she remained free from them for some months; they are now, however, returning again, but are not as severe as they were before. Morphia, in this case, controlled the pain, but the intense general itching of the skin has been so severe that it has been more difficult to relieve than the pain, and I have, as yet, failed to find a remedy to control this condition.

I can hardly agree with Dr. Johnson in regard to his statement about a perforation of the gall bladder occurring without a fatal termination

that is, a perforation into the abdominal cavity. My opinion is that such a perforation would be fatal, unless the patient be submitted to surgical interference.

DR. J. F. W. ROSS: I am fortunately able to show you a case of obstruction of the common duct by a stone, awaiting operation. My friend, Dr. Cotton, brought me a patient this afternoon, referred to him from the country. He had already formed his opinion, and wished to have it confirmed by some one else before advising operative procedure. The patient, here present, was taken a year ago with an attack of severe and sudden pain, lasting for two or three days. She then had no more trouble with the pain, except that she noticed an occasional soreness through the right shoulder. About three months ago she became jaundiced. Before the jaundice came on she noticed that the pain increased, but it was not nearly as severe as when it first set in, a year ago. The jaundice became deeper. For two months the motions have been light in color, and the urine has been stained with bile, so that it produced a yellow stain on the clothing. She has also suffered from itchiness of the skin. She noticed a lump on the side. On examination I found a dilated gall bladder, and a decided lump in the neighborhood of the common duct, feeling like an impaction of a stone in the duct. On a former occasion, I diagnosed such a case as one of malignant disease. The symptoms in this case point to an impaction of a stone in the common duct, with subsequent aggregation to its size. Regarding the formation of gall stones, I believe they are, in many respects, similar to stones that form in the kidney and pass into the urinary bladder. Gall stones are undoubtedly formed in the liver, and may then pass directly through the common duct into the duodenum; as stones pass from the kidney through the urinary bladder out through the urethra; or they may pass through the first portion of the common duct, and drop into the gall bladder and remain there, exactly as stones pass from the kidney into the urinary bladder and remain there, increasing in size, until they are subsequently removed by operation.

A few days ago I operated on a case. I saw the woman ten days previously, in consultation, during an attack of undoubted hepatic colic. She had in the morning three-quarters of a grain of morphia, and in the afternoon one-half a grain, but without gaining much relief. Under chloroform, we could feel a distended gall bladder. Taking this fact into consideration, the fact that the patient had previously been attacked nearly a hundred times, and the fact that she was now suffering with an undoubted attack, I advised operation, and a week after opened the abdomen, with the assistance of her physician, Dr. Cotton. The gall bladder was found distended, but on pressure the bile passed into the

duodenum, and left the gall bladder collapsed. Such a case, I think, was one of true hepatic colic, in which the stones passed direct from the bile duct into the duodenum.

We have three distinct forms of this disease, giving rise to three distinct sets of symptoms. In the first, we have obstruction of the common duct; in the second, we have obstruction of the cystic duct; and in the third, we have obstruction of neither duct. In the first, the symptoms simulate, and are often taken for those due to malignant disease in the neighborhood. They are chronic jaundice, emaciation, clay-colored stools, and, perhaps, bile-stained urine. Those of the second variety, namely, closure of the cystic duct, whether permanent or temporary, are severe, suddenly recurring epigastric and hypochondriac pain, without jaundice, clay-colored stools, or bile-stained urine. Symptoms of the third group of cases are very indefinite. No symptoms may be present, or we may have well-defined and unaccounted for fever and chills without any severe attack of pain, even though the gall bladder suppurates or ulcerates. Such cases may end fatally by perforation. Now, regarding the medical treatment by olive oil or any other drugs, I would like to say here what I have written elsewhere, namely, that any one can drink olive oil and pass gall stones. A saponification of the oil takes place, and the gall stones thus passed, if heated on a piece of blotting paper, will leave nothing but a grease spot, and will be readily dissolved in ether.

The next case I have to show you is the converse of that related by my friend, Dr. Burns. This patient is a man who had five attacks of epigastric pain, but never, to his knowledge, passed a gall stone. He was referred to me by a friend, Dr. McMahon, who thought the case was one of gall stones. I examined him, and found a distended gall bladder. This could only be made out with the patient in one position. He was not jaundiced; but owing to the enlargement of the gall bladder, to his previous attacks of pain, and to the last continued attack of pain for two weeks, I diagnosed obstruction of the cystic duct and probable impaction of a stone.

At the operation I removed some forty-eight stones from the gall bladder, and one from the cystic duct, by direct incision through the duct wall. For three months he had an escape of bile through the wound, but is now, as you see, in first-class health, and, on looking at the wound, you will notice that it is completely healed, and its location is indicated by a small scar. He is in as good health as he ever was.

FIBROID TUMOUR REMOVED BY HYSTERECTOMY.

Dr. Atherton showed a specimen of fibroid tumor removed from a patient seen by him two years ago. It was then about the size of two ordi-

nary oranges. He said: "I did not see the patient again until a week before operation. She was thirty-eight years of age, never had any menorrhagia, and was entirely free from symptoms of any kind except those produced by pressure. The reason why she wished to have an operation done was that the pain was becoming intolerable. She became more and more incapacitated from work, and therefore wished to have something done. I advised operation rather than carry out any other treatment. The case was not suitable for electricity, and we all know now that the treatment by electricity, at its best, is uncertain and too expensive for a poor person.

"On opening the abdominal cavity, I found the left ovary high up on the tumor; the right ovary down deep in the pelvis, so that it could not be reached without lifting out the tumor. The broad ligaments were ligatured, a rubber tube was passed around the base, and the tumor removed. A large stump was thus left, that was subsequently trimmed down by removing portions of it, and the balance of the stump was then stitched with catgut ligatures. The large vessels were ligatured separately by loosening the rubber clamp until the points of hemorrhage could be seen. The peritoneal surfaces were drawn together by silk ligatures, and these were brought out of the wound. The peritoneum was stitched around the stump so as to shut it off from the peritoneal cavity.

"The temperature rose to 100, and the pulse to 105 after operation. On the third morning the temperature was normal, and has been so since. At the neck of the uterus there were some small tumors that I enucleated before completing the closure of the stump."

SEPARATION OF THE RECTI MUSCLES.

Dr. Ross then presented a case of separation of the recti muscles. He said: "This patient, during her last pregnancy, became so wretched and miserable that Dr. Wright and I decided to bring on premature labor. With her other children she had been delivered with forceps, after great difficulty. The absence of the support of the recti prevented her from receiving the benefit of the expulsive pains. At this last labor, at the seventh month, it was found necessary to bind her up very tightly, and in this way she was delivered without instruments. She is now in a wretched condition, and is anxious that I should operate upon her. I fear, however, that by operation I should fail to accomplish my purpose. The stitches would be apt to pull out on account of the great tension to which they would be subjected.

"The recti muscles can be distinctly felt, widely separated, and when lying down they can be approximated, so that the intestines can be kept inside the muscular abdominal parieties. When she was pregnant, the veins of the uterus could be distinctly seen just beneath the skin covering the abdomen."

Dr. Temple thought the case might possibly be improved by operation.

Dr. MacFarlane said that he thought all of the abdominal muscles were atrophied.

Dr. Grasett thought that the recti muscles were not as widely separated as Dr. Ross thought they were; but, of course, such a superficial examination of a patient was unsatisfactory. He would like to make a more thorough examination of the case before giving an opinion.

Dr. McFarlane's paper on a case of ununited fracture was postponed until the next meeting owing to the lateness of the hour.

THE CLINICAL SOCIETY OF MARYLAND.

The 472nd regular meeting was called to order by the vice-president, Dr. J. M. Hundley.

Dr. J. E. Michael read a paper entitled "Symphysiotomy; a Successful Case; a Suggestion." The ancient history of the operation was briefly referred to. Dr. Harris' paper, read before the last meeting of the American Gynecological Society, and published in the *American Journal of Obstetrics* in October, 1892, leaves little to be said as to the modern history of the operation. Dr. Harris' table, showing 44 operations from January, 1886, to July, 1892, by various operators, with one maternal death and three still-born children dying respectively at 12 and 72 hours, made a profound impression on the American profession. Dr. Charles Jewett, of Brooklyn, was the first American operator. He operated on September 30th, 1892. The child died in twenty-four hours from the effect of long-continued pressure. The recovery of the mother was uneventful. Prof. Hirst, of Philadelphia, operated October 2nd, 1892. Child and mother both well. Prof. Broomall operated October 7th, 1892. Mother and child saved. Dr. Michael operated at the Free Lying-in Hospital of the University of Maryland, October 24th, 1892. The patient was a rachitic negress, 4 ft. 6 in. high, 17 years old. Labor began on the morning of the 23rd. Dr. Michael saw the patient at 9 p.m. Os barely admitted two fingers. Head large, and no sign of engagement. Fœtal and maternal circulation good, and general condition of patient satisfactory. It was concluded to wait for greater dilatation, and operation was postponed till morning. Operation at 9.30 a.m.; chloroform anæsthesia. Os still small; most of the amniotic fluid had escaped, and the fœtus was suffering from pressure. Fœtal head obviously large, and no possibility of engagement. The bladder was evacuated, and then the os uteri dilated until four fingers would enter. The soft tissues were incised down to the symphy-

sis, and the attachments of the recti were separated for half an inch on each side. The finger was passed down behind the symphysis until it projected below. The soft parts from the outside below were incised down to the finger-tips. An ordinary curved, probe-pointed bistoury was passed behind the joint and the cartilage severed. Delivery by Simpson's modification of Tarnier's forceps. Pubic separation at its highest point was $2\frac{7}{8}$ inches. Notwithstanding all precautions, the cervix was lacerated into the vaginal vault, the perinæum to the verge of the anus, and the anterior vaginal vault into the operation wound. The lacerations repaired at once with cat-gut. The wound of the symphysis was sewed with gut, the deeper stitching including the pubic ligaments. The surface was powdered with aristol and dressed with iodoform gauze. Broad, adhesive strips encircled the pelvis, and were covered by a firmly-applied bandage. The puerperium was uneventful. On the 9th day the patient was allowed to sit up in bed; on the 11th day she sat up a little while in a chair; on the 12th day could walk well and firmly. At the present time she walks over all the hospital, and as firmly as before the operation. The child died on the third day, the death being due to pressure which had occurred previously to the delivery. Dr. Michael, since the operation, has procured a Galbiati knife, which he believes would have been of great service in the operation.

Dr. Michael believes that symphysiotomy will not only to a large extent take the place of Cæsarean section and of craniotomy on the living child in cases of contracted pelves, but will be of service in the delivery of living children in cases of bad presentation, where formerly craniotomy has been resorted to. He has examined this matter experimentally with a fœtus of large size and a pelvis, with the soft parts attached, of comparatively small size. Placing the fœtal head into the pelvis, and producing a posterior rotation of the chin, delivery was attempted by forceps, but was found to be utterly impossible. Symphysiotomy was performed, and, after the pubic bones were separated $1\frac{1}{2}$ inches, the head was easily flexed upon the trunk, the occiput brought under the pubic arch, and delivery by extension occurred in the usual way. Dr. Michael was so impressed with the feasibility of this operation that he intends to perform it on the first case of malposition of the head which presents itself to him. In cases where the occiput is posterior and the delivery of the child with forceps is accompanied with a great amount of violence, he thinks that this operation may be indicated. The number of operations which have been performed during the present year the world over, as collected by Dr. Harris, of Philadelphia, is 26. In this list there is no death of the mother. The statistics are remarkable both as to the safety of the woman and the healing of the wound

Dr. Hunter Robb asked Dr. Michael if in his case he has been able to suture the pubic ligaments as described by Leopold of Dresden in a case of symphysiotomy.

Dr. Michael said that the ligaments of the pubes offered a very considerable amount of tissue which might be caught with sutures. It would be unwise to depend upon the sutures, however they were passed. The pressure from the sides, as produced by adhesive plasters and a well-applied bandage over them, is so complete that you get a support which no suture of any kind could supply, and it would not make a very great amount of difference if the ligatures were not applied at all.

Dr. Robb congratulated Dr. Michael upon the success of this case. He thought that symphysiotomy would undoubtedly have a prominent position in obstetric surgery. On account of the simplicity of the operation, there will be great danger of its being performed more often than is necessary.

The pelvic measurements should be made as carefully as possible, with consultants of sufficient experience, before operation, just as is done when Cæsarean section is thought of. In some cases the operation is undoubtedly so clearly indicated that immediate action is justifiable, but these cases, he believed, form the large minority. Symphysiotomy does not provide for as many abnormal conditions as Cæsarean section; for example, where one has to deal with cancerous growths of the cervix, pelvic exostosis, tumors of the uterus, and some deformities of the pelvic bones, it would be useless to do symphysiotomy.

He believed, however, that the operation would perhaps save the lives of many children. On the other hand, it may leave undesirable results in the mother.

Dr. William S. Gardner said that the profession was indebted to Dr. Michael for bringing this subject before them. This operation will almost entirely take the place of craniotomy on the child where the condition is that of contracted pelvis. Of course no one would dream of doing symphysiotomy for a cancerous cervix, or where the obstruction was due to any other condition in the pelvis than that of contraction. The operation will also cut in very largely upon the Cæsarean sections, especially those Cæsarean sections done in the United States. The fact is very well known that we have in the United States a very small number of extremely contracted pelves, and that a large percentage of the Cæsarean sections that have been done were upon women who had only what is known as the "relative indication." With reference to the suturing of the pelvic bones, Leopold remarked at the time he was stitching the wounds that he did not consider the stitching of very much value, and that he placed his main reliance upon the external bandage. The bandage which he used was

made of heavy ducking, and was fastened by a buckle resembling an ordinary suspender buckle. The hips were padded with towels, and this bandage was drawn over them very tightly; in fact, so tightly that it produced sores on both the crests of the ilium in his first case. In Germany, and in most of the European countries, they have a large number of cases where the degree of contraction is so extreme that symphysiotomy is not a practical operation. The Galbiati knife is probably of great convenience to the operator.

(To be continued.)

Correspondence.

RE THE McCULLY TRIAL.

Editor of THE CANADIAN PRACTITIONER:

SIR,—I have the best of reasons for knowing that Dr. Sangster's attendance before the Discipline Committee of the Medical Council in the case of Dr. McCully was in obedience to a subpœna served upon him. His presence, therefore, at the discipline court was wholly unavoidable, and very much against his will. I also know that his testimony, had it been taken, would have been even more damaging to Dr. McCully than any given by those summoned upon the part of the Medical Council. These facts being well known to a part, at least, of the editorial management of the *Ontario Medical Journal*, I do not think that I use language any too strong when I say that no one, except a contemptible sneak, could have written or furnished the paragraph which appears on page 207 of the last number of that publication, insinuating, as it does, that Dr. Sangster, with "several members" of the Defence Association, might be regarded as defenders and apologists of Dr. McCully's *infamous* conduct. Evidently the paragraph was intended to be offensive, and to discredit the Medical Defence Association. There is more than a suspicion or conjecture that the article was penned by a servile suckling of the Medical Council. Yours,

W. COBURN.

Books and Pamphlets.

INTERNATIONAL CLINICS. A quarterly of clinical lectures on medicine, neurology, pediatrics, surgery, genito-urinary surgery, gynecology, ophthalmology, laryngology, otology, and dermatology. By professors and lecturers in the leading medical colleges of the United States, Great Britain, and Canada. Edited by John M. Keating, M.D.; Judson Daland, M.D.; J. Mitchell Bruce, M.D., F.R.C.P.; and David W. Finlay, M.D., F.R.C.P. Published by The J. B. Lippincott Company, Philadelphia.

The volume under notice is No. 1 of the second series, and opens with a clinic by Dr. J. M. DaCosta on "The Pulmonary Complications of Influenza." This lecture treats of the many common lung complications that follow on influenza, and the author's methods of treatment. It is an admirable discourse, and worthy of the most careful attention. "Some Clinical Types of Cirrhosis of the Liver," by David Drummond. This lecture reviews the clinical aspects of *acute* alcoholic more than any other degree of cirrhosis, and possibly the title would be more explicit if it said some clinical aspects of acute alcoholic cirrhosis. Dr. McPhedran has a clinic on "Pernicious Anæmia," and relates three additional cases to the five already reported by him. The doctor draws especial attention to the condition of the urine in the disease, which he considers almost pathognomonic—"decided acidity, high color during exacerbations, and low specific gravity, especially in proportion to the color." Good lectures follow on "Graves' Disease," "The Diagnosis of Pulmonary Phthisis," etc., of which we can only make mention, owing to lack of space.

We cannot expect to find all the clinics complete or exhaustive. The one on "Hydrocele" is very brief and incomplete. But the volume is so full of good things that possibly we should omit adverse criticism. "Excision of the Breast," by H. Pearce Gould, F.R.C.S., is really a pleasure to read. He advocates a most thorough removal of all possibly implicated tissues—better remove too much than not enough—glands, muscle fascia, etc., and shows from his statistics that this thoroughness in no way increases the mortality. "Some Forms of Abdominal Tumors," by Albert Vander Veer, M.D., is another concise clinic on the subject in hand. These careful clinics enable us to make our diagnosis and prognosis more complete and accurate. "The Treatment of Acute Anterior Urethritis," by Edward Martin, A.M., M.D., contains some very salient suggestions in the treatment of gonorrhœa. His statistics are not strictly accurate, nor are his conclusions as to the source of usefulness between what he terms "snaps" and prostitutes agreeable to our experience. His direction on the use of the syringe is perfect and complete, and one of the most accurate we have seen in print.

This volume, as did its predecessors, reflects great credit on the editors; while the publishers' name, The J. B. Lippincott Company, is a guarantee that paper, binding, and typography are the best that can be desired.

MEDICAL JURISPRUDENCE AND TOXICOLOGY. By Prof. H. C. Chapman, of Jefferson Medical College, Philadelphia.

This little work embraces, as the author tells us in his preface, the course of lectures in these subjects delivered in Jefferson Medical College during the past year. His per-

formance of the duties of coroner's physician in the city of Philadelphia, together with his experience as a teacher, has enabled him to present the subject in a clear and concise manner to the student and to the busy practitioner. The first twelve chapters are devoted to medical jurisprudence proper, and are well illustrated by plates, several of which are colored. Chapter thirteen treats of insanity, and, extensive as the subject is, the author has managed to touch on its most important points, and to condense into a small space as much as is possible of this branch. The remainder of the work is taken up with toxicology. The effect of poisons upon the human system is shown, and special attention paid to those poisons most commonly met with in medico-legal practice. The very complete index at the end of the book will be found of great assistance to its readers.

TEXT-BOOK OF OPHTHALMOLOGY. By Dr. Ernest Fuchs, Professor of Ophthalmology in the University of Vienna. Authorized translation from the second enlarged and improved German edition by A. Duane, M.D., Assistant Surgeon, Ophthalmic and Aural Institute, New York, with numerous illustrations. New York: D. Appleton & Co., 1892.

It has never been our lot to read a book treating of diseases of the eye which, in 750 pages, has contained a greater amount of information. To all oculists the name of its author is a guarantee of method, of the practical and clear application of the latest researches, and of conclusions which can be thoroughly relied upon. It is a book not only very valuable to the oculist, but also to the general physician, by reason of its thorough grasp of the principles of ophthalmology. This opinion will be frankly admitted by any one who even cursorily reads it. It is a book which not only instructs, but also teaches how to think. Thus it is able to solve many of the diverse doubts of many minds by giving a clear exposition of the principles with clearly-described, practical applications. It is deserving of a wide circulation among the profession, for it is sure to give satisfaction. The index is full, and the illustrations are numerous.

OVER 1,000 PRESCRIPTIONS AND FAVORITE FORMULÆ FROM AUTHORS, PROFESSORS, AND PRACTISING PHYSICIANS. Cloth, 12mo., postpaid, $1.00. *The Illustrated Medical Journal Co.*, Detroit, Mich.

The formulæ contained in this volume are practical prescriptions for the various types of diseases. They are the favorite ones of the various authorities for the diseases indicated. The volume is interleaved, so that on the blank pages can be recorded any other prescriptions. The whole is comprised in a handy cloth-bound volume of nearly 300 pages, and will be mailed to any address upon receipt of its price by the above publishers.

RUPTURE OF THE AORTIC VALVES, WITH DEMONSTRATION OF SPECIMEN. Aneurisms of Right Auricular Appendix. By Ludvig Hektoen, M.D., Chicago. Reprinted from *The North American Practitioner.*

EMBOLISM OF THE LEFT CORONARY ARTERY: SUDDEN DEATH. By Ludvig Hektoen, M.D., Pathologist to the Cook County Hospital, Chicago. Reprinted from *The Medical News.*

CAN CROUPOUS PNEUMONIA BE ABORTED? By Thomas J. Mays, M.D., Professor of Diseases of the Chest in the Philadelphia Polyclinic and Visiting Physician to the Rush Hospital for Consumption. Reprinted from *The Medical News.*

ADDRESS of the Retiring President of "The Association of Medical Superintendents of American Institutions for the Insane." By Daniel Clark, M.D., Toronto, Ontario. Reprinted from *American Journal of Insanity*, Utica, N.Y.

IDEALITY OF MEDICAL SCIENCE: The Evil Events of the Profession and an Available Device for its Reformation. By Maurice J. Burstein, A.M., M.D., New York From *The Doctors' Weekly*, 96 Fulton Street, New York.

ARE INEBRIATES CURABLE? By T. D. Crothers, M.D., Hartford, Conn. Read before the English Society for the Study of Inebriety, London, January 24th, 1892. Reprinted from the *New England Medical Monthly.*

A CONTRIBUTION TO THE STUDY OF CYSTIC KIDNEY. By Ludvig Hektoen, M.D. Reprinted from the *Chicago Medical Recorder.*

TUBERCULAR OSTITIS OF TARSUS—RHEUMATOIDAL ARTHRITIS OF TARSUS. By Augustus Wilson, M.D. Reprinted from the *American Lancet.*

Medical Items.

DR. OSLER, of Baltimore, spent a couple of days in Toronto during Christmas week.

DR. A. B. OSBORNE was recently elected president of the Hamilton Medical Society.

DR. HENRY T. BYFORD has been elected to the chair of Gynecology in the College of Physicians and Surgeons, Chicago, in the place of Dr. A. Reeves Jackson, deceased.

AT the recent elections in Toronto, Drs. Orr and Lynd were elected aldermen, coming first and second, respectively, on the list; and Dr. W. W. Ogden was re-elected a school trustee, coming out at the head of the poll.

DR. W. S. PHILP (McGill, '89), of Toronto, is spending the winter at Florida. He has recently been admitted as a member of the Florida Medical Association, after having passed the necessary examination.

DR. W. CUTHBERTSON (Tor., '83), of Chicago, was in Toronto during Christmas week. He gives cheering reports of the success of the Canadian colony of physicians in that great city.

AN EDITOR HONORED.—Dr. W. C. Wile, editor *New England Medical Journal,* was elected Surgeon-General of the Grand Army of the Republic at the recent grand meeting in Washington. This is an enviable distinction, and an honor worthily bestowed.

At a meeting of the Board of Trustees held on Wednesday, November 30th, 1892, Dr. G. E. de Schweinitz was elected Clinical Professor of Ophthalmology in the Jefferson Medical College. At the time of his election, Dr. de Schweinitz was Professor of Ophthalmology in the Philadelphia Polyclinic and Lecturer on Medical Ophthalmoscopy in the University of Pennsylvania.

Dr. T. S. Cullen (Tor., '90) was in Toronto in the latter part of December. He is still at the Johns Hopkins Hospital in Baltimore, acting as assistant to Dr. Howard Kelly in gynecological work. He says that he and Dr. L. F. Barker are likely to remain in the Johns Hopkins for a considerable time. Dr. Barker is working at medicine and pathology.

Death from Cocaine.

Richardiere records an accidental death from this drug, and states that he has made autopsies in eleven cases in which death has resulted from the injection of cocaine. In his case death followed the injection of half an ounce of a one and one-half per cent. solution of cocaine into the tunica vaginalis testis, preparatory to the injection of iodine for the cure of hydrocele.

The solution of cocaine was withdrawn after less than a minute, and the iodine injected. In a little while the patient returned, complained of great weakness, had clonic and then tetanic convulsions, became comatose, and died with cardiac syncope.

At the autopsy there was found general congestion of the meninges and lungs, mitral insufficiency, and alcoholic lesions in the viscera. The tunica vaginalis did not communicate with the peritoneal cavity.—*Boston Med. and Surg. Jour.*

The New Operating Theatre of Roosevelt Hospital.

An interesting event, and a notable one in the history of Roosevelt Hospital, was the formal opening, on November 3rd, of the new William J. Syms operating theatre. This magnificent addition to the hospital, which is without doubt the most thoroughly-equipped structure of its kind in the world, owes its existence to Dr. Charles McBurney, of the surgical staff, whose representations to the late Mr. Syms secured the funds for its erection and maintenance. It is now about two years since the latter died, leaving in his will the sum of $350,000 for this purpose. Of this, $200,000 has been spent on the building, and the remaining $150,000 will be used as an endowment fund for its maintenance.—*The Medical Age.*

The Eleventh International Medical Congress.

Dr. A. Jacobi announces that the American sub-committee has the following membership: Drs. W. T. Briggs, of Nashville; H. P. Bowditch, of Boston; S. C. Busey, of Washington; C. Cushing, of San Francisco; N. S. Davis, of Chicago; A. Jacobi, o New York (chairman); Norman W. Dingsley, of New York; William Osler, of Baltimore; Wm. Pepper, of Philadelphia; F. Peyre Porcher, of Charleston; Charles A. L. Reed, of Cincinnati; D. B. St. John Roosa, of New York; A. J. C. Skene, of Brooklyn; and James Stewart, of Montreal. The secretary-general informs the committee that the French Railway Company has offered to the members of the congress a reduction of fifty per cent. on its fare.—*N. Y. Med. Jour.*

Immunity to Cholera Conferred through Milk.

M. Ketcher says Ehrlich has demonstrated the possibility of conferring immunity to the poison and infection of tetanus through the agency of the milk of a previously vaccinated animal, etc. We have injected a virulent culture of the comma bacillus into two goats, subcutaneously, intraperitoneally, and intravenously. 5 c.c. of the milk of one of the vaccinated goats protects a guinea-pig against a fatal dose of the comma bacillus, into whatever part the injection be made. The milk of an unvaccinated goat does not possess any immunizing power at all. The milk of a vaccinated goat injected into the peritoneum of a guinea-pig not only immunizes it against any future infection, but even cures an already existing attack of cholera.—*Prog. Médical.*

The Vibratory Chair.

A vibratory chair, on the principle of that recommended by Charcot for the treatment of paralysis agitans, was invented and used by Abbe de Sainte-Pierre, during the latter part of the eighteenth century, for the cure of disease due to sedentary habits and occupations, and for the preservation of health.

It was the outcome of a remark by Chirac, first physician to the king, that one of the most efficacious remedies "against many of the evils attributable to melancholia, to gases, to bile, and to obstruction of the liver, spleen, and other abdominal glands, was a journey of several days' duration in a post-chaise that was rapidly drawn over the pavement."—*L'Intermediaire des Chercheurs et Curieux.*

The Use of Boiled Water by the Ancients.

Whatever theories the ancients may have held as to the corrective action of heat and other agents on noisome substances, it is certain that they made use of them with such corrective action in view. An illustration of this statement is to be found in a paragraph quoted by the *Deutsche Medizinal-Zeitung* from the *Allgemeine Wiener medicinische Zeitung*, in which allusion is made to the statement by Herodotus that in one of Cyrus' campaigns his table was supplied with water from the Choaspus, boiled and transported in silver vessels borne on four-wheeled mule-wagons. This was more than 550 years before the Christian era.—*N. Y. Med. Jour.*

Poisoning by Zinc Salts.

MM. D'Amore and Falgone presented a note on poisoning by zinc salts to the *Société de Biologie.* In doses of 50 centigrammes by the mouth the oxide of zinc brought on vomiting, hemoglobinuria, and albuminuria. Animals generally die before the end of the second week with epithelial lesions, particularly marked in the kidney. The most interesting point is that glycosuria comes on during life, and the same epithelial changes are found in the pancreas as in the other abdominal organs.—*Prog. Médical.*

Grafting a Portion of the Suprarenal in the Frog.

M. Abelous has successfully grafted portions of suprarenal capsule into the muscles of the ilio-coccygeal regions of eight out of thirty frogs. The grafts formed good adhesions in the course of twenty days. He was then able to remove the animal's own suprarenals without there following any of those fatal consequences that had been described by MM. Abelous and Langlois on a previous occasion.—*Prog. Médical.*