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## EXOPHTHALMIC GOITRE.\*

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IN the study of such a subject as Exophthalmic Goitre it would be impossible in the time allotted to me to any more than briefly touch upon the many aspects of this remarkable disease.

The condition was first described by Sir Robt. J. Graves, of Dublin, in the year 1835. The clinical picture which he paints for us is as true to-day as it was then. Let us imagine for a moment Graves in the wards of his Dublin Hospital with his class of students about him the patient is seated on a chair or in bed as the case may be, and as we conjure up this picture let us carry our imagination a little further and listen to him as he describes the case in these his own words:—Here is a young lady, aged 20, who became affected with some symptoms which were supposed to be hysterical. This occurred more than two years ago. Her health previously had been good. After she had been in this nervous state for about three months, it was observed that her pulse had become singularly rapid. This rapidity existed without any apparent cause and was constant, the pulse being never under 120 and often much higher. She next complained of weakness on exertion and began to look pale and thin. Thus she continued a year but during this time she manifestly lost ground on the whole. The rapidity of her heart's action never ceased. It was now observed that the eyes assumed a singular appearance for the eyeballs were apparently enlarged so that when she slept or tried to close her eyes the lids were incapable of closing. When the eyes were open the white sclerotic could be seen to a breadth of several lines all around the cornea. In a few months the action of the heart continuing with unceasing violence a tumor of a horseshoe shape appeared in the front of the throat and exactly in the situation of the thyroid gland. This was at first soft but soon attained a greater hardness though still elastic. From the time it was at first observed it has increased but little, if at all, in size, and is now about thrice the natural bulk of the fully developed gland in a female at the age of puberty. It is somewhat larger in the right than in the left. Discussing the case further Dr. Graves says: The enlargement of the gland of which I am now speaking seems to be essentially different from goitre in not attaining a size at all equal to that observed in the latter disease. Indeed this enlargement deserved rather the name of hypertrophy and is at once distinguished

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from Bronchocele by its becoming stationary just at that period of its development when the growth of the latter usually begins to be accelerated. The description of this case and its publication is the reason why exophthalmic goitre is pretty generally known throughout the English speaking world as Graves' disease. For the same reason continental writers call it Basedow's disease. The records, however, show that it was not till 1840 that Basedow published his history of three cases. From this time on our clinical knowledge of the disease was increased by the observations of various clinicians. The causation or etiology, however, was veiled in mystery. In 1849 Thomas Addison of Guy's Hospital, described in a paper the disease which bears his name and then stated it was due to interruption of function of the suprarenal glands. In 1864 Brown Sequard, of Paris, turned our attention to the possibility of internal secretions in general. In 1875 Sir Wm. Gull described the condition of myxoedema, which is now known to be due to atrophy and loss of secretion of the thyroid gland. These clinical facts, along with a great many others were a stimulus to physiological investigation and these investigations have put the theory of the internal secretion of glands on an established experimental basis. That this secretion of which we are now speaking may become altered, increased, decreased or perverted seems reasonable, and it is with reference to this altered condition in the thyroid gland which gives rise to the subject of our study this afternoon.

#### *Anatomy.*

The thyroid is an unpaired very variable, frequently a symmetrical gland weighing from one to two ounces when in its normal state. It consists of two lateral lobes, an isthmus, the latter has going out from it, usually from the left side, a process variable in form which is called the pyramidal lobe. The gland is situated on the lateral surfaces of the larynx as well as upon the anterior and lateral surfaces of the upper end of the trachea, and surrounds the latter like a horseshoe. It is of bluish red or reddish-yellow color and in embryo possesses a duct the Ductus Thyreoglossus. Later, however, this duct is obliterated and the gland forms a body completely shut off from the surface. A point of great interest is its remarkably free arterial supply. The superior thyroid artery from the external carotid, the inferior thyroid from the thyroid axis and the thyroid media from the innominate. Luschka has estimated that the sum of their transverse sections equals the sectional area of the internal carotid and vertebral arteries of the same side. The veins form a plexus on the surface of the gland and correspond to the arteries. The nerves are derived from the inferior and middle cervical ganglia of the sympathetic.

Sometimes embedded in the gland but more often separated from it are the accessory or parathyroids originally described by Sandstrom in 1880. They vary in number anywhere from two to six and are variously situated. They may occur close to the hyoid bone or as low down as the aortic arch. They are usually paired and at the present time the subject of great interest and painstaking study.

#### *Histology.*

In structure the thyroid gland consists of closed vesicles held together by interstitial connective tissue. Vesicles vary in size, considerably, their walls are made up of cubical or columnar epithelial cells without a basement membrane. Interior of vesicle is filled with a yellow glairy fluid, the so-called colloid material towards the periphery of the vesicles vacuoles are seen. The interstitial connective tissue contains plasma cells and is bathed in glandular secretion, and it is here that the vessels and lymphatics are found. The whole gland is enveloped in a capsule which is continuous with the interstitial tissue. The parathyroids are made up structurally of epithelial columns embedded in stroma of connective tissue and like the thyroid has its own secretion which, however, differs materially from it in its staining qualities and as we will see later on its physiological action.

#### *Physiology.*

Complete removal of thyroid and parathyroids means death not from trauma but from loss of the gland secretion. As we have seen the difference in histological structure between the thyroid and parathyroids so is there a difference in substance secreted, which is shown in various ways. The thyroid secretes a substance which shows chemically three forms of proteid, viz., nucleo proteid, globulin and albumen, together with other substances of lesser moment, viz., the extractives, zavthin, kreatin and kreatinin. In the normal gland the globulin is much in excess of the other proteids, and is the active physiological constituent. This proteid is in combination with iodine and can be isolated as such. When the thyroid gland is removed and its secretion is lost to the system we produce a condition of cachexia strumipriva or cretinism. By the administration of thyroid gland by the mouth or thyroid feeding as it is called the cachexia strumipriva is cured. Instead of the thyroid gland in its described form we can administer the thyro-iodine or the thyro-globulin, and the same result obtains. Administration of the thyroid gland in a normal individual produces a condition akin to exophthalmic goitre, although it does not produce the disease for reasons which I will attempt to explain later.

The parathyroids when removed produces death from tetany in a short time. Its secretion on chemical examination shows similar number of proteids and extractives, but in the parathyroids it is the nucleo proteid than is in excess with a small amount of globulin and less albumen. The nucleo proteid is the active physiological constituent. Experiments carried out by *Beebe* are instructive, viz., the tetany which follows the complete removal of the parathyroids is relieved and cured by the administration of a beef nucleo proteid from the parathyroids. Continued administration has kept the animal alive for as long as three weeks when the control animal died in tetany in as many days. Further, if animals are fasted for a few days or given a meat free diet before the removal of the parathyroids the tetany is very much slower in appearing and less severe when it does appear, and again, if an animal is given a heavy feeding of meat and then submitted to a parathyroidectomy, convulsions will appear very early, say 2 or 3 hours. *Chalmers Watson* in a series of experiments on fowl which were fed from periods ranging from 2 or 3 months up to 14 months on an exclusively meat and water diet shows that in every case there was great increase in size of thyroid and parathyroid glands. The gland secretion was abundant. Great increase in cellular elements with corresponding decrease in interstitial tissue. To complete the experiments of *Beebe*, the animal in the convulsions of tetany is relieved by venesection and saline transfusion and again the blood of the animal is toxic to a normal animal. *Hunt* also states that mice when fed upon thyroid preparations are able to stand much larger doses of acetonitrile than the control animals. These experiments seem to prove that *there is a something in the secretion of the thyroid and parathyroids which in some way renders harmless a toxic material which is the result of the complicated chemical processes occurring in the body following upon the ingestion of a proteid diet particularly meat.* *Beebe* states that it is a well authenticated fact that thyroid feeding stimulates nitrogenous metabolism, and it may be that such a stimulation is accompanied by a heightened oxidative capacity of the organism by which toxic products of metabolism are rendered harmless. *Starling* makes the statement that since the administration of the thyroid gland or the thyroglobulin or thyro-iodine is effectual by the mouth that therefore the result is not due to the proteid since this would be destroyed in the process of digestion, but in all probability is due to the chemical substance in combination with the proteid. He thinks the substance is not toxic, and when it is found will probably be some of the simple chemical bases of which we are familiar. The observation of *Loeb* and *J. B. McCallum* on the effect of calcium in exhibiting the muscular twitchings produced by various salts together with the good effects noted by several observers of milk in preventing tetany after parathyroidectomy suggested the

experiments carried out by McCallum and Voetglin, the results of which were as follows: The intravenous injection of a 5% sol. of calcium, acetate or lactate, almost instantly relieved the tetany after parathyroidectomy, the relief continuing for 24 hours. Magnesium has similar effect although not so efficient. Potash greatly intensifies the symptoms. Bouchard has shown that of the two constituents of normal urine which produce convulsions when introduced into the circulation, one of them is potash. Therefore calcium lactate sol. produce the same results as the isolated nucleo protcid of the parathyroid in the tetany of the parathyroidectomized dogs. Also, potash produces the same effects as a heavy meat diet that aggravates the condition. Meat we know possesses a rich complement of saline matter, 6.7% of which potash is the largest constituent. These experiments seem to support the view of Starling as given above, and further it would seem that the position of the parathyroids with reference to the thyroid is analogous to the position of the Isles of Langerhans with reference to the pancreas, the forms maintaining that equilibrium between the various salts in the circulation, the latter specially having to do with the carbohydrates.

#### *Etiology.*

Exophthalmic goitre is found under very varying conditions. No age seems exempt. Cases are reported in young children. Even old age is not immune. The most cases are found between the ages of 15 and 45. As regards sex the condition is found much more frequently in women than men, the proportion is about 7-1. Climate seems to exert little influence. In localities where simple goitre is common, exophthalmic is more frequent. It does not exact a preference for any race. Even animals contribute their share of victims. *Ries* and others report cases in horses, dogs, etc. Heredity seems to play a small part in this disease. However, there can be no doubt that it is more common in neuropathic families and among persons of a neuropathic tendency. For a long time the question of fright or of nervous shocks seemed to be a causative feature, or any prolonged worry or excitement, those factors which seem to draw strongly on the resources of the nervous system. The acute infectious diseases may predispose to an attack of Grave's disease. Injury to the head may develop an acute attack of the disease, as in one case I had, where patient was thrown from buggy alighting on her head. The simple goitre which had existed seemed to take on all the character and symptoms of acute exacerbation of Grave's disease.

#### *Symptoms.*

The clinical picture of a case of Grave's disease is a striking one. The most persistent of all symptoms is *Tachycardia*. Pulse may range

from 90-100 to 200 or even exceed that. It is a soft compressible pulse. The cardia presents no murmurs, cardiac area may be slightly increased, large area of visible pulsation, palpitation is sometimes very distressing to the patient. Irregular dilatation of the capillary vessels, particularly of the skin, producing flushing and the subjective sense of great heat.

*Exophthalmos.* This is the most striking of all the symptoms to the casual observer. It is absent in about one-third of all cases, and even in many of the other two-thirds it may be so slight as not to attract attention. The prominence is usually bilateral and continuous although in some cases it has been known to be unilateral and differing from time to time.

*Enlarged Thyroid.* This condition is present in most of the cases. The whole gland as a rule is uniformly enlarged. However, some cases present the enlargement in the lobe only or in part of a lobe. The isthmus is usually thickened and the pyramid lobe somewhat enlarged. On *palpation* the gland seems a little bit firmer than usual and possesses a somewhat roughened feel. *Inspection* shows visible pulsation in the gland, and on *auscultation* a loud systolic bruit is heard.

*Muscular Tremor.* This is a most important sign, is almost always present. The tremor (best seen on the fingers) is fine, rapid, 8-10 oscillations to second, is increased by psychic disturbance, may be found only in extremities. *Marie* designates it a 4th cardinal sign.

*Severe gastro intestinal disturbance* is not at all uncommon in this disease, profuse diarrhoea or perhaps vomiting and diarrhoea. In one case I have now diarrhoea has been a very persistent symptom, lasting from the commencement of the disease. Particular articles of diet would appear to be excreted almost the same as ingested, whereas digestion would be perfect with respect to other diets.

*Ocular Signs.* Failure of upper eyelid to follow the eyeball normally in looking downward, *Von Graefe*. Retraction of upper lid on straight-forward vision revealing some sclera above cornea. (*Stellwag*.)

Infrequent and incomplete involuntary winking, *Stellwag*. Inability to hold the eyes in convergence, *Moebus*. Other signs such as difficulty in everting upper eyelid, pigmentation of upper lids, failure of forehead to wrinkle on looking up, tremor of eyeballs, etc.

*Unusual psychic disturbances* always present. Patient is usually fretful, nervous, sleeps poorly, very irritable, sometimes violent and will even become maniacal. The urine shows chemical changes. Increase in quantity of urea nitrogen output. Kreatinin is increased, whereas the kreatin is decreased in amount. The calcium output is increased. Polyuria may sometimes be present. Together with these above noted, we have great loss in body weight, 50 or 60 pounds in a short time is a

not an unusual loss. Great fatigue, diminution in the menstrual flow in women, blotchy erythema in the skin, profuse sweating. A fact that has been noted, and which I myself have seen, is that the patients are always worse in the morning.

#### *Diagnosis.*

The diagnosis of this condition is not as a rule difficult where we have the combination of tachycardia (or pyncocardia as Barker calls it). Enlarged thyroid and muscular tremor, whether with or without exophthalmos, the diagnosis is decisive. But it is in the early periods of the disease the so-called larval phase, that one meets with difficulty. Where we have a rapid heart—(without any other assignable cause), the possibility of this condition must be entertained, and suppose this happens to be in neurotic patient. Closer examination may reveal a fine muscular tremor. Pursue your investigation further and you will most likely be rewarded by finding a slight increase in size on the thyroid. When you can with safety make the diagnosis, the recumbent position seems to accentuate the condition.

Barker says we may have the symptoms of exophthalmic disease superimposed on an ordinary colloid struma in which event the symptoms are mitigated and the thyreotoxic phenomena will subside with rest in bed and appropriate treatment. We must be careful to differentiate this class of cases.

Sometimes we get an acutely pulsating simple goitre with practically no thyreotoxic phenomena so that this condition must be weighed. Moreover, we may have a cardiac condition which is very like unto the goitre heart, but is due to the mechanical pressure of an ordinary struma. This struma may extend through the superior aperture of the thorax pressure, symptoms may be referred to the heart or respiration or venous circulation, so that in these conditions we must differentiate between the thyreotoxic heart and the cardiac condition resultant upon pressure. And lastly, we may have exophthalmus due to intracranial or intraorbital growths such as retrobulbar growths, sinus disease and abscess, aneurism, etc. Further, we must remember that we may have a hyperthreosis in other conditions such as chlorosis of young girls, etc.

#### *Pathology.*

The pathological findings in this condition are very inconclusive. The only lesions which are palpable and constant are found in the thyroid, lymphoid apparatus and thymus. Various observers have endeavored to find an explanation of this condition in the cervical ganglia of the sympathetic, but the results are very indefinite. McCallum states that in

two cases he has studied the cervical ganglia carefully and has found no pathological alterations, unless the presence of a number of shrunken deeply stained ganglian cells in one section could be looked upon as such. He is not disposed to attach much importance to this phase of the subject. In anatomical studies of the central nervous system, in this condition some cases showed atrophy or destructive lesions in the corpora restiforma some cases hæmorrhage in the medulla, but by far the greater number of cases showed no abnormality so that at best these lesions were very inconstant. In animals after excision the portion remaining becomes hypertrophied and microscopical examination shows the changes therein taking place are very similar to the thyroid of an acute exophthalmic goitre. The thyroid is enlarged in most cases, normal in some and may even be decreased in size. The superficial veins are enlarged, distended and easily torn (when gland is in situ), it is hard and elastic to the touch, somewhat nodular and the fresh cut surface is usually dry and granular. Microscopically strands of fibrous tissue run in every direction and separate tissue on lobular masses, and in these lobules the alveoli are often still separated by fibrous tissue stroma more abundant than in the normal gland. In the central part of each lobule are large alveoli irregular in outline and ranged around this large alveolus are smaller ones variable in size and irregular in outline. The epithelium is usually columnar and occupies so much space that the lumen of the alveolus is almost obliterated especially in the smaller ones. In most cases the epithelium is regular in form and filled with a granular protoplasm, nucleus may be near the base or free end of the cell. Sometimes peculiar alteration in the cells are found. They are enormously swollen, irregular shapeless masses of fine granular protoplasm. Usually one or two alveoli show these cases or sometimes one or two cells in each alveolus. Their significance is far from clear. The colloid varies greatly in severe cases, seems markedly decreased in amount and altered in quality. The parathyroids in sixteen cases examined were practically normal, in six cases there was increase in fibrous stroma running through the tissue like a network and very similar to the conditions found in the thyroid itself. The thymus is enlarged and the same as you will find in a child before retrogression takes place.

#### *Treatment.*

##### I. Medical. II. Surgical.

The management of a given case of Grave's disease depends largely on the stage of disease and the extent of the intoxication, but, generally speaking, the treatment of a case will be dealt with from an hygienic, dietetic, medicinal and specific standpoint. The rapid pulse and great

tissue waste suggests the advisability of *rest in bed* with *abundant proper nutrition*. The degree of rest varies in different patients and in the same patient from time to time, and ranges from absolute rest to a mere restriction of activities. Mental rest is essential as well as physical. In some cases the mental rest is the essential, whereas considerable physical activity may be allowed. The individual merits of the case must be the sole guide. The diet must be abundant, nutritious and adapted to your patient, as some patients in this disease show a marked selection in diet with reference to its digestibility. Generally speaking a meal diet I would interdict, a small amount of white meat and fish may be allowed. Milk should be taken freely and form the basis of a very variable diet. Baths of various sorts and kinds have been suggested and used by some with but little effect. Electricity has been employed, the galvanic, faradic and static current, and still exophthalmic goitre exists. The medicinal treatment of this disease occupies a wide range and includes nearly all the drugs in the pharmacopœa. *Calomel, say once a week with a saline (say phosphate of soda), each morning facilitates elimination and I am sure does good. Iron and arsenic in anæmic cases are indicated.* Outside of these mentioned are the cardiac vascular tonics, digitalis, strophanthus, convallarea, the nervæ sedatives, the bromides, and others, such as quinine. The salicylates, antepyrin, phenaceline, etc. These may be indicated at some time during the course of the disease. They are only used to meet special conditions, and depend for their use largely on the skill and judgment of the administrator. The glandular extracts, the thymus, the suprarenals, the thyroid, etc., are and have been in use for some time. In regard to all of them one finds favorable reports. In acute thyroidism the administration of the thyroid gland is positively harmful. Cases, however, are cited where the symptoms of Grave's and a myxodomatous condition coexist in the same patient. A transitory stage, as it were, and it is here that I believe the administration of the desiccated thyroid would do good. Solution of adrenalin does good in relieving tachycardia to some extent.

#### *Surgical.*

Barker makes the statement that in our present state of knowledge and practice that once a positive diagnosis of exophthalmic goitre has been made operative procedure is indicated.

Kocher, Sen., of Berne, has operated for goitre 3,460 times up to date (October 1st, 1907). Of these, 315 have been on 254 patients afflicted with the exophthalmic disease. This is a wealth of experience which enables a man to speak. Of the 254 patients operated on for Grave's disease there were nine deaths. Of the last 91 operations on 63

cases there was not one single death. Mayo, of Rochester, reports a series of 176 cases with nine deaths. Each case should be studied on its own merits. The time to operate as well as the extent of the operation is determined by the condition of the patient with particular reference to 1st. Condition of the cardia. The heart is dilated, but is there any compensatory hypertrophy taking place? If not, absolute rest and medical treatment is indicated. What is the blood pressure? If there is a compensatory hypertrophy blood pressure will be raised and a blood pressure of 195 mm. Hg. does not contraindicate surgical intervention. Second, what is the extent of the intoxication as is evidenced by the symptoms, viz., sleeplessness, diarrhœa, vomiting, tachycardia and pulsation in the gland, and 3rd, what does the blood examination show? In most cases you find an increase in the number of the lymphocytes with a decrease in the polynuclear form. The total number of leucocytes is usually at or about normal. The absence of a lymphocytosis is indicative of very early case or recovery in an longstanding case.

As to the extent of the operation, both Kocher, Mayo, and in fact most operators agree that the least amount of hæmorrhage with the least amount of manipulation is absolutely essential. Better do your operation at two or three stages or sittings rather than all at once.

In conclusion, gentlemen, let me say that in the brief resume of the subject I have given you here I have but touched the frill of the garment, so to speak. When one considers that men are spending their whole time for years in the study of the parathyroids alone, one will get a more comprehensive idea of the magnitude of the subject, and this idea having been once attained my feeble attempt here put forth will not be censured too severely.

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### PUERPERAL SEPTICEMIA.\*

By ADAM H. WRIGHT, B.A., M.D., Professor of Obstetrics, University of Toronto.

OBSTETRICIANS' were slow to learn that puerperal fever is simply an ordinary surgical infection. Hodge and Meigs could not learn from Oliver Wendell Holmes in 1843 that it was a private pestilence contagious in character. The obstetricians of Vienna could not learn from Semmelweiss in 1847 that it was caused by the introduction of putrescent substances from without. Fordyce Barker could not learn from Pasteur and Lister in 1880 that it was a wound infection, not a specific disease. Fortunately all doubts on the question have ceased to exist, and are interesting only as matters of history.

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\*Read before the Ontario Medical Association, Hamilton, May 27, 1908.

One cannot, of course, discuss in a short paper all the methods of treatment in vogue. I shall to-day refer simply to a few points in the diagnosis and treatment of puerperal infection. On the whole, the treatment is far from satisfactory; but it is well to consider that puerperal septicemia, in all its forms, is a curable disease. Optimism is better than pessimism in a sick room. One helps much, while the other always depresses. The treatment of puerperal infection should commence before a positive diagnosis is made.

Let us consider a case of puerperal infection from a clinical standpoint. One of the most scientific and practical obstetricians of the United States has told us that, "In the cases of septic endometritis everything goes smoothly for the first three or four days of the puerperium, when the patient suddenly experiences more or less malaise, possibly has a chill, after which the temperature rises to 103 F. or higher." (Williams.) A statement, such as this, coming from a teacher we all admire and respect, if not correct, is likely to do much harm. Some of us hold the opinion that it is not correct. Things never "go smoothly for the first three or four days of the puerperium" in a case of puerperal infection. We may find on the morning after labor that the patient has not slept well, because, as she says, "the baby has cried a good deal," and because of this she says she has a slight headache. Here are two symptoms of puerperal septicemia, and their discovery should make us pause, and think, and investigate very carefully. Let us suppose that pulse and temperature are normal so far as we can ascertain; but, in addition to the insomnia and headache, the tongue is slightly coated and the patient looks slightly tired. Here are two more symptoms of infection. We find nothing abnormal in abdomen, uterus, bladder or lochia. Can we make a diagnosis now? No, but we can, and, I think, should commence treatment at once. I prefer to give one grain of calomel every hour, or half hour, for three doses, and follow in due course with saline cathartics. It is now pretty generally agreed that supporting treatment should be carried out, and that persistent attempts should be made to neutralize and eliminate the poison. The coal tar products are not popular on account of their depressing effects.

A few words as to the use of opium may now be in order. Forty years ago opium was administered in large doses in all cases of septic peritonitis by such men as Alonzo Clark and Fordyce Barker—the one a giant in medicine, the other a giant in midwifery in New York. Twenty years ago Lawson Tait, the giant in surgery in Birmingham, objected absolutely to the use of opium in large or small doses. The almost general adoption of his views, especially on this continent, was a most remarkable thing, and, in the interests of suffering humanity, the most unfortunate thing I have ever known. To withhold opium from a woman

suffering agony from intra-abdominal inflammation, because it may "mask symptoms," has never appeared to me either scientific, practical or humane. The subject, however, is too big for discussion in the time now at our disposal. I have only time to express my personal opinion that opium should always be given when there is pain, and in sufficient quantities to stop the pain. This may mean the administration hypodermically of one grain or more per hour. I think this always does good, and frequently prevents a pelvic peritonitis from becoming a general peritonitis. It is well to know, however, that the opium treatment is not generally understood—indeed, I fear, is generally misunderstood. This was well illustrated in the following case: About four years ago a primipara had puerperal septic peritonitis. I met the doctor in charge (a very careful and competent practitioner), and with him an able physician, and a well-known professor of surgery. The physician recommended morphin, and the doctor in charge and I at once agreed. The surgeon also acquiesced, and recommended one-sixteenth grain of morphin by mouth every three hours. I recommended a half grain hypodermically, to be repeated in one-half hour if pain continued. The result was a compromise. She got a sixth grain by the mouth every three or four hours. This did not relieve the pain, and therefore did no good. It may be thought that small dosage will do no harm. After a careful study of such aspects of the administration of opium, I have come to the conclusion that small doses which do not relieve the pain cause nausea, headache, and constipation; while large doses, which do relieve the pain, are not followed by these unpleasant symptoms, do not cause paralysis of the bowels, and tend to assist elimination of the poison, instead of preventing it. As a matter of history it is interesting to learn that that distinguished Irishman, Colles, depended chiefly on calomel and opium in his treatment of puerperal fever seventy years ago. It would appear that opium has gone out of fashion twice in the last hundred years. To those who wish to investigate this matter I should recommend a perusal of Clarke's article on "the opium treatment," which appeared in "Pepper's System of Medicine by American Authors," published in 1885; or Charles G. Stockton's article, published in the *Buffalo Medical Journal*, February, 1908. It is probably more satisfactory, although not necessary, to give the calomel and salines before administering the opium.

The importance of early recognition of the symptoms, and prompt treatment during the second and third days, cannot be overestimated. During this time, we are not able to obtain much benefit from examinations of the uterine discharges and the blood.

Let us suppose that on the second or third day there are febrile disturbances and a foul lochial discharge, not due to retention in the vagina through faulty position of the patient in bed, but to putrefaction within

the uterus. This is generally recognized as a curable condition, but it is better to act promptly before the parasitic germs, if any there be, become active. We can scarcely be certain in any case that streptococci are not lurking around somewhere. Intra-uterine douching every four or six hours for some days is, I think, not advisable. It is better to get an assistant to administer an anesthetic, and, with the usual antiseptic precautions, to introduce the gloved hand into the vagina, two fingers into the uterus, scrape away the debris, wash out with hot salt solution, pack the uterus somewhat tightly and the vagina rather loosely with iodoform gauze. The gauze should be removed in twenty or thirty hours. As a rule, no bad symptoms will recur.

Let us suppose that on the third or fourth day all the symptoms point to puerperal infection, and we make our diagnosis. In addition, bacteriological investigation may show the kind or kinds of pathogenic germs which are found in the uterus, or blood, or both. Let us consider especially streptococcal infection. Surgical procedures will be considered. Shall we use that deadly weapon, the metallic blunt or sharp curette, which has been so frequently employed during the last twenty-five years with such disastrous results? Some say that in using the curette the protective zone is disturbed, and as a consequence the infection spreads. A distinguished surgeon in New York says that he has "often pointed out the fallacy of such reasoning." Personally, I have been unable to discover the fallacy. I am not sure, however, that it is advisable to use the term "leucocytic zone," or "protective zone." Let us consider the matter from an ordinary surgical standpoint. Nature covers what may be called a surgical wound inside the uterus with granulations within, say, four days, and this granulation surface is practically non-absorbent. Any injury to these tender granulations opens small vessels, which readily absorb the germs which by this time exist in the uterine cavity. Grave dangers may therefore arise from any sort of intra-uterine manipulation. Without discussing the various points that would naturally arise in this connection, I, for the sake of brevity, simply express the opinion that the metallic instrument should never be used in cases of suspected or actual septic infection. In addition, I would say that not even the fingers or douche nozzle should be introduced within the uterus after the fourth day of the puerperium.

If we go back ten or twenty years many of us will remember that the metallic curette was used by nearly all obstetricians on this continent in cases of puerperal fever at any of its stages. Some went so far as to remove the endometrium completely down to the muscle with a sharp curette. There has been quite a reaction against such treatment, and I think but few in Canada or the United States approve of it now. It would appear, however, that many surgeons in England favor it. Kuy-

veth Gordon, of Manchester, tells us in a recent number of the *British Medical Journal* that he treats all such cases in this way with good results. After curetting, he goes over the raw surface thoroughly with swabs of undiluted izal fluid, and then packs the uterine cavity. It is strange that a form of treatment that has proved such a failure on this continent should be so successful in England. Even in that country, however, I think only a few approve of such radical measures.

The question of irrigation of the uterine cavity naturally arises in this connection. Abdominal surgeons have learned that irrigation is harmful in septic peritonitis caused by appendicitis. Many general surgeons believe that irrigation is useless, and perhaps harmful, in the treatment of empyema, and that free drainage is the all-important means of cure. Years ago I reported cases where in the hands of careful and conscientious obstetricians intra-uterine douching every four to six hours caused serious symptoms, which disappeared rapidly on discontinuance of the douching. It seems that the uterus, during both pregnancy and the puerperium, is hypersensitive, and an intra-uterine douche shortly after labor, no matter how carefully administered, will generally cause pain, rapid pulse, and rise in temperature. If then we are guided by the results of clinical observations of surgeons and obstetricians, we conclude that irrigation is not called for at any stage. The only apparent exception is the single irrigation recommended for sapræmia, which is only incidentally considered in this paper.

Drainage, as understood by the surgeon, is very important in these cases. Thorough drainage from the uterus with the patient lying on her back on a level bed is impossible. For some years I have endeavored to promote drainage by turning the patient on her belly frequently, and keeping her in this position for a few minutes. If the patient, as frequently happens, prefers to lie on her side, the drainage is fairly good, and is very good if she turns frequently on her belly or nearly so. Generally speaking, it is better for the patient to assume the sitting posture when she has evacuations from the bladder or bowels. The bedpan is generally, if not always, an abomination in obstetrical practice. If the patient is inclined to lie constantly on her back, the head of the bed should be elevated not less than six inches, and in addition the patient's shoulders should be raised on pillows, and she should be lifted into the sitting posture or nearly so as frequently as possible.

If, however, there is any suspicion of peritonitis, it is better to carry out the methods of many surgeons in the treatment of general suppurative peritonitis by keeping the patient in the position recommended by Fowler—*i.e.*, sitting up in bed, or nearly so, for two or three days. We know that peritonitis low down is much less serious than inflammation in the upper part of the abdominal cavity. The upper

part of the abdomen is the favorite zone for absorption, and the object of the Fowler position is to cause the various fluids to gravitate to the lowest part of the peritoneal cavity. This position therefore does two things: 1. It helps drainage from the uterus; 2. it tends to prevent general peritonitis.

The value of rectal and subcutaneous injections of salt solutions is so generally recognized that no comment is necessary. Murphy tells us, however (and many agree with him), that the proper method of proctolysis is to allow the saline to trickle slowly into the rectum. He uses an ordinary vagina douche tip with three openings. The object of the extra openings is to "allow gas to bubble back into the can" as the water is pouring into the rectum. The elevation of the can should be from four to six inches above the anal level. "The nurse must be instructed to watch the patient closely, and not allow more than one pint and a half of the solution to flow in forty minutes to one hour. The tube can be strapped permanently to the leg of patient with adhesive plaster, a hot water bottle being used to keep the solution in the fountain warm. Every two hours the nurse pours in hot salt solution. There is no irrigation of the rectum. The patient may sleep while the procedure is going on, and the tube is retained for days."

In my own practice I have found that the retention of the tube causes much irritation, and I have generally ordered a pint to be injected every three or four hours. I have also thought that the injection of very large quantities of the solution is not advisable.

Membranous patches in the vagina are more common and more harmful than is generally supposed, and should always be looked for. When found they should be treated by applying strong lysol or carbolic acid twice daily.

Collargol was so highly extolled a few years ago that many of us expected much good from its use. I have no experience as to intravenous injection of this drug, and was very glad when Loeble and Schlisinger told us that rectal injections were as effective as the intravenous injections. For some years I used Crede's ointment, but during the last four years I have used rectal injections in a way recommended to me by Dr. McIlwraith—one teaspoonful of a freshly made 5 per cent. solution of collargol in a little milk, to be injected three times in twenty-four hours. I am not sure that I ever found any decided benefit, as I have never depended on it alone. However, I have enough confidence in the drug to still use it in many cases.

Only a brief reference will be made to Marmorek's antistreptococcic serum. It will be remembered that in 1899 the American Gynecological Society and the British Medical Association, both practically condemned it at their annual meetings. Notwithstanding such condemnation, many

surgeons and obstetricians believe that it is beneficial in certain cases. I hold the opinion that this serum saved the lives of six patients I have seen during the last ten years. It has seemed to me that it is most likely to benefit the patients who have acute streptococcic infection, but I have to state that in many cases it did no good; sometimes, I fear, it has done harm.

It is well known to many of you that I had a serious septicemia in the fall of 1900. Although I have published something about this before, I shall ask you to allow me to repeat my story respecting my sensations produced by the injection of this serum. It was injected at a time when I was suffering from intense pain, which was but little influenced by morphin. The pain appeared to be deeply seated in or near left hip-joint. After the injection I gradually experienced a sensation as if something were warming the congealed blood within my heart. This warm blood, as it seemed to me, soon commenced to flow in all directions, causing a delicious feeling of rest and peace, followed shortly by an inclination to take some interest in my surroundings and a desire to live. It appeared to me at the time that the serum brought me back to life.

The inhalation of oxygen is useful at times. Probably the method adopted and taught by the late Dr. W. T. Aikins, a surgeon who was wonderfully ahead of his times in many respects, is the cheapest and best as a general rule. This method was to secure thorough ventilation in every room in which he had a patient. He thought an abundance of free air would provide all the oxygen required, and he considered this one of the most important points in the treatment of any disease.

Physicians and surgeons are hoping for good results from inoculation with bacterial vaccines by Wright's method. As explained by Dr. Ross, the principle involved is that a vaccine consisting of devitalized bacteria of the same strain as that responsible for the patient's infection should be administered by subcutaneous injection in correct doses at appropriate times. The Toronto General Hospital is peculiarly fortunate in having at the head of the Department of Immunization and Research Dr. George W. Ross. The reports already published by Ross are very encouraging. Dr. McIlwraith and I believe that he cured an acute systemic infection (puerperal) last winter. Further details as to this and other patients treated by him will be very interesting.

As to pus collections, there is a general consensus of opinion that they should be evacuated as soon as possible. It was supposed a few years ago that patients suffering from diffuse suppurative peritonitis always died. It was found that operative interference sometimes produced a favorable result. It was then laid down as a law that in such cases the abdomen must be opened, washed out with salt solution and drained. Now the rule with surgeons who are having marvelous suc-

cess is to open and drain without any irrigation. It may be noted at this stage that, so far as this paper is concerned, irrigation is absolutely condemned, excepting in cases of sapremia before the fifth day of the puerperium, and in these cases only one irrigation is recommended.

Some years ago it was hoped that hysterectomy might accomplish a cure of infection in certain cases. I have never seen a case in which I thought this operation was indicated, and I don't expect that I ever shall. While I have great admiration for some of the men who perform this operation for systemic infection, and have critically examined their arguments, I now think that for such purposes it is never advisable.

The points touched on in this paper may be summarized as follows:

1. Some symptoms of sepsis always appear within twenty-four hours after infection.
  2. When symptoms are discovered eliminative treatment should be commenced. Calomel and saline cathartics are recommended.
  3. If pain arises, opiates in sufficient doses to relieve should be given.
  4. In cases of septicemia nothing should be introduced into the uterine cavity, especially after the fourth day of the puerperium; but free drainage should be secured.
  5. Salt solutions should be injected into the rectum and under the skin.
  6. Membranous patches should be looked for and treated when found.
  7. Collargol is highly extolled by some surgeons.
  8. Inoculation with bacterial vaccines is recommended in certain cases.
  9. All pus collections should be opened and drained, but not irrigated.
  10. Hysterectomy is not recommended.
- 30 Gerrard St. East.

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### CEREBRO-SPINAL MENINGITIS, WITH REPORT OF CASE.\*

By A. R. GORDON, M.D., Assistant Physician Toronto General Hospital.

**G.** M., aged 4 years, a strong, healthy child, with good family history and no previous illness. My purpose in presenting this case is as an illustration of one of the special types described, to call attention to some peculiar features manifesting themselves during the progress of

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\* Read at the meeting of the Ontario Medical Association. 28th May.

the case, and to demonstrate fairly satisfactorily the benefit of the opsonic treatment. The clinical forms described may be classified as follows:—

1. The malignant form, in which the victim complains of headache, nausea, vomiting, with fever, and rapidly developing coma, terminating fatally in the course of 12, 24, or 36 hours, or possibly, a few days. So rapid in its progress is this form that many of the characteristic signs, Kernig's reflex signs, paresis, etc., do not develop.

2. A form not so malignant, where, after the onset of the first symptoms mentioned above, there may be stupor, delirium, retraction of the head, opisthotonos, Kernig's, paresis of certain muscles, face and eye muscles for example, finally developing into the ordinary clinical form, as usually seen.

Koplik, in Osler's system, calls attention to the fact that early in such cases there may be a condition of collapse, when all spastic signs disappear, and after such shock passes off, the above clinical picture develops.

3. A form which is characterized by marked remissions, both in the signs and symptoms of the disease. To this class belongs the case which I propose to report.

The chart showed that this was very characteristic of this case from the beginning of the second week. During such remissions, especially in the second and third weeks, the child would appear quite comfortable and comparatively well. The restlessness and peevishness would disappear. Nourishment would be taken freely; but, with the rise of temperature, restlessness would return, then would become irritable, refuse food, gradually become drowsy, passing into stupor, and remain in such a condition till the next period of release.

These remissions would sometimes last for 10 or 12 hours, but oftener for 24 hours, nor did they appear to bear any relationship to the time of day, but rather signified the child's resisting power and his capability of manufacturing his own antitoxin.

The chart showed the remarkable regularity in the rise and fall of the temperature, and also the remarkable equality of time of the periods of attack and recession.

During the first week, however, we have an entirely different picture, and for the sake of reference and conciseness, I will deal with the case in periods of weeks. On the evening of 29th December, 1907, the child complained of headache, was restless, vomited, and was in high fever.

On 30th December, when first seen by me, he complained of severe headache, chiefly occipital, with a pulse of 114, respirations of 52, and a temperature of 102° F.

On examination, I found the upper left thorax absolutely immobile, some impairment of the percussion note, suppression of breath and voice sounds over this area. There was some fixity of the head, and what with the sudden onset and the pulse, respiration and temperature conditions, I looked upon it as a case of left upper lobe pneumonia, and the fixity of the neck muscles as evidence of the pseudo-meningitis commonly found in that disease.

During the succeeding five days, the respirations varied from 52 to 62, the pulse from 112 to 125, and the temperature from 100° F. to 104 1-5° F, chiefly running between 102° and 103° F.—all typical of pneumonia.

During the next three days there occurred what might be considered a lysis, but the confusing feature was the failure to recognize the more fully developed signs of what I took to be a pneumonia. There never was any definite evidence of consolidation, no cough, and the breath sounds never more than broncho-vesicular. The respiratory movements, after the fifth day, gradually became normal, so that by the eighth day the expansion was good, the excursion of the chest equal on both sides and normal, and resonance and breath sounds were fully restored.

The rigidity of the neck and the occipital pain persisted, however, and the general condition of the child was not improving.

About the beginning of the second week, Kernig's sign was observed for the first time in the right leg, with absence of the knee jerk. Double Kernig's sign, with absence of reflexes on the following day and the Babinsky dorsiflexion necessitated a correction of the diagnosis, when the condition of things was apparent.

Then followed the period of remarkable remissions and exacerbations, already referred to, extending over the succeeding six weeks.

On 14th January, 1908, about the end of the second week, lumbar puncture was done, but no fluid obtained. The puncture appeared to have no beneficial effect, as is sometimes the case when tension is relieved; but Kernig's sign was rather more pronounced immediately afterwards.

By the end of the third week, the child began to show marked signs of exhaustion and failure of recuperation during remissions; and on 24th January, a second puncture was made and a small quantity of milky fluid obtained, from which and from the blood the specific organism, the diplococcus intracellularis was obtained, grown and utilized by Dr. Caulfield in the specific treatment of the case. The first injection of vaccine was given three days later on January 27th.

The condition at this time was very serious. The spastic symptoms had increased, Kernig's sign more marked, and Babinsky position in both feet. Pains in the legs, apparently in the course of the great nerves,

pain in jaws, affection of cranial nerves, photophobia, some deafness, occasional strabismus, vertigo, some left facial paralysis, difficulty in swallowing, drowsiness and stupor became more marked.

The child only with difficulty could be aroused and persuaded to take nourishment, often absolutely refusing everything and objecting to any and every attention.

Following the first vaccine inoculation the temperature range was distinctly modified, but little change in the condition otherwise. The second inoculation was followed by more marked control of the temperature for four days (February 1-4) with general improvement clinically. This was followed by a relapse into the former condition, with recurrence of the typical temperature and general exacerbation of symptoms.

On 6th February, strabismus was marked, also the spastic condition of the legs. Involuntary stools, delirium, more continuous, the pulse 140, respirations 40-48, and the temperature 104° F.

February 7th there was oedema of hands and feet, and some peritoneal effusion. Oedema of the face was marked, especially after sponging.

On February 16th, the peritoneal fluid was up to the line of the 9th costa when in the dorsal position. The pulse was 156, the temperature 105° F., and the respirations 54. Some oedema of the lungs was noticed.

February 18th the pulse was 158, the temperature 104 3-5° F., and the respirations 42. There was evidence of circulatory failure as shown by the oedemas and serous affusions. Then followed a definite improvement, as shown by the history of the case, which became continuous.

February 20th, the body was much more supple, the oedema slight, crying tears for the first time were seen. The rigidity of the neck muscles was now gone.

February 21st, Kernig's sign and dorsiflexion almost disappeared.

March 17th, recovery complete.

There are but two or three points to which I wish to refer:—

1. The pseudo-pneumonia condition, if you will permit the term, characterizing the onset of the disease.

On looking over the literature of the subject, I find many references to pneumonia as a complication, but no reference to such a condition as was present in this case.

In a case of a young girl suffering from tubercular meningitis in the Toronto General Hospital, a few weeks ago, I noticed the same condition and called the attention of several of my colleagues to it. There was complete immobility of the left thorax, some impairment of resonance, marked suppression of breath and voice sounds, but no evidence of consolidation. The condition gradually passed off in the course of three or four days. This might quite truly be called a pseudo-pneumonia. There would be some atelectasis of the lung, but no true pneumonia.

The explanation is difficult. Many may be suggested, such as a paralysis of the respiratory centre, a sympathetic nerve paralysis, a paralysis of the spinal nerve supply of the muscles of respiration, or a neuritis of the nerves supplying the muscles of respiration, similar to that which is very common in the sciatic and brachial nerves in cerebro-spinal meningitis. To me this is the most acceptable explanation.

2. As to treatment, other than specific, a few words may be said. The restlessness and irritability were controlled both by the warm sponge, and the warm pack. They appeared to have little influence upon the temperature. The constant application of the ice bag to the head appeared to be comforting.

During the early period, the bromides were quite effective, but later on had to be supplemented with morphia.

Then followed a period of stupor when the sedatives were not required. This period was followed in turn, as the stupor lessened, by a period of restlessness and extreme irritability, when recourse was again had to the bromides. Morphia is condemned by some authorities in this condition, but in this case it was invariably followed by good results.

I did not use the intravenous injections of collargolum, as I was afraid of it. We had used it in two cases successfully in the Toronto General Hospital with adults, but in one case it produced intense headache, rapid pulse, sudden delirium, and great dyspnoea after a dose of 3 grains. Two days later a second dose of 3 grains was given with a repetition of the symptoms, while, on the other hand, the second patient took as much as 22 grains during the course of the disease with only slight headache and slight increase in pulse rate. In both cases, however, it was thought to have had a good result and to it was attributed the cure of the disease.

The serous effusions and the oedemas, indicating vasomotor paresis, gradually disappeared as the vascular tone improved to which end the calcium salts, strychnine, digitalis, and atropia were used, the latter appearing to have an exceedingly good effect.

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#### DISCUSSION.

Dr. F. Arnold Clarkson remarked that few of us see many cases, but every decade or so an epidemic sweeps over the country, destroying the majority of those it visits and leaving the rest maimed, blind or deaf. The very existence of our institutes for the deaf and dumb is due largely to this disease.

It seems fitting that we should be discussing this subject this morning for it is just about a century ago since cerebro-spinal meningitis was

first described as a clinical entity. Since then we have had many remedies recommended. We have tried bleeding, purging and blistering, but with the same lack of success. Then we had lumbar puncture but it is only applicable to a few cases; and now serum therapy and vaccine treatment are on trial.

The disease most like meningitis is pneumonia. And yet there has been no successful serum prepared for pneumonia, nor has the vaccine treatment been very successful. But in spite of these academic reasons, the fact remains that there have been many successful cases from its use. We can all use the serum whenever a case presents itself because it fulfils the first requirements of therapeutic agents.

By combining the serum and the vaccine, I hope we may be able to turn the mortality tables the other way.

Dr. Harrison, Selkirk, described his experience with cerebro-spinal meningitis dating back over 40 years, mentioning especially 4 or 5 cases which lasted from ten to fourteen weeks, eventually having a fatal termination.

He would welcome anything which would prove to be a curative agent in this condition.

Dr. John Hunter, Toronto, thought we should not be too pessimistic. If only one case in a hundred recovers that case may be yours and seize your opportunity. You who have the privilege of practising in the country use the orchards, get a hammock in the daytime and a tent for the night, a pail of cold water, a few sheets, and a rational nurse and you may win out in the worst kind of cases.

We should welcome every advance in scientific medicine. We should cheer the men who are striving by the use of serums to lower the awful mortality in cerebro-spinal meningitis. The serum should be used in every case when it can be obtained, but do not throw up your hands if you are away from the possibility of obtaining the serum. Give your patient the full benefit of outdoor treatment, common sense and fresh air.

Dr. B. A. Cohoe, Johns Hopkins, Baltimore, said there have been some twenty cases of epidemic cerebro-spinal meningitis in the Johns Hopkins Hospital during the past year, all of which have been treated with Flexner's serum. In only three of the cases did death result, one of these being a fulminating case.

In the year preceding, before the use of the serum, the morality was about 90 per cent. It has been the custom to use from 15 cc. to 30 cc. of the serum on three consecutive days following admission to the ward, following which there is usually a fall in temperature, and a marked amelioration in symptoms. Frequently following the injection of the serum there is a marked increase in the leucocytes in the spinal fluid.

## A FATAL FORM OF ECLAMPSIA.\*

By K. C. MCLWRAITH, M.B., Chief of Obstetric Service, Toronto General Hospital,  
Associate in Obstetrics, Univ. of Tor.

**M**R. *President. Ladies and Gentlemen*,—Before entering upon the special subject of my paper, let me remind you, briefly, of certain points in the diagnosis of eclampsia. *Ante-mortem* there may be some difficulty, for convulsive seizures during pregnancy may be due to chronic Bright's disease, to epilepsy, to hysteria, to brain lesions or to certain poisons; and on the other hand the patient may suffer and die from eclamptic toxæmia with few or no convulsions. *Post mortem* there is no difficulty, for one lesion is always found in eclamptic toxæmia and in no other condition, namely, thromboses of the radicles of the portal vein, with peripheral degeneration of the hepatic lobule. Through the kindness of Professor MacKenzie I am enabled to show you some specimens of this lesion, and also, in contrast, to show you some specimens of a central degeneration of the liver lobule, such as occurs in acute yellow atrophy of the liver—another form of pregnancy toxæmia. Of the so-called "eclampsia without convulsions" I have no experience, but the condition is well described by Dr. Siemons in the Johns Hopkins Hospital Bulletin for November, 1907. His first was a post-partum case. The patient had had albumen in varying amounts in her urine for a month before labour. She was confined one afternoon and the next morning the nurse found her awaking partially when spoken to. Saline transfusion and sweat baths were tried, but the coma gradually deepened and the patient died. In this case, in addition to the characteristic microscopic appearance of the liver there were extensive subserous hæmorrhages on the surface of that organ. The brain was not sectioned.

In his second case accouchement forcé was performed at 7 months and saline transfusion was used. The history was the same—no convulsion but a coma gradually deepening until death. Cerebral hæmorrhage was found. The blood pressure before death reached 205 mm.; the ammonia coefficient was 6.8. There was tubular inflammation of the kidneys and characteristic liver lesions.

Siemons quotes Schmorl to the effect that the ordinary prodromal symptoms of toxæmia are usually present, sometimes for months, sometimes for a few days only. Eye lesions seem especially significant. The patient first becomes drowsy, then semi-conscious, then comatose and finally dies.

Post mortem meningeal or cerebral hæmorrhage is very frequent.

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\*Read at the meeting of the Ontario Medical Association, 25th May, 1908.

The cases I wish to refer to are as follows:—

*First*, that of a domestic servant, not known to be pregnant, who was found dead in her kitchen. The autopsy revealed a 6 months' pregnant uterus, and extensive meningeal hæmorrhage. This case was reported to the Toronto Path. Soc. by Dr. H. B. Anderson.

*Second*, a patient seen by me in the Toronto General Hospital with Dr. R. J. Wilson. The woman had had one convulsion post partum. Her coma gradually deepened and she died. No autopsy was granted.

*Third* was a patient under the care of my colleague, Dr. Fenton, in Dr. Wright's service at the Burnside in December, 1905. This patient had one convulsion and again a gradually deepening coma was succeeded by death. In this case there was no cerebral nor meningeal hæmorrhage. The liver destruction was very marked.

*Fourth* was the case of a woman placed under my care in Dr. Wright's service at the Burnside last February. Her previous history was that she had had one premature birth at 6 months, and one still birth a year before accompanied by convulsions. At the time of her admission to the hospital she was about term. She had apparently been quite well until two days before, when she began to have "strange feelings in her head." On the morning of her admission she had one convulsion. At 7 p.m. she was brought to us in a stupid condition, yet capable of answering questions. Her pulse tension was 215 mm. Her urine contained a large amount of albumen and numerous hyaline casts. She was restless and was given moderate doses of morphine and oxygen inhalations during the night, together with calomel and magnesiæ sulphatis. Next morning her pulse tension was 225 mm. of mercury, and 12 ounces of blood were withdrawn by venesection and 2 pints of normal saline given hypodermically; elimination by bowel kept up. Nothing that was done seemed to have the slightest effect on the course of the disease. She became less unconscious during the day and by night was in a state of profound coma. Labour pains were going on but the os was not dilated. I made wide lateral incisions and delivered the child by version, the whole process taking five minutes. No anæsthetic was required. The babe weighed 8 lbs. and was dead. The woman lived about 7 hours after delivery. In addition to the liver lesions multiple pin point hæmorrhages were found in the brain, chiefly in the internal capsule. The kidneys showed persistence of foetal lobulation. Observe that in these cases also the course was a gradually deepening coma until death supervened. I have called this a fatal form of eclampsia, because in my experience it has been much more so than the ordinary convulsive type.

There has been a tendency to attribute death in all such cases to cerebral hæmorrhage. Autopsy has, however, upset this view in some

instances. My feeling is that it is rather a toxæmia so profound that the irritative effect of the poison on the nerve centres is lost, and that the hæmorrhages are merely another evidence of the profound degeneration produced by the poison.

I sub-tend a report on the examination of the blood from two eclamptic patients, very kindly furnished me by Professor A. B. Macallum of the University of Toronto. The first of these was an ordinary case of the convulsive type. The second is the report of the analysis of blood of the last case referred to in my paper.

DR. K. C. MCLWRAITH:

Dear Doctor McIlwraith,—In the first specimen of blood of Puerperal Eclampsia which you submitted the depression of the freezing point was  $0.62^{\circ}$  C. The sodium chloride in it was apparently not up to normal for the percentage found was  $0.607^{\circ}$  C. In the second specimen of Eclamptic blood which you submitted the depression of the freezing point was greater, viz.,  $0.675^{\circ}$  C.

The significance of the depression of the freezing point in both cases is that it is much greater than normal blood which has as depression of the freezing point,  $0.56$ . The greater the depression the greater is the osmotic pressure in the kidneys which, in Eclampsia, do not function as they should, otherwise the depression of the freezing point would be normal.

The highest depression of the freezing point hitherto found in Eclamptic blood has been  $0.62^{\circ}$  C. This was Bousquet's cases. Kroenig found in five cases of eclampsia the depression to be normal. This would indicate that there is a great variation in the osmotic pressure in Eclamptic blood.

I am,

Yours sincerely,

A. B. MACALLUM.

54 Avenue Rd., Toronto.

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## CURRENT MEDICAL LITERATURE

## MEDICINE.

Under the charge of A. J. MACKENZIE, B.A., M.B., Toronto.

## HÆMATEMESIS IN APPENDICITIS.

Hæmatemesis has been described in appendicitis by several French writers, but appears to have been almost unnoticed in this country. In his "Cliniques de l'Hôtel Dieu," 1901-02, Professor Dieulafoy devoted a lecture to "Vomito Negro Appendiculaire," in which he reported cases of appendicitis accompanied by abundant hæmatemesis, sometimes so severe that blood entered the air passages and suffocated the patient. All the cases were serious and many of them were fatal. As there were often also jaundice and oliguria, recalling the symptoms of yellow fever ("vomito negro"), he used the designation given above. He regarded the hæmatemesis as a manifestation of general infection or intoxication which lead to the production of small gastric ulcers. In the *Gazette Hebdomadaire des Sciences Médicales de Bordeaux* of March 8th Dr. J. Duvergey has described, under the title of "Les Petites Hématémèses de l'Appendicite," a form of hæmatemesis in appendicitis in which the hæmorrhage is slight and not of serious significance. He relates two cases. In the first case he was called in consultation on November 13th, 1905, to a man, aged 52 years, who had always enjoyed good health. On the evening of the 10th he began to feel abdominal pains, which on the 11th became localized to the right side. On the 13th the pain was increased and he vomited twice. The pulse was 90 and the temperature was 100.2° F. The abdomen was not distended and there was no cutaneous hyperæsthesia. On the right side the abdominal muscles were rigid and McBurney's point was tender. The vomit consisted of a slightly brownish liquid mixed with a little mucus, in which floated blackish filaments. Here and there and settled on the bottom were masses like coffee-grounds. Microscopic examination of the vomit showed red blood corpuscles for the most part deformed. Dr. Duvergey recommended expectant treatment, but knowing the gravity of hæmatemesis in appendicitis he was prepared to operate on the slightest indication. The hæmatemesis ceased and recovery took place in about eight days. On December 26th he removed the appendix, which was long, swollen at its extremity, and surrounded by adhesions. In the second case, a youth, aged 19 years, was seized on the night of July 31st, 1907, with violent colic all over the abdomen, but especially on the right side. On August 1st the pain increased and on the 2nd he was seen by Dr. Duvergey. The pulse was 120, the temperature was 103.2°, and there

were muscular rigidity particularly in the right iliac region and tenderness greatest at McBurney's point, where a hard mass was beginning to appear. The condition became worse and on the 7th vomiting of the same character as in the preceding case occurred. Operation revealed a fœtid retro-cæcal abscess which was drained. Recovery ensued. These cases show that appendicitis may be accompanied by the vomiting of liquid containing blood in such small quantity that on superficial examination it may be unnoticed, particularly if the microscope is not used. Dr. Duvergey ascribes the hæmorrhage to ulceration of the gastric mucous membrane from the interference with its nutrition produced by small emboli brought to it from a focus of infection. Hæmatemesis in appendicitis denotes a more or less profound infection of the body and increases the gravity of the prognosis, but slight hæmatemesis is not of such serious significance as severe hæmatemesis. Seven out of nine cases of the latter reported by Professor Dieulafoy proved fatal. On the other hand, in the first case of slight hæmatemesis related above the course was benign.—*London Lancet*, April 25, 1908.

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#### AN ACTION OF ARSENIC ON THE RED CORPUSCLES.

In the *British Medical Journal*, July 18th, there is an article on this subject by Gunn, of Edinburgh. After criticising the evidence on which some writers have held that the action of arsenic in malaria and pernicious anæmia was directly antagonistic to the poison, and reviewing the work of observers who have shown that its effect on the bone marrow is leucoblastic and that it did not increase the red cells, he shows that there is still a means by which this drug may produce its curative effect in these diseases, and that is by some action on the formed red cells. By a series of experiments he has shown that solutions of arsenic, even in dilutions so high as 1 in 400,000, have an effect in reducing the action on the red cells of hæmolytic agents; the arsenious acid in these experiments was found to be fixed to the red cells and the action took place very quickly. It is estimated that a single maximal dose of arsenious acid of 5 mg. given to a man of 70 kilograms would produce in his blood a dilution of 1 in 1,000,000, and as it is slowly excreted we see that the conditions in the living subject may well reproduce those in the test tubes. Of course this does not prove that this is the method of its activity, but it would seem at least reasonable that it would reduce the permeability of the cell by the plasmodium.

The writer also suggests that the origin of pernicious anæmia may be in some defect in the stroma of the blood cells, it is not in the hæmoglobin, that is often in excess, nor in the number of the cells. The cells

show a defect in the formation of rouleaux, a property which has been shown to depend on a fatty covering, the stroma consists of cholestrin and lecithin, bone marrow, containing large quantities of lecithin is clinically useful, arsenic which as above increases the resistance of the stroma of the cell is a favorite treatment, ergo the origin of the disease is a defect in the stroma.

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## OPHTHALMOLOGY AND OTOLOGY.

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### TREATMENT OF PURULENT OPHTHALMIA.

Geo. H. Price, M.D., of Nashville, Tenn., writes thus in *Jour. A. M. A.*, Nov. 23:

"By purulent ophthalmia we usually understand that form of conjunctivitis characterized by a flow of pus and due to gonococcic infection, and from this standpoint I will discuss this question. The forms of purulent conjunctivitis of gonococcic origin, which are the most common, are ophthalmia neonatorum, the purulent ophthalmia of the adult, and a third form, quite rare in some localities, namely, the purulent conjunctivitis of young boys and girls.

"Prophylaxis. As 'an ounce of prevention is worth a pound of cure,' I shall presume that we are apprised of the possibility of infection in any given case, either remotely or immediately, and hence shall refer to the prevention, if possible, in any such given case. Prophylaxis in ophthalmia neonatorum is so well known and thoroughly established that simple reference to this important procedure at once suggests Credé's method, introduced in his practice in the Lying-in Hospital of Leipzig in 1880, whereby the percentage of cases was reduced from 10.8 per cent. to 0.1 or 0.2 per cent. This record is sufficient to commend the practice where even the remotest possibility of infection exists, as well as to condemn the failure to resort to it.

"In the case of all individuals who are suffering from a specific urethritis great stress should be laid on absolute cleanliness of hands, linen, towels and utensils, and in some, if not in all cases, segregation should be required. In addition, the patient must be impressed with the importance of these measures, as they relate to the infection of the eye. In the case of young girls or boys who are exposed to infection from a known existing source they should be separated as far as possible from that source. If they themselves are the subjects of infection other than

about the eye, then their parents or responsible attendants should be warned and all necessary precautions taken to prevent this complication.

“Treatment. But presuming that the period for prophylaxis has passed and infection has occurred, several questions at once present themselves for consideration. The first is that of cleansing and keeping the eye free from secretions. The primary object of this procedure is to free the eye of pus, which is rapidly formed; this is most important, and for this purpose many solutions have been suggested and used. As boric acid is always at hand and its solutions are not dangerous in the hands of average attendants, I usually resort to a saturated solution of this agent, though when cleaning the eye myself I frequently use a solution of bichloride of mercury, 1—10,000. Artificial aids to irrigation I have not used, but rather depend on the ordinary method of cotton pledgets dipped in the irrigating solution and squeezed into the eye. As to frequency of cleansing, it should be resorted to as often as is necessary to keep the eye free from pus. This varies from every few minutes to every hour or two, according to the case, the stage of the inflammatory process or amount of pus being produced.

“Cold Applications. In the early stages of the attack the use of local applications of cold has been advocated by some and condemned by others. Touching this measure, I may say that it may give relief to symptoms and perhaps be used with safety in cases of robust adults where the cornea is not involved, but in infants or young children difficult to manage I do not use it. The chief danger in cold is that if it is applied to the point of efficiency as to temperature and length of time it is apt to reduce the nutrition in the cornea to a point where ulceration is set up and the condition seriously complicated. In view of these dangers from the use of cold it should be used, when used at all, to combat the pain by relieving the congestion, and then only for a few minutes (five to ten) at a time, with long intervals between the applications. Even in hospitals where house surgeons and trained nurses of experience are charged with its use it should be resorted to tentatively only, but in the general run of private practice it is a two-edged sword as a routine procedure.

“Surgical Treatment. Surgical procedures are resorted to by some in the conduct of these cases, such as the scarification of the chemotic ring about the cornea, or if the cornea is threatened by the pressure of the swollen and tense lids, a canthotomy, or even the vertical splitting of the upper lid. As to the first procedure, the time and the frequency of resorting to this must depend on the judgment of the physician. As to canthotomy, it should be done only when the pressure symptoms are severe and prolonged; fortunately this is not often; as to the vertical splitting of the upper lid, I think it is rarely necessary, and then in extreme cases only. In this connection I think I am justified in saying that in the great

majority of cases, if early seen and vigorously treated, the necessity for surgical interference is reduced to the minimum, and fortunately so, for we thus avoid making a port of entry for the invader.

“Last, but not least, we should resort to Buller’s shield in all cases of infection of one eye only. A word concerning this protective measure may be said at this point: Before applying the shield the eye should be thoroughly cleaned and disinfected with a solution of protargol, twenty to thirty grains to an ounce of water, and the shield so applied that it will be open at the outer and lower angle so as to provide proper ventilation, which prevents the clouding of the lens by moisture from the eye. The watch glass used should be as large as convenient and clear so the eye is at all times easily inspected.

“Medicinal Treatment. Now as to active treatment looking to the combating of the actual pus-producing agent. If I have reason to believe from the history of the case that the infection is due to the gonococcus, even though the pus has not made its appearance, I make it a rule to begin at once the active treatment of the condition, taking no chances, for I believe that much good can be accomplished at this time. I instil into the eye a 5 to 10 per cent. solution of protargol, order a wash of saturated solution of boric acid and give the patient a prescription for the following solution, which is to be put in the eye freely and frequently during the day, after cleaning:

R	Hydrastin acetate.....	gr. i-ii		065-13
	Boric acid .....	gr. x		65
	Borax .....	gr. xx	1	3
	Tr. opium (deod.).....	m. xv		92
	Distilled water q. s.....	ʒi	30	

“In order further to safeguard the patient it is well to order the protargol solution and have it used several times during the interval between visits. At this point I take occasion to say that the above prescription has proved a most valuable adjunct in the treatment of these cases. It is the original Scott mixture, with hydrastin acetate substituted for the hydrastin sulphate, the former being more soluble, while at the same time it is germicidal in its action and has a specially beneficial action on the epithelium. The hydrastin acetate is made by taking 2 grains of hydrastin alkaloid and 3 drops of acetic acid. If the patient is an infant or one suffering much from photophobia I instil into the eye a drop or two of atropin sulphate, 1 gr., distilled water, 1 oz., to put the iris at rest, and then give full instructions to parents or patients, as the case may require, and have the patient report in twenty-four hours. My reason for beginning the active treatment at once is that if the gonococcus is present it is best to begin the use of such remedies as will destroy the

infectious agent before it has had time to penetrate the deeper structures and thus limit the ravages of the disease. That protargol as an effective agent is well established by the experience of Myles Standish, who used it with great success in a large number of cases, while Davier and other foreign observers speak highly of it. Knapp, of New York, has also recently spoken of this agent in the highest terms, preferring it to the silver nitrate on account of the fact that it is more penetrating in its effect and less irritating. If, then, we have a remedy capable of destroying the gonococcus when present, and of producing no serious trouble, even if that germ should be absent, why not use it just as we do the 2 per cent. nitrate of silver solution in Credé's method. Again, if we can destroy some of the gonococci before they invade the mucous membrane we can limit, in proportion, the amount of inflammatory reaction, which consequently modifies the after-symptoms to such an extent that we have fewer complications, such as conjunctival chemosis and intense swelling of the lids. I can see no reason for waiting until we have a marked flow of pus before we resort to the use of those remedies which are capable of destroying the active pus-producing agent. This method of anticipating the condition is used, and with most gratifying results, by my friend, Dr. Savage, who has had considerable experience in the treatment of such cases. But to return to our patient. If on the morrow we find that the infection has progressed, and that there is more or less secretion, mucus and pus, it becomes necessary to institute a more vigorous line of treatment. The irrigation should be as frequent as is necessary to keep the eye from secretion, and following each cleaning some of the hydrastin solution should be instilled into the eye, and at stated intervals—some three to six times in the twenty-four hours, as the case demands—a protargol solution of 10 to 15 per cent. should be freely used. If thought best by the attending physician, after a thorough cleaning, the lids may be everted and the stronger protargol solution applied by means of a small cotton mop. As to this procedure there is some difference of opinion on account of the difficulty in everting the lids, especially in children, as it is not wholly without danger to the cornea. Then, too, the free use of the protargol will cause it to permeate the utmost limits of the conjunctival sac and thus avoid the necessity of everting the lids for a direct application. By some, nitrate of silver is regarded as the most reliable remedy to use, but it can not be used continuously nor can it be used properly except by one of experience. If it is used according to the suggestion of de Schweinitz, that is, a 2 per cent. solution applied directly to the exposed conjunctiva with a cotton mop and then the pellicle washed off with a physiologic salt solution, in my opinion we have defeated the object in view. In removing the coagulated albumin and in the neutralizing of the excess of the silver we have at once removed the active germ destroyer

and left behind an open field for the further invasion by the undestroyed gonococci lurking in the deeper layers of the mucous membrane. If at this point, that is, after the nitrate has been used, the excess neutralized and the pellicle removed by the physiologic salt solution, you follow immediately with the instillation of the protargol solution you have gained a double advantage, for the removal of the coagulum leaves behind a deeper level of the membrane which has not been penetrated by the nitrate, but in which the gonococci are still present, and it also immediately opens up a direct avenue through which the protargol can enter and destroy the enemy. In thus using the nitrate you have gained all that can be gained from this agent, for the coagulum is inert and in its exfoliation by natural processes it may become a source of irritation. Again you have cleared the way for another agent, which is both more penetrating and less irritating, and by reason of the fact that it can be used frequently and freely is more capable of producing beneficial results.

“In this connection it might be well to call attention to a few facts concerning the action of silver salts, as recorded by experienced observers. Cushny says: ‘The precipitation of silver nitrate by proteids and chlorides confines its disinfectant action to narrower limits than those of some other antiseptics, and this has led to the introduction of a number of other compounds which are less easily dissociated, and, accordingly, less liable to be thrown out of solution.’ Continuing, he refers to argentamin, saying: ‘It penetrates better than nitrate of silver, but the alkaline diamine renders it somewhat irritating.’ Again he says: ‘Argonin, which is a combination of casein and silver, is soluble in water and, like argentamin, is not precipitated by chlorides and albumin.’

“Protargol, according to Porter, contains only 8 per cent. of silver, is an albumose of silver and quite penetrating, while argyrol contains 30 per cent. of silver and is a combination of silver and vitellin, and collargol contains 97 per cent. of silver. These percentages of silver in argyrol and collargol are considerably higher than those given by some. In a recent article, de Schweinitz, in referring to the use of argyrol, speaks of the experiments of Dr. Derby of Boston with this preparation, who found that it did precipitate in the presence of albumin and that it was exceedingly weak in bactericidal action. He further says that C. R. Marshall and E. F. M. Neave, of England, practically confirmed the conclusions of Derby, and ‘they found that argyrol, and also collargol, possess practically no bactericidal action whatever, and, moreover, that the percentage of silver which these compounds contain is no criterion of their bactericidal power. Therefore, any good effects, as they point out, which many clinicians maintain that they have obtained with argyrol, can not be attributed to any action which it has on bacteria, inasmuch as such action is practically nil.’

"Now, these reports are, to my mind, very pertinent, for I think they carry with them the probable solution of this question as to the most reliable silver compound to be used in these cases. We have seen that silver nitrate, which is a powerful antiseptic and germicide, is limited in its bactericidal action by reason of the fact that it is precipitated by proteids. This prevents it penetrating the deeper layers of the mucous membrane, and consequently it fails to reach the micro-organisms which lie beyond the coagulum produced, while, of course, those which are free in the conjunctival sac are destroyed by this very coagulation or precipitation, since they are proteid matter.

"Again, argyrol, which contains, according to some, 20 per cent., and according to others, 30 per cent. of silver in the form of vitellin of silver, is a nucleo-proteid compound. Vitellin is a nucleo-proteid of that variety which, when decomposed, yields proteid and paranuclein. Now, proteids are not absorbed as such, but must be converted into proteoses or albumoses when absorption takes place rapidly, and it is said of paranuclein that it 'is probably absorbable.' Hence in this combination, argyrol, we have a feebly penetrating agent, and consequently one which can not be relied on to destroy those organisms which have penetrated the tissue with any degree of rapidity; therefore, development exceeds destruction of gonococci, rendering the remedy too slow and unreliable.

"Protargol is an albumose-silver compound containing only 8 per cent. of silver, and it has proven effective in the treatment of this form of trouble on account of its penetrating capacity.

"Attention has been called to the fact that proteids, as a rule, are absorbed only when they have been converted into proteoses or albumoses; that is, in order for them rapidly to penetrate animal membranes with facility and certainty they must be in this form. This being true, if we can get a recognized germicide in that form which can and will penetrate animal membranes we have an ideal agent to attack and destroy the gonococci, even though they are entrenched in the deeper layers of the conjunctiva. In protargol, the albumose of silver, we have an agent highly germicidal in its action, meeting the physiologic demands for easy absorption or deep penetration. Clinical experience with protargol, in the Nashville City Hospital, in the practice of Dr. Savage, has fully demonstrated its value both as to its use in cases which had reached the stage of pus as well as those in which it was used just after infection and before the symptoms developed. In the former the gonococci were not found in the pus after the third day, as a rule, and one of the house surgeons who became infected from a case under treatment, and who received the treatment as I have described it, was practically well in six or eight days."

## REPORT OF THE COMMITTEE ON OPHTHALMIA NEONATORUM.

*To the House of Delegates, American Medical Association :*

*Gentlemen,*—In the report presented to the House of Delegates by your committee one year ago it was shown that the amount of blindness dependent on the neglect of proper prophylactic care, or right treatment of ophthalmia neonatorum, had not decreased in a degree proportionate to the advance which had been made on other lines in general sanitation. Emphasis was placed on the fact that the amount of blindness, while smaller in many communities, was still so great in the aggregate as to have attracted the attention of the general government and that recommendations had been made in the census for the deaf and blind for the year 1900 urging that more general attention should be given to measures for its prevention. It was at once evident, therefore, that if this pestilence were to be attacked in accordance with the methods of modern sanitary science exact statistical data concerning the incidence, the localities chiefly affected and the results both in blind and disabled eyes must be first secured. In endeavoring to place this subject on such an exact basis it was found that except from the large hospitals no exact data were obtainable, that there are no records to show how prevalent infections from this cause are throughout the country, and they can be only approximately estimated by the number of blind children. These are recorded in such census reports as have been taken and in the annual admissions to the schools for the blind. In the census taken by the commission for the blind in the state of New York, in 1905, there were found to be 6,200 persons. Of these 509 were under one year of age, while of the 3,306 blind in Massachusetts more than 20 per cent. had lost their sight before their fifth year. There was no method of determining exactly how many of these were cases of infantile infection, but if ulcerative conditions due to bad hygiene and insufficient nourishment and the various forms of congenital blindness are excluded it is safe to assume, as blindness in young children from other causes than these is comparatively rare, that nearly one-half of the whole number have become blind as a result of ophthalmia neonatorum.

It is the special schools, however, which form the general clearing-house for most of the young blind, and in order that it might be determined what proportion of those admitted as late as the fall of 1907 had lost their sight from this cause a circular letter was addressed to the superintendent of each of the schools, asking for a report of the causes assigned for blindness, where the investigation had been made by an ophthalmologist. The reports received were somewhat startling and singularly uniform in their results. In a very large number of schools

no trustworthy examinations were made, but from the large number of instances in which the causes were marked "unknown" and "inflammation in babyhood" there is little doubt that the proportion would run in parallel lines to those schools in which more exact reports are recorded. Among those received were the following:

REPORTS FROM SCHOOLS FOR THE BLIND, 1907.

Schools for the Blind.	No. of new admissions.	No. blind from ophth. neonatorum.	P. cent.
New York State School for the Blind.....	13	4	30.7
Penn. Institute for the Blind, Overbrook, Pa. ....	27	9	33.33
Institute for the Blind, Austin, Texas.....	(Not definite—about 10.)		
Perkins Institute and Mass. School for the Blind .....	43	13	30.00
Colorado School for the Blind, Colorado Springs .....	7	3	42.8
Western Penn. Inst. for Blind, Pittsburgh, Pa. ....	28	8	28.57
(Percentage of total number in school, 31.37.)			
Missouri School for the Blind, St. Louis...	19	6	31.57
State Board of Education for the Blind, Hartford, Conn. ....	8	1	12.50
(Since creation of Board in 1893, 34.74.)			
State School for the Blind, Columbus, Ohio.	61	6	9.83
(Reduction of usual percentage and as low as at any time in last twelve years.)			
Maryland School for the Blind.....	13	4	30.77
(Percentage of total number in school in 1905, 25.50.)			
Ontario Inst. for Blind Brantford, Ont.....	23	5	21.74
(Percentage of total number in school, 24.7)			

The average then of the new admissions in the fall of 1907 to the ten schools in which exact records were kept and representing eight states and the province of Ontario was 25.21 per cent., or one-quarter of the whole number, needlessly blind.

That these are not unusual results is shown by the following report from the Pennsylvania School for the Blind for the past eight years.

Year	Per cent.	Year	Per cent.
1900.....	11 out of 25 = 44	1904.....	15 out of 56 = 25.00
1901.....	10 out of 26 = 35	1905.....	21 out of 42 = 50.00
1902.....	9 out of 39 = 23	1906.....	12 out of 38 = 31.00
1903.....	14 out of 50 = 28	1907.....	9 out of 27 = 33.33

The average percentage of these eight years is 33.36 per cent. of the whole number admitted. As this enormously high proportion of blindness due to ophthalmia neonatorum is found in states maintaining the highest standards of medical education and general sanitation, there is no doubt whatever that when exact statistics can be obtained at least as large a percentage due to this cause will be found elsewhere throughout the country.

#### OPHTHALMIA NEONATORUM AS A REPORTABLE DISEASE.

It does not seem practicable to put ophthalmia neonatorum on the list of communicable diseases. Considering the fact that it is so frequently of gonorrhoeal origin, many physicians feel that to report it, with the name of the parents, would be a breach of professional confidence and it would add, moreover, to the burdens of an already overburdened profession, but for the health officer to take a semiannual canvass of the number of cases occurring in the practice of the physicians, midwives and institutions of the locality, together with a statement of what, if any, prophylactic was used, with the resulting condition of the eyes in each instance, serves the same end and has a double value—namely, serving to impress on each one receiving the card the need of prophylaxis; and in obtaining statistics from which important conclusions may be drawn. It affords an opportunity, moreover, of conveying information to accoucheurs—that often may not, and soon would not, be necessary—but, meanwhile, it would be instrumental in saving eyes that would otherwise be lost.

#### SOLUTION OF THE PROBLEM.

In its ultimate analysis the solution of the problem would seem to lie not primarily in coercion, but in guidance. Dr. Juan Santos Fernandez, the distinguished Cuban ophthalmologist, touching on this subject, has said: "The important thing is to bring before the public mind, by means of constant propaganda, a knowledge of the danger to a recently born child, who is at all affected as to the eyes, the great harm which a husband affected with gonorrhoea, may cause his wife or offspring, and, side by side with these, to call the attention of the family to the facilities which the authorities will furnish them to guard against blindness." "This," he continues, "would be worth much more than penalties, and if there were a physician paid by the state (and in every county in the United States may such a health officer be found) to attend to the poor children affected, or to prevent their becoming affected, and this fact were to become known to the poor, they would surely seek his assistance, and he could fulfill his duties."

In the city of New York it was found that municipal affairs were being conducted inefficiently, extravagantly and in some instances dishonestly. A great reform is being quietly wrought. It is based on the principle that when right doing is made easier and simpler and more comfortable than wrong doing, that human effort will follow the lines of least resistance. It takes into account, moreover, the weakness of human nature, which we must recognize if we would discount success. It also builds somewhat on the belief that the great majority of men would rather do right than wrong, would choose the better rather than the worse if either were equally easy. This condition would be attained in making almost automatic the working of every health department in relation to infantile ophthalmic infections.

#### MANNER IN WHICH THIS END MAY BE ACCOMPLISHED.

As to the manner in which this might be done the conclusions in detail which are proposed may be broadly outlined as follows:

##### Registration.

- a. Births.
- b. Midwives.
- c. Physicians.

##### Education.

- a. Midwives.
- b. Mothers.
- c. Medical profession.

##### Preparedness.

- a. Proper dissemination of prophylactic.

##### Co-operation.

- a. United and concerted action in carrying these provisions into effect.

*First.*—It is necessary to secure the enactment of laws in each state or federal territory requiring the registry of births and placing the supervisory control and licensure of midwives in the boards of health, requiring that all midwives be examined and registered in each county and that they be required immediately to report each case of ophthalmia occurring under their ministrations under penalty for neglect if found guilty of fine, and for a subsequent offense forfeiture of license. In all states the registration of physicians should be maintained with equal thoroughness.

*Second.*—The distribution by health boards of circulars of advice to midwives and mothers, giving instructions as to the dangers, method of infection and prophylaxis of ophthalmia neonatorum. This has been most effectively carried out by private organizations in England and

France. It has also been done to some extent in New York and other cities, but never as a general movement.

*Third.*—The preparation and distribution by the health boards of ampules or tubes containing the chosen prophylactic, with specific directions for its use. The consensus of opinion on the part of both obstetricians and ophthalmologists is that this should be some solution of silver. The vast majority prefer the 1 per cent. solution of silver nitrate. The special chemical used, however, is merely advisory, each health department should be free to use whatever prophylactic it should deem best. It should, moreover, be provided with outfits for taking cultures from the eyes or suspected secretions on request of those making application for its use.

*Fourth.*—To insist on the maintenance of proper records in all maternity institutions and other hospitals in which children are born. If reports were filed with the department of health as to the number of infections, the nature of the prophylactic employed and the results as to the corneal integrity not only would the statistics thus obtained be of great value, but the fact that such records were required would cause greater care on the part of the authorities in regard to cases of this character.

*Fifth.*—Periodic report to boards of health by all physicians engaged in obstetrics of the number of cases of ophthalmia neonatorum that has occurred in their practice within a specified time, whether or not a prophylactic was used—if so, what—together with the result.

*Sixth.*—Of great importance is it that there may be more widespread knowledge concerning ophthalmia neonatorum and its dangers. Helen Keller voices a very proper public sentiment when she says: "The problem of prevention should be dealt with frankly. Physicians should take pains to disseminate knowledge needful for a clear understanding of the causes of blindness. The time for hinting at unpleasant truths is past. Let us insist that the states put into practice every known and approved method of prevention, and the physicians and teachers open wide the doors of knowledge for the people to enter in. The facts are not agreeable reading. Often they are revolting. But it is better that our sensibilities should be shocked than that we should be ignorant of facts on which rest sight, hearing, intelligence, morals, and the life of the children of men. Let us do our best to rend the thick curtain with which society is hiding its eyes from the unpleasant but needful truths."

*Seventh.*—Most essential is organized and concerted effort throughout all of the states of the Union. The skeleton of such an organization has already been formed and the plan has met with the general approval of the profession in nearly two-thirds of the states. If the chairmen of the sections on ophthalmology, on obstetrics and diseases of women, and

on hygiene and sanitary science were to select a representative in each state and territory to support and strengthen the movement already under way, a conference of these representatives might be held at this meeting in Chicago and general plans laid down which could be carried out concurrently. As the chairmen of each of these sections has already given his approval of this report, such an organized movement could be started without delay and the inspiration and incentive of united effort would do much to carry it to an effective conclusion.

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### MIGRAINE, AN OCCUPATION NEUROSIS.

George Lincoln Walton, M.D., Consulting Neurologist, Massachusetts General Hospital, Boston, in his paper, read before the meeting of the American Medical Association, sets forth the following views:

The form of migraine to which I shall confine myself is the everyday type, the variety which I have found occurring in complete form in 17 per cent. of healthy young adults, and in incomplete form in many more. It reaches its greatest intensity in early life and generally disappears after middle life. It is often preceded by scotomata, by temporary aphasia and numbness, loss of memory, signs of mental incapacity and confusion, and even possibly, as Gowers suggests, by the peculiar feeling that the present is a reproduction of the past, the feeling thus described by Coleridge:

Oft o'er my brain does that strong fancy roll  
Which makes present (while the flash doth last)  
Seem a mere semblance of some unknown past,  
Mixed with such feelings as perplex the soul  
Self questioned in her sleep.

Any of these symptoms may appear without the pain in the head. Loss of consciousness never occurs, a fact which sharply distinguishes migraine from epilepsy, though there have been attempts to make them analogous. The frontal and temporal regions are most often involved, the occipital next often, the vertex practically never alone.

*At the time of greatest intensity the pain is sometimes accompanied by nausea and vomiting, especially in early life, whence the term "sick headache."* The time varies in duration from several hours to a day or more. It does not often materially interfere with sleep, though it frequently appears on awakening in the morning. It does not necessarily accompany extreme use of the eyes, though it is apt to appear after such use, as on the morning following a theater party.

The so-called ophthalmoplegic form of migraine is so rare in comparison with this form, and so distinct in its symptoms, that it seems

hardly fair to discuss both types together. The suggestion of Plavec, that the ordinary form is the precursor of the ophthalmoplegic form, seems to have little basis, and his proposed pathology (periodic swelling of the hypophysis as concerns the ordinary migraine, is purely speculative.

A case reported some years ago by Dr. Cheney and myself has a practical bearing on this question. A man of middle age had suffered many years from what was supposed to be the common type of migraine, though it was accompanied by the unusual symptom of persistent homonomous hemianopsia. The headaches became more severe, various paralyses appeared, mental deterioration ensued, and death followed. The autopsy revealed pituitary tumor.

While this case bears favorably on Plavec's location for ophthalmoplegic migraine, it is far from aiding us in the pathogeny of ordinary migraine. Nor does it suggest that ordinary migraine was the precursor of the more serious trouble. The migrainous headaches in this case should rather be regarded as symptomatic of the local lesion, no more allied to or resulting from ordinary migraine than epileptoid seizures from cerebral tumor are allied to, or result from, idiopathic epilepsy, though they may be mistaken for it at the outset.

Whatever theory is advanced for the pathogeny of ordinary migraine, the use of the eyes can hardly be left out. The arguments connecting the use of the eyes and migraine are easily preponderant. In the first place too many cases of migraine have been relieved, in part or entirely, by correction of refractive error, particularly of astigmatism, to be explained by coincidence. In the second place, attacks have been frequently aborted by the mere straightening of glasses, as I have many times verified in my own case. In the third place, migraine has lessened and disappeared in innumerable cases after accommodative paralysis has appeared. Finally, study of the blind shows that the greater the blindness the less the migraine. My own examination of a long series convinced me that migrainous headaches are only half as frequent among the blind as among individuals of corresponding age and under like conditions.

It may be objected that migrainous headaches are not quite unknown among the blind. But it must be remembered that it is a common practice for the blind, as for others, to adjust their accommodation to the distance of their work as judged, even in the absence of sight, by the position of the hands.

Assuming, then, that disturbance of the accommodative centers plays a part in migraine, it need not be expected that the blind shall be quite exempt.

Another peculiarity of eyestrain which has an important bearing on my proposition is the almost continuous frown of the astigmatic. This frown involves principally the corrugator supercilii and the anterior part of the occipitofrontalis, which muscles occupy the regions in which the pain most frequently appears.

If one voluntarily contract the brows for fifteen minutes he will experience a disagreeable sensation which suggests migraine in mild form. This leads to the question whether we must assume the pain of migraine to be entirely intracranial, a doubt emphasized by the recent observations of Cushing showing the non-sensitiveness of the dura, the part to which perhaps more than any other the pain of migraine has been credited. It may assist us to recall a somewhat analogous pain which sometimes appears in the back of the neck and "base of the brain" after long-continued eyework in which the head is held firmly in one position. I have been not infrequently consulted for this pain by persons who have undertaken an uncommon line of work, requiring this posture, the commonest illustration being that of the person who has recently undertaken the position of secretary. This pain so often appears after the completion of the day's work, rather than during the work, that its source is apt to be overlooked. The pain is apt first to appear during the night or in the early morning, and is sometimes decidedly paroxysmal. The only relief is found in discontinuance, or lessening the constancy, of the work (unless, happily, the mere correction of refraction serves the turn). This form of headache is surely muscular rather than intracranial; its analogy to migraine is shown by the fact that it is sometimes preceded by twinkling scotoma.

This occipital form of headache offers a fair illustration of acute occupation neurosis.

The proposition I have to submit is the following:

Migraine is an occupation neurosis, and involves (1) the visual centers; (2) the centers of accommodation (centers of divergence and convergence in the frontal region); (3) the intrinsic and extrinsic muscles of the globe, and (4) the muscles outside the orbit which are called into play in the effort required for accurate vision, principally the corrugator supercilii and occipitofrontalis, and also the muscles inserted in the occipital region, which serve to steady the head.

#### CONCLUSION.

Migraine is an occupation neurosis resulting, in individuals of neurotic inheritance, from overuse, or use under the handicap of refractive error, of the parts concerned in vision.

It involves, like other occupation neurosis, disturbance of (1) sensory cerebral centers (those of vision in the occipital region); (2) motor cerebral centers (centers of divergence and convergence in the frontal lobe); and (3) certain muscles (particularly the intrinsic and extrinsic muscles of the globe, the corrugator supercilii and the occipitofrontalis, and also the muscles which steady the head).

The pain of migraine is not necessarily intracranial, but is localized, in part at least, in the region of the muscles concerned, directly or indirectly, in vision.

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## GYNÆCOLOGY AND ABDOMINAL SURGERY.

Under the charge of S. M. HAY, M.D., C.M., Gynecologist to the Toronto Western Hospital, and Consulting Surgeon Toronto Orthopedic Hospital.

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### INVALIDISM IN WOMEN DUE TO CHRONIC APPENDICITIS.

W. S. Hadley (*Clin. Jour.*, March 25, 1908), claims that many cases of pelvic pain, wrongly diagnosed as chronic ovaritis, as avorian or other forms of dysmenorrhea, as cervicitis, as endometritis, as movable kidney, and as pelvic neuralgia are really due to chronic appendicitis. The physical sign upon which the diagnosis of chronic appendicitis must mainly rest in doubtful cases is an indolent but intermittent swelling of the right ovary up to double its normal size. A close analogy may be found in the "swollen face" of an alveolar abscess. Round any focus of chronic inflammation congestion occurs, and the tissue spaces are distended by an excess of lymph. These changes are passive and do not imply an active inflammation of the swollen part. Owing to the very rich vascular and lymphatic supply of the ovary, and to its peculiar tendency to the formation of small cysts, the edematous changes show themselves first, and often exclusively, in the ovary. Excessive secretion of cervical mucus may be another symptom of this congestion around the inflamed appendix. The swollen right ovary of chronic appendicitis is usually of about twice the normal size and is free from adhesions. It is often situated lower down than is normal, and may be prolapsed in the right lateral or posterior fornix. The swollen ovary is not, as a rule, particularly tender. The enlargement of the ovary is an intermittent phenomenon, which may be present at one time and absent on a second occasion, a week or two later. A large proportion of cases of chronic appendicitis pass under the name of "chronic ovaritis." Chronic ovaritis, unaccompanied by adhesions, is probably a fictitious disease. If the other pelvic organs are healthy, if there is no evidence of ascending infection of the genital tract, and if colitis can be excluded, the detection of a "swollen right ovary" should not lead to the diagnosis of an imaginary "chronic

ovaritis," but to the conclusion that chronic appendicitis is present. The detection of a swollen right ovary is of no value as pointing to chronic appendicitis if there is evidence of ascending inflammation of the genital tract of gonorrhoeal or puerperal origin. Some cases presenting the signs and symptoms of chronic appendicitis can be cured by a course of intestinal antiseptics and laxatives. The disease is one which should be treated by a physician before operation is decided upon. If colitis complicates the case the benefits of appendectomy, though sometimes great, are always uncertain. But in cases where colitis can be excluded, and where the patient presents the characteristic clinical picture, appendectomy should be urged as promising complete restoration to health at the cost of a very small risk.—*Am. Jour. of Obs. and Dis. of Women and Children*, June, 1908.

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#### ABDOMINAL INJURY.

The severity of an injury, sufficient to excite a demonstrable collection of fluid within the abdomen, is an uncertain quantity, and this uncertainty affords a good and sufficient reason for an early laparotomy, which discloses, perhaps, in addition to the source of hemorrhage, a tear in a hollow viscus.—Otto C. Gaur in the *Pennsylvania Medical Journal*, *American Jour. of Surgery*, August, 1908.

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#### BACKWARD DISPLACEMENT OF THE UTERUS.

In a somewhat lengthy paper on this subject, G. Bellingham Smith (*The Practitioner*, vol. lxxix, No. 2, August, 1907), arrives at the following conclusions :

1. Many cases of backward displacement are unattended by symptoms and need no treatment.
2. Some are congenital and have symptoms that are not referable to the displacement, namely, dysmenorrhœa and sterility. These call for a different line of treatment.
3. Where enlargement and tenderness of the uterine body exists, and there is a difficulty in immediate replacement, treatment, with a view to reducing congestion, had best be carried out. The same preparatory treatment would apply to those cases in which the ovaries are prolapsed.
4. When well-marked symptoms of neurosis are present, it is advisable to consider carefully how far the local condition is responsible for them. Treatment in these cases is likely to be somewhat of an experiment.

5. When the uterus is bound down by adhesions, persistence of symptoms, in spite of treatment, will justify an operation for the freeing of adhesions and fixation forward of the uterus.

6. Ventral and other methods of fixation of the uterus are called for in a small minority of cases of backward displacement. Owing to the risks involved in the operation itself, and from subsequent pregnancy, it should be undertaken only when other measures of relief have failed.—*Surgery, Gynaecology and Obstetrics*, July, 1908.

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### PHLEBITIS OF THE LEG AFTER LAPAROTOMY.

E. Mériel (*Gaz. des Hôp.*, April 4 and 11, 1908) says that a complication that is always to be feared toward the fifteenth day after a laparotomy is phlebitis of the lower extremity. When the patient is on the fair way to convalescence in some cases there begins to develop a phlebitis similar to the milk leg of the puerperium. The author describes twelve cases that have come under his observation. The symptoms may announce its approach before it is developed, and the diagnosis depends on the interpretation of these symptoms. The chief is frequency of the pulse, which is not synchronous with the rise of temperature but occurs before it. After laparotomy pulse and temperature correspond. If the temperature remains normal and the pulse becomes accelerated from the day after the operation without any appreciable cause and continues so we should be on the watch for phlebitis. This is the signal-symptom of phlebitis. This pulse is not small like the pulse of peritonitis. Its frequency increases without fever. This is due to the resistance opposed by thromboses of the pelvic veins. The heart of the patient is often weakened by anemia and hemorrhage and it is unable to increase its force to overcome this resistance. The rise of temperature generally accompanies the appearance of phlebitis. There is a chill followed by a rise of temperature to 38.5° C. or 39° C., then oscillations of about a degree for three or four days, followed by apyrexia. Each new access of phlebitis causes a fresh rise of temperature. Pain begins with the phlebitis preceding the edema. It is explained by the pressure on the crural or saphenous veins at their passage through the rings of the sheaths. Edema is white and soft. Pulmonary embolism is more often seen after operation for fibroma than after laparotomies for other conditions. It comes like a clap of thunder out of a clear sky and death is sudden at no matter what stage of the disease. It may come as a result of changing dressings, bed linen, or getting up. The etiology includes some change in the veins before the operation. Phlebitis never occurs in a perfectly healthy vessel. It

requires some injury during the operation or some diseased condition to act as a focus for the action of bacteria in the circulation. Or there must be some change in the composition of the blood that will favor clotting. The pelvic veins are in these patients varicose or dilated in many cases as are those of the legs.—*Am. Jour. of Obs. and Dis. of Women and Children*, June, 1908.

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## OBSTETRICS AND DISEASES OF CHILDREN.

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### CONGENITAL DEFORMITIES.

In the *Bulletin de la Soc. d'Obstet. de Paris*, No. 4, 1908, there appears a series of reports of interesting congenital abnormalities.

Tissier reports a case of "congenital absence of a portion of the external ear." The pregnancy had developed without any abnormal condition, the delivery was uneventful. Neither parents showed any malformation. The infant was well formed in every way except that the whole lobe of one ear was practically absent. A small skin flap without any cartilage hanging loosely over the meatus.

Bonnaire, in discussing the case, expressed the opinion that it was probably due to an amniotic band as the skin in the neighbourhood of the ear was defective.

Bertaux and Metzger showed a body of an infant, the subject of a diaphragmatic hernia. The infant seemed well developed, weighing 3,250 grms., and was delivered by means of forceps. Respiration was not established, though the heart could be seen to be beating, through the chest wall the impulses being noted on the right side of the body. Displacement of the viscera was diagnosed, and on post mortem in the right side of the thorax was found the heart and atelectased lung. On the left side in front of the collapsed lung was found the stomach and a mass of small intestines. The diaphragm on the left side was represented by a small band of muscular tissue situated in front of the orifice for the passage of the oesophagus, etc. The liver seemed to have prolapsed and occupied a large portion of the abdominal cavity.

Devè reports an interesting case of hemi-paralysis of the tongue in the new born. The child was delivered by forceps after an extraction lasting 10 minutes, on account of delay in the second stage of labor. It weighed more than 4,000 grms. and cried feebly immediately after birth. The mark of the forceps blades could be seen on either side of the head, but there was no evidence of facial paralysis. The infant refused to take

the breast. On examination, the tongue was found to have a peculiar appearance, the tip being markedly to the right. The left side of the tongue seemed to be somewhat globular in appearance and to constitute a large part of the organ. The right side of the tongue seemed to be deficient and to be hidden behind the left side. It was very thin and excavated somewhat like a spoon. The infant made no effort to suck. Respiration was not effected.

The tongue gradually resumed its natural shape, the left side diminished in size while the right increased. The infant gradually learnt to take the breast satisfactorily.

The condition probably arises from an obstetrical paralysis of the hypoglossal nerve. Another case has been recorded which also recovered without treatment.

Quarrant reports a case of imperforate anus. At birth the child appeared normal. No defect was noticed about the anus. On the second day no meconium had been discharged and the child began to vomit and become jaundiced. On exploring the anus the sound was introduced a short distance and encountered obstruction. Fournier operated by means of a transverse incision passing from one ischium to the other a short distance in front of the anus. Careful dissection upwards was made, after 4 c.m. the distended bowel was reached, incised, permitting the escape of large quantities of meconium; after which its edges were stitched to the anus. The child recovered and three months later was reported to be in good condition.

Gonnet reports a case of "pseudo-achondroplasia, of a (type dyslasie periostale). Parents normal. The infant three days after birth was found to present a normal thorax and abdomen, but the limbs showed peculiar defects. The head somewhat periform in shape with the occiput flattened, was very soft in the front and sides, the bones being very defective. The arms were very short and somewhat thick. On palpating the arms osseous crepitation was noticed. The legs showed very much the same character. The thigh measured 8 c.m. Crepitation was obtained over the femurs and the tibias. The child was very markedly jaundiced. It died 48 hours after birth. On post mortem the osseous lesions were found most marked in the cranium and in the long bones of the limbs. The latter were found fractured in many places.

Gilbert and Garricot. The authors presented the body of an 8-month foetus which showed complete absence of the pelvis and lower limbs. The parents were both healthy though there was a record in a previous generation of the birth of a monster in one of the families. The mother had given birth to seven well formed infants as a result of her first marriage. As a result of her second marriage the first pregnancy had terminated in abortion, and the second in the monster here reported.

The pregnancy was complicated with severe vomiting, headache, oedema, and pain in the lower part of the body. The history of the birth is unsatisfactory, but it is recorded as having taken place quickly. The child cried on its delivery. Pulsations were noted in the cord. The infant lived for about one hour, and making sucking movements with the lips.

A careful anatomical examination of this monster is then recorded. The most striking things about the body were the form of the head, the confirmation of the right arm, and the absence of the pelvis and lower limbs. The left arm was quite normal, but the right forearm was curved, contained only one bone, and terminated in a hand having but 4 fingers.

The body seemed to terminate just below the umbilicus in the formation of a round flat disk somewhat pigmented. There was a slight antero-posterior depression but no opening. There were many visceral defects and there was scarcely a section of the body that failed to show some anomalous condition.

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#### THE DEATH OF THE MATURE FŒTUS IN LABOR.

Dr. H. M. Stowe (*Jour. Surgery, Gyn. and Obstet.*, April, 1908) bases this paper upon 174 stillbirths and 16 births occurring as the immediate result of labor, and 33 autopsies upon stillborn children. The author gives a table of the stillbirths in Chicago for the last seven years which shows a percentage of one death in every 46 labors. As a result of his statistical study, the author concludes that one child probably dies in every 25 deliveries. An itemized report of 190 cases recorded in tabular form is given, and is followed by a brief summary of autopsies on the bodies of 33 stillborn children.

After a brief review of the physiology of the fœtus in utero, the author takes up in detail the principal conditions bringing about death of the mature fœtus in labor. Precipitate labor may cause fœtal death through tetanic contraction of the uterus interfering with placental circulation. One case is recorded by the author in his series as being due to precipitate labor.

Prolonged labor. In 96 of the author's cases premature rupture of the membranes occurred, associated with rigidity of the cervix. He thinks that the condition of the child and mother gives the indication for operative delivery, and not the element of time. Taking four hours as the usual length of time of the second stage, 32 of the author's cases had prolonged labor, 18 of the children died as the direct result of intra-uterine pressure.

**Size of the child.** One of the children weighed 12 lbs. with a measurement of 43 c.m. around the shoulders. Three of the children weighed 12 lbs., 100 weighed less than 8 lbs., 54 between 8 and 9 lbs., 24 from 9 to 10 lbs., and 16 over 10 lbs. With three exceptions, the mothers of these children were multiparæ.

**Pelvic deformity.** Eighty-nine of the pelves (or 52.68 per cent. of the author's cases) were classified as deformed and interfering with the normal mechanism. There were 19 spontaneous deliveries in the series. Of the 80 normal pelves there were 20 mal-presentations, 14 being breech. In 19 out of 65 cases where extraction was made at the breech the head was caught at the inlet and the child lost. In 13 cases high forceps were used at or above the inlet, without result save that of further injuring the fœtus and making craniotomy a necessity. In the other cases high forceps resulted in the delivery of a dead child. All these children showed hæmorrhages of the brain and many fractures of the skull.

The author then gives a study of the various presentations and positions of the series.

The cord was around the neck in 14 cases.

Prolapse of the cord caused the death of 20 children. Only 8 of the mothers where this condition was present had normal pelves.

Dry labor occurred in 14 cases of this series and accounted for the death of the fœtus.

Premature detachment of the placenta occurred 10 times. The placenta was inserted in the lower uterine segment in 6 cases, two of which resulted in the death of the mother.

Rupture of the uterus occurred 5 times, resulting in the death of both mother and child.

With regard to the prophylaxis the author states that careful antepartum examination of both mother and child is essential. Frequent auscultation of the fœtal heart must be made and the fœtal movements should be noted. Slowing of the fœtal heart between the pains indicates danger, so that if the heart rate falls below 100 beats per minute or raises above 160 during the intervals between the uterine contractions, the child is in danger of asphyxia. The escape of meconium stained liq. am. is not incompatible with the birth of healthy and normal children. Only when fresh black meconium is forced out of the uterine cavity, in head or shoulder presentations, are we justified in extracting.

The author concludes his paper with a few remarks on the possibility of recognizing efforts of the fœtus at respiration while it is still in utero, and concludes by stating that watchful expectancy and careful diagnosis will early decide the treatment to be instituted, and then operative prodition. Forewarned of the probable complications of labor by an antepartum examination, frequent auscultation of the fœtal heart sounds will

enable the attendant to save many children that would otherwise be lost. Procedures can be carried out when both mother and child are in good condition. Forewarned of the probable complications of labor by an antepartum examination, frequent auscultation of the foetal heart sounds will enable the attendant to save many children that would otherwise be lost.

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### INFANTILE SCURVY.

Dr. H. L. K. Shaw, writing on infantile scurvy, or Barlow's disease, in *Pediatrics*, January, 1908, after giving a history of the disease showing that it dates back to very ancient times, states that the condition has only been clearly recognized in the past twenty years. The specific cause is not known, but two factors have a causative influence: the kind of food and an individual susceptibility.

It is exceptional to meet with the condition other than in artificially fed babies. The unsuitable diet must be maintained for some months before the disease manifests itself. Proprietary foods, sterilized, pasteurized and boiled milk all give rise to the disease. It has been met with in infants fed on raw cow's milk. All kinds of theories as to the conditions of diet resulting in the disease have been suggested. The disease is met with in the children of the rich as well as the children of the poor. It rarely appears before the ninth month, and the author dwells on this point as having an important diagnostic bearing, "as syphilitic epiphysitis most often begins under the age of three months, and rheumatism in children under three years of age is practically unknown." It is found in both sexes equally. Pathological changes consist chiefly in subperiosteal hæmorrhages in the diaphysis of the long bones, especially near the epiphyseal junction. Visceral, orbital and subcutaneous hæmorrhages are not uncommon. Certain changes in the bone marrow take place, associated with destruction of osteoblasts, which result in an abnormal thinness of the bone at the margin of growth of the diaphysis. Thus the effected bones become brittle, and the epiphyses loosen. The joints are never affected.

Rickets and scurvy may be found in the same patient, and this has been the subject of much controversy. There is no doubt that the anatomical changes are essentially different in the two affections.

The author then gives two illustrative cases, one an eleven months infant, and the other aged fourteen months and a half. Both had been fed on artificial foods for some months. Symptoms in both cases were chiefly pain and tenderness of the lower limbs. The symptoms entirely disappeared on proper diet in a very short space of time.

The author then discusses the symptoms in detail. Anæmia is present more or less in all cases. The most striking symptoms are *tenderness and loss of movement*. This is first shown by crying and distress on being handled, and is more often present in the legs than in the arms. Careful and gentle palpation of the affected limbs will show swollen areas and especial tenderness at the ends of the diaphysis. These swollen areas extend some distance along the shaft of the bone from the epiphyseal region. The lower end of the femur is most frequently involved. The skin over the affected area is tense and glazed and the skin feels doughy to the touch and pits on pressure. The condition is usually taken for one of paralysis.

The characteristic appearance of the gums is important. They are usually of a dark bluish red color and bleed easily. This is one of the earliest symptoms of the disease. Hæmorrhages into the orbit or about it may result in conditions of exophthalmus. Hæmorrhage may be present in the mucous membrane of the hard palate. Post-mortem examination in fatal cases has shown extensive visceral hæmorrhages.

Hæmaturia occurs in 10 per cent. of the cases. The onset of the disease is slow and insidious. The course is decidedly chronic and the prognosis very favorable under suitable treatment.

The diseases most often confounded with it are rachitis, syphilis, rheumatism, and nephritis. Careful examination will usually clear up the diagnosis.

Treatment. By way of prophylaxis the author recommends rectifying the diet in every case where an infant presents an increase in anæmia associated with restlessness and hyperæsthesia. Raw fruit juice, beef juice or fresh vegetables should be given. The juice of one orange daily may be given to a baby with decided benefit. The beef juice should be freshly prepared from raw meat. Children suffering from the disease should be moved and handled as little as possible.

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### ECTOPIC GESTATION.

S. H. Johnson in *Nort West Medicine*, June, 1908, has collected eleven cases occurring in the vicinity of Bellingham, Washington, within the last year. Ten of these have been operated upon, in seven no diagnosis was made until after rupture of the sack.

After discussing the salient symptoms the author reports four cases.

The first case complained of intense sharp pain in the pelvic region as the first symptom. She had gone over her period one week and the flow when it appeared lasted longer than usual and was more serious in character.

Two weeks later her condition not improving, she was operated upon, when there was a ruptured tubal of pregnancy found. The recovery was uneventful.

The other cases were all very similar, presenting the usual classical symptoms of severe pain, pallor, and signs of air hunger of sudden onset. Operation in each case revealed the ectopic gestation and all the cases recovered.

The author grants that in old and infected cases, operation through the cul de sac of Douglas, with drainage per vagina may be utilized, but in the majority of cases the abdominal route is to be followed.

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### EPIDEMIC INFANTILE PARALYSIS.

M. Allen Starr in *Jour. A.M.A.*, July 11, 1908. presents a study of the recent epidemic in New York.

The onset of the disease was associated with a brisk febrile movement, accompanied by vomiting, malaise and severe pains in the limbs and back. Excessive sweating was noticed in many of the cases. Diarrhoea frequently followed on the second or third day. On the third or fourth day paralysis usually appeared. In the vast majority of cases the legs were chiefly affected. The pain was a very marked symptom in almost all the cases and is due no doubt to intense congestion of the spinal cord. Improvement usually sets in about the fourth week.

Recovery is extremely protracted though in many cases it has been complete.

A careful biological study of twenty cases is included in the paper. Results of the tests made show that the diagnosis of poliomyelitis by means of a serum reaction is not possible.

The fluid obtained from lumbar puncture was always clear and colorless.

In the cases examined bacteriologically in New York the findings were entirely negative.

The author concludes that up to the present time the organism responsible for the disease has not been discovered. The weight of evidence is in favor of the hypothesis that a toxin is the cause of the disease.

The author then makes a careful study of all recorded epidemics of the disease.

With regard to prognosis the author points out that in sporadic cases the mortality is very low, though in epidemic cases it runs from 6 to 10 per cent.

In 25 per cent. of the cases there is complete recovery in the epidemic cases. Such complete recoveries are not always observed in sporadic cases.

With regard to treatment, dry cupping of the back two or three times a day is suggested to relieve the congestion. Ice bags have the same effect. To relieve the pain antipyrin and phenacetin in appropriate doses are recommended. The nutriment for the first two or three days should be chiefly milk.

Cushing's suggestion of the employment of urotropin, as its use, is followed by the appearance of formaldehyd in the cerebrospinal fluid, is supported by Dr. Starr, who gives 5 grains every four hours to a child of eight years. Salicilate of strontium is recommended in the early stages.

After the pain has subsided medication should be stopped for two weeks, when the employment of strychnine should begin and it should be pushed as far as is consistent with safety. He mentions of having given 1-40 of a grain three times daily to a child of eight.

Massage and allowing the child to play daily or twice a day for half an hour or more in a warm bath and the application of galvanism improve the condition of the muscles. Appropriate treatment by means of braces should be adopted to keep the limbs in proper position, whether the patient is up or in bed. The orthopedic treatment of these cases is more important than any other.

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#### AN ANALYSIS OF 500 CASES OF SPINAL PARALYSIS.

Joseph Collins and T. H. Romeiser, in *Jour. A.M.A.*, May 30, 1908, base their paper upon the recent epidemic in New York, 327 of the recorded cases occurring in the epidemic of 1907, and 173 sporadic cases occurring previous to that date.

The paper gives in tabular and chart form interesting facts. It is particularly noticed that the ratio of males and females was three to two. The most vulnerable age is one to three years, though 95 per cent. of the cases were not five years of age.

September is the month in which the maximum cases were recorded, the number per month gradually rising from June. There was a rapid fall in the cool weather of October.

The paralysis following most frequently involved the lumbar enlargement of the cord, though the cervical and dorsal and also the bulbar regions were affected.

No definite or constant relation was observed between the degree or duration of the fever and the severity or extent of the paralysis.

The common meningeal symptoms, somnolence, stupor, etc., were noted in all cases.

Most of the children were in the best of health at the time of the onset of the disease.

Though, as a rule, fever and vomiting ushered in the disease, in many cases paralysis was the first symptom noted.

The authors as a result of this epidemic, conclude that the infection that causes this disease finds the entire central nervous system susceptible.

The grey matter of the anterior horns is most susceptible or most perishable under its influence. The meninges, the grey matter of the cortex, of the bulb and of the brain stem and even the white matter may all be affected. The intensity of the affection of these parts rarely goes beyond the stage of irritation.

The prognosis is as in other infectious diseases, of variable quantity.

With regard to recovery the authors state that a considerable number of the cases have made a fair recovery.

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#### THE BACTERIOLOGY OF THE PUERPERAL UTERUS.

Drs. W. R. Nicholson and J. S. Evans, (*Ann. Jour. Med. Sc.*, August, 1908), after a somewhat extensive report of the literature on the subject of the matter under discussion, give the technique followed in obtaining the cultures. They employed a curved cervical speculum of small caliber, the glass tube employed being curved and covered with a small cap which is attached to a sheath tube manipulated with a small handle.

The authors state that in their opinion intra uterine culture as an aid to diagnosis is of value when a suitable technique is followed. But they consider that the method is not a sovereign means of diagnosing the presence or absence of infection in all cases. They report four cases in which the cultures obtained were sterile and which afterwards proved to be septic.

Taken in connection with the studies on the bacteriology of the blood it may be said:—(1) If both blood and intra uterine cultures are negative, the temperature is due to some intercurrent condition; (2) If the intra uterine culture is positive but the blood is negative, we consider the infection to be still local in its manifestations; (3) If the intra uterine culture is negative but the blood is positive, the case is one of general infection, the local endometrial condition having been either sterile

from the first or having become so gradually after the general infection developed.

The authors give a careful tabulated report of 67 cases examined and conclude as follows:—

1st. The uterine lochia is sterile in normal cases throughout the puerperium.

2. Streptococci are never present within the cavum uteri without causing symptoms.

3. In a few instances non-pathogenic germs may be found in cultures in afebrile cases, but there is every reason to believe that their presence is really the result either of contamination during the extraction of the lochia or of their introduction during obstetric manipulation.

4. Ascendance of the gonococcus is an event of comparative rarity, though the frequency of this organism would of itself give reason to expect otherwise.

5. Infection of the endometrium is an ever present danger in culturing within a few days of delivery.

6. A study of the bacterial content of the puerperal uterus is of great importance as a subsidiary means of diagnosing septic infection following delivery.

7. As nearly as may be, a technique should be adopted which will prevent contamination during the removal of the lochia in order to avoid a vitiated result.

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#### “DER EXTREPERITONEALE” UND DER “SUPRASYPHYSARE” KAISERSCHNITT.

M. Hofmeier, (*Zeut f. Gyn.* No. 29, 1908), thinks that the new method of performing cæsarean section according to the method of Frank marks a new era of treatment of labor in the deformed pelvis.

Hofmeier reports two cases operated upon by the complete extra peritoneal method suggested by Sellheim. Both cases were primiparæ.

The first case being 34 years old, having a flat rachitic pelvis, after 28 hours of labor pains with ruptured membranes, her temperature began to rise. The operation, extra peritoneal section, was undertaken. Medial incision beginning at the upper border of the symphysis to three finger-breadths below the naval. The peritoneum was pushed from the upper portion of the bladder, which was distinctly seen from two or three finger-breadths above the symphysis. Further showing up on the peritoneum led to its rupture, a 3 c.m. tear, careful suturing; bladder loos-

ened from the cervix and shoved as far downwards as possible. The result was that the anterior wall of the cervix and the lower uterine segment lay exposed for a good hand-breadth in extent in the wound. The very thin wall of the uterus was then cut open in the median line and the occipital portion of the head exposed in the wound. Marked extension of the wound always led to some bleeding. The head was then delivered by means of forceps. The liquor amnii was offensive and slimy. The child required one-quarter hour's work to establish respiration. On its posterior parietal bone there was a necrotic pressure mark of the promontory. The child survived.

The wound was sewed and in the lower portion a small rubber drain inserted. There was a putrid infection of this wound in its lower part which healed by second intention.

The patient was in hospital for four weeks. Left with the uterus extremely high and fastened to the anterior abdominal wall.

The second case was 29 years of age. Had a flat rachitic pelvis. Temperature was elevated. On opening the abdominal wall it was impossible to push the peritoneum from the bladder as it did not come into the field of operation. The peritoneum was opened in the median line and the uterine peritoneum also opened in the median line and loosened sideways for an area of 2 c.m. The two layers of peritoneum were now sewed together with sutures of catgut so as to allow a hand breadth of the uterine wall to be exposed extra peritoneally in the wound. Considerable blood loss on opening the uterus in the median line. Hand had to be inserted into the uterus and the child turned, bringing the feet out first. This caused a tear in the upper border of the wound and a giving way of the peritoneal sutures, which was immediately repaired. Closing of the wound as in the previous case.

The patient made a good recovery, though the first 8 days there was pretty high fever.

There was a putrid lochia and a putrid discharge from the drain in the lower part of the abdominal wound.

In the second case the lower uterine segment was difficult to reach as the pains did not seem to have drawn it up as in the first case, so that the transperitoneal method suggested by Pfannenstiel was indicated.

The author refers to the difficulty of extracting the child in consequence of the escape of the waters permitting the uterus to tightly grasp it. He has nothing to say in favour of the transverse incision suggested by Sellheim.

The author then goes on to discuss the question as to the relation of cæsarean section to cases in which there is great danger of uterine infec-

tion, and he concludes that "extra peritoneal" cæsarean section in the sense of Frank, Veit and Sellheim is indicated in four cases, and a "supra symphyseal" cæsarean section in the sense that the wound of the uterus is situated as low as possible on its anterior wall and immediately above the symphysis, for the uninfected cases.

### LA GROSSESSE ET L'ACCOUCHEMENT DANS LES RETRECISSEMENTS CONGENITAUX DE LA VALVULE MITRALE.

Andebert and Dupont, *Annal. de Gyn. et d'Obstet.*, July, 1908, had an opportunity of studying the cases recorded in their paper throughout pregnancy, labor and the puerperal period. Five cases in all are reported in full. They include in the paper ten other cases collected from recent literature.

Their personal cases, five in number, had altogether 13 pregnancies, 10 of which went to term. In none of them was the pregnancy interrupted spontaneously. None of the mothers died, and but one infant which succumbed to syphilis.

Of the cases collected from literature there were 43 pregnancies in all. Thirty-eight went to term, one was interrupted at the seventh month and four were aborted. But one mother died, and of the infants born at term there was but one death, the cause being unknown.

Compared with the acquired mitral stenosis the congenital form seems to be attended with much less mortality in labor. The statistics of Porak and Remy show a mortality of thirty-seven per cent. in those suffering from the acquired form, while the author's investigation of the congenital cases show a mortality of but seven per cent.

The conclusions from a study of these personal cases are that women suffering from congenital mitral lesions pass through pregnancy and labor much more easily than other cases of cardiopathy.

The authors agree with Peter and Landouzy that marriage should be forbidden in individuals, the subject of mitral stenosis whether infectious or acquired. They agree with Germain See and Jaccoud in stating that marriage may be permitted in cases where the mitral stenosis is of congenital origin and that these patients may be allowed to nurse their babies.

It is probable that the simple arrest of development in the congenital cases permits functional adaptation so complete as to almost always completely correct the effects of the lesions.

# The Canada Lancel

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## EDITORIAL.

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### WHAT SHALL BE DONE WITH THE CONSUMPTIVE?

This is the heading under which our contemporary, *The Montreal Medical Journal*, writes an editorial of much merit. We have been proclaiming from the house tops for years that the tuberculosis problem is too big for individuals and municipalities. If it is ever to be handled effectively it must be handled by the provinces and the Government of Canada as a whole.

The loss to the country through preventable deaths and a vast amount of sickness would far outweigh our national debt. The expectation of life for all born in this country is at least 48 years, and the present worth of this in dollars is a handsome sum. To lose 10,000 people each year, and to have about 50,000 sick with tuberculosis is a very heavy tax upon the earning capacity of the rest of the population.

All that are born must some day die, but there is no reason why they should die young from a disease that can be prevented. Professor Sims Woodhead, when in Toronto a few weeks ago, remarked that because the infection was slow in manifesting itself, people overlooked it, and there was a marked degree of carelessness. If consumption declared its presence in a few hours or days from the time of exposure to a case, then there would be no trouble about compulsory notification, placarding houses, and isolation.

The tubercle bacillus does not exist free in nature. It comes from the sick to the well, or through food or milk. This places the whole subject on plain ground. It is the duty, the absolute duty, of each province and the Federal Government to provide means by which the public may be fully instructed on the matter of infection, on the necessity for proper care in the case of one who is afflicted, on the need for isolation of such cases as have not got proper home surroundings, and on the need for providing proper places for the care of the poor consumptive.

It is simply a question of going about the matter in a proper way, and spending enough money. The money would be well invested and would yield splendid profits. A moment's thought will show what has been done to arrest the ravages of ague and yellow fever; and yet a greater than these is not yet chained, because we are too mean to buy

the chain. If it does cost a little money, let us put Vulcan to work at his forge, and the Prometheus of tuberculosis will soon be bound.

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### THE MEDICAL INSPECTION OF SCHOOL CHILDREN.

It has now gone past the stage when the need for medical inspection has to be argued. The question before us is how this may best be done. In Toronto the Board of Education has the matter under consideration. It is proposed to create a new department for this purpose, and engage a medical inspector, who will devote his whole time to this work.

Many are of the opinion that the Board of Education should move slowly in this matter. For the present there is a strong feeling in the minds of many, and we share in this, that there is no need for the appointment of a medical inspector for the Toronto schools. The work of inspection can be carried out under the auspices of the Medical Health Officer, who can make use of young practitioners, male and female, to visit the schools and report to him on the condition of the pupils.

We are in favor of a medical inspection of the school children, but we are not in favor, at the present moment, of the appointment of a medical inspector who will devote his whole time to the work and create an expensive new department.

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### RECIPROCITY WITH GREAT BRITAIN.

Nova Scotia was the first province to move in this matter and secure recognition in Britain, and now some of the graduates from Dalhousie University and trained in Halifax have had their names entered upon the register in Great Britain. This is what should be. The profession of Hippocrates is a world wide one.

Quebec followed and has been successful, and now the graduates of McGill and Laval Universities, holding the license of the Quebec Council, may register in Britain, and thereby become eligible for appointments in the army and navy. In this way the graduates of the universities in Quebec and Nova Scotia may secure the right to practise in Britain, or any of her many possessions, and also to practise in any of the Canadian provinces coming under the regulations. Thus, if all the provinces sought and obtained British recognition, there would be a condition of interprovincial registration established thereby.

We think that steps should be taken by all the provinces to secure British registration rights. It is not fair that the graduates of Ontario Universities and with the Ontario license cannot secure British registration. This should be remedied without delay. There is no doubt but that the other provinces will move for the privilege of having their degrees recognized. Ontario need not, and should not be the last to act. So far as the practice of medicine is concerned let Great Britain and all her colonies be one vast domain.

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### THE CANADIAN MEDICAL ASSOCIATION.

It is not too soon to be thinking about the next annual meeting. To make the Association valuable the papers must be good. It is not given to many to have the experience and attainments that would enable them to prepare papers in a hurry. The inference is clear—begin now to work upon the subject each may select for his paper or address.

The subject should be well thought out. Much reading should be given to the literature available to the essayist, and the whole should be arranged in the best possible form and clothed in the best possible language. A sketchy style is an abomination. It does injustice to the reader of the paper, and is often a real annoyance to the auditors. Every one who reads a paper or reports a case should make it his business that nothing will be left undone to render his effort worthy the occasion. We should ever remember that Kant, the great German philosopher, said that the two tests for a good book or essay were its matter and its form; and by its form he meant its language and style.

The meeting next year will be held in Winnipeg towards the end of August. If the next year's meeting is going to be a memorable one, now is the time to begin.

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### INTERPROVINCIAL REGISTRATION.

This is an important subject and will not down. The medical profession of Canada is now fully alive to the folly of walling off each province by means of restrictions which prohibit a duly qualified practitioner in one province practising in another without the annoyance of undergoing examinations.

When medical men from all over Canada meet each other in the Medical Parliament of Canada, the Canadian Medical Association, this foolish distinction disappears. The National Association next year will

meet in Winnipeg. On that occasion there will be members from the Maritime Provinces, from Quebec, Ontario, and the far West. These will all meet on common terms, will read papers and take part in their discussion.

All deference will be shown to these members. They will be regarded as capable of reading papers, and discussing those read by others. This proves that judged by this test those from the east, the west, and the centre are looked upon as equals and confreres. But here comes in the ridiculous part of it all, that these members could not practise in each other's provinces.

The Province of Nova Scotia—note it well—has set the pace for the others to follow. This province has agreed that it will admit to its register the practitioners of other provinces, if in turn these latter admit those qualified in Nova Scotia. This seems quite simple and it is quite fair. All that is required is a similarity of curricula, the recognition of each other, and the payment of the registration fee. We hope to see other provinces soon follow the lead of Nova Scotia. There should be no place for parochialism. As Osler once said the profession of Canada should not be in a state of chronic compound comminuted fracture.

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#### THE ONTARIO MEDICAL ASSOCIATION.

The date of next year's meeting is June 1, 2, 3, and the place is Toronto. *This should be borne in mind by the profession of this province.*

The success of the meeting last year more than justified our view that it should not always meet in Toronto, and we hope that after it has met here it will go to London or Kingston. This has the effect of interesting a new group of men in its welfare. The good work done by the profession in Hamilton will not soon be forgotten. Let us have similar work done elsewhere. Titles of papers should be sent in soon.

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#### THE SIXTH INTERNATIONAL CONGRESS ON TUBERCULOSIS.

This great congress has passed into history so far its actual assembly is concerned, but the stimulus of its work remains with us. Most of the important countries of the world were represented.

The Hon. George B. Cortelyou, in opening the congress in behalf of President Roosevelt, remarked that tuberculosis caused 160,000 deaths annually in the United States; death-rate that on the same ratio of population was greater than that resulting from the plague in India.

Professor Koch, in replying for Germany, said that the situation was favorable in his country. Many sanatoria had been established in which 40,000 patients were treated annually. The death-rate from this disease was steadily falling, and was in 1906 only 17.26 for every 10,000 of the population.

The experimental work on tuberculosis brought out some very interesting facts. It was made clear that guinea pigs might be infected from cows and vice versa; and that pigs could contract the disease from the faeces of infected cows. It was also proved that the faeces of infected cows contained the bacilli, and might in this way infect the milk. In sunlight the bacilli died in half an hour, in strong electric light they would die in about 30 hours, while in a dark place they would live for 32 days.

It was emphasized on all hands that while the disease might be caused by the bacilli from bovine sources, the great source for the spread of the disease was the sputum of persons suffering from the pulmonary form of the disease.

Some very important reports were given on the effect of diffuse light on the life of the tubercle bacilli. Direct sunlight kills them in a few minutes; but the diffuse light, such as that generally possible in a house, took about one week.

Much attention had been paid by some who read papers, or took part in the discussions, on the subject of variation in virulence. It was laid down as the result of much observation that the difference in attacks of the disease was much more a matter of difference in the virulency of the bacilli than in the susceptibility of the subject. This difference in virulence did not constitute different types of bacilli.

The method and route of infection was discussed fully. It came out in these papers and discussions that in the younger years of life, the pharynx, stomach and intestines were common avenues through which the infection entered. In the adult it was more common through the inhalation of infected dust. Through the intestinal canal the lungs could become infected.

The subject of the latency of tuberculosis came in for its due share of attention. Some of those present held that the disease might be latent on the system for many years, as long even as 20 years.

Much attention was paid to the subject of mixed infection, and the lesions caused by the accompanying germs.

It was also shown that a tuberculous mother could infect her offspring through the placenta. The bacilli had never been found in a spermatozoon, but they had been found in the seminal fluid. It had been shown that in animals, if tuberculous matter was injected into the vagina immediately after the coitus of perfectly healthy parents, the

progeny could be rendered tuberculous. This showed that the bacillus might be carried on the body of the spermatozoon.

A form of tuberculosis was described that resembled typhoid fever. There was continued fever. In two or three weeks the patient might die with all the appearances of some type of septicæmia, but no tubercle present. If they recovered from this acute febrile stage tuberculization occurred later, proving the real nature of the disease.

After a good deal of discussion a resolution was adopted affirming the unity of human and bovine tuberculosis. To this Kock remarked, "You may pass your resolution, but posterity will decide." It was also urged that instruction be given in all schools for the training of teachers, and that as far as possible information should be spread abroad on the subject.

A feature that was strongly urged by a number of the leading papers and discussions was that air impregnated with other bacteria favored the development of tuberculosis. These bacteria found their way into the various parts of the body by inhalation, and getting into the pharynx and being swallowed. Following these came the tubercle bacilli on a soil thus prepared. A vitiated air is, therefore, a real danger,

The results of experiments were given which proved that flies which fed on tuberculous sputum voided the bacilli in their faeces afterwards, and could transmit the disease to great distances.

Dr. Koch adhered firmly to his position that the bovine and human types, that man might be infected from a bovine source, but that the real fight was against the spread from man to man. Professors F. Arloing, G. Sims Woodhead, Theobald Smith, Fibiger, and Yensen all agreed that there was no sharp line to be drawn between the human and the bovine types of the bacilli.

Much attention was given to the question of sanatoria. Many papers were read on the value in tuberculosis of the opsonic vaccine. It was held by most of the speakers that there was benefit to be derived from their proper employment.

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#### THE AMERICAN HOSPITAL ASSOCIATION MEETING.

The annual meeting of this important Association met in Toronto on 29th September, and remained in session for four days. A large amount of work was done and many topics of interest to hospitals were passed under review.

Dr. S. S. Goldwater, of Mount Sinai Hospital in New York, in his presidential address referred to the growth of the association, the good

work it had done in bringing those interested in hospital work into contact with each other, and hoped the scope of the association would be widened so as to admit to membership all who took an interest in hospital work. In this way the business side as well as the medical would receive due attention.

A committee was appointed to gather information on the advisability of a uniform system of training for nurses. The sum of \$500 was set aside to defray the expenses of the committee.

Mr. J. Ross Robertson gave an address in which he drew attention to the fact that people were losing their fear of hospitals and were now willing to be treated in these institutions. He also referred to the methods of raising money, and advocated the sending out of illustrated and interesting reading matter from the hospitals showing the work they were doing. He held that the raising of funds was mainly the work of lay persons.

There was some attention paid to the management of small hospitals. Dr. T. R. MacLure took up this subject. He pointed out the difficulties in managing the internes, nurses, and superintendent in these smaller hospitals of about 50 beds.

The functions of the visiting committee was discussed by Mr. G. S. Bixby, of New York. He pointed out that these committees had been of much use in many places in aiding the work of the hospitals, and in looking after the aged and crippled after they left the hospitals. These people could be taught to make things that could be sold for the maintenance of the hospitals. In this way they could be made partially self-supporting while in the hospitals.

An interesting paper was read by Dr. R. W. Bruère, of New York, on the work in connection with children's dispensaries. He has had much experience in this line and pointed out that the homes from which the poor children came to the dispensaries should be visited. In this way much could be done for the health, education, and morals of these children and, much also done to control infectious diseases among children. In New York last year there were over 17,000 deaths of infants under 1 year, and 90 per cent. of these deaths were preventable.

Dr. J. A. Miller, of New York, and one who has taken much interest in the prevention of tuberculosis, pointed out how the outdoor departments could be made to serve a useful end by the establishment of clinics for tuberculosis, and then following these people to their homes, giving them needed instructions.

Drs. J. M. Peters, Washburn, Howell, and Mann, from large cities in the United States, pointed out to what a large extent public dispensaries were imposed upon by those who could pay. They contended

that there should be some system of visitation to check this evil. Nurses could be employed for this work, who would detect fraud on the one hand, and give good advice to the deserving poor on the other.

Mr. J. Ross Robertson pointed out that the Hospital for Sick Children had adopted the plan of insisting that on the second call the parent furnish a certificate from some well-known person that the applicant was poor. This checked some, and then an agent was sent to make enquiries. In this way imposition was limited.

The subject of infection in the various hospitals was fully discussed. It was admitted that visitors often brought infection into the wards. Mr. J. Ross Robertson mentioned that one year this had cost the Hospital for Sick Children probably \$15,000. Dr. Wilson, of New York, held that no matter what the nature of the infection there should be immediate isolation.

Dr. Edsall, of the University of Pennsylvania, gave a good address on the management of infectious diseases in the wards of hospitals. He urged immediate isolation when a case appeared.

There was a general consensus of opinion that general anæsthetics should only be administered by those who had received proper training for the work. This would be a safety to the patients, and advantage to the operator, and enhance the reputation of the hospitals.

The following officers were elected: President, Dr. John M. Peters, Rhode Island Hospital, Providence, R.I.; Vice-Presidents, Dr. Arthur A. Aucker, City and County Hospital, St. Paul, Minn.; Dr. J. N. E. Brown, General Hospital, Toronto, and Miss Emma Blunderson, New England Baptist Hospital, Boston; Secretary, Dr. W. L. Backcock, Grace Hospital, Detroit; Treasurer, Dr. Asa Bacon, Presbyterian Hospital, Chicago.

The next meeting will be held in Providence, R.I., from September 27-29, 1909.

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### THE SERO-DIAGNOSIS OF SYPHILIS.

There are three methods of diagnosing an infectious disease: 1. The clinical, by means of the signs and symptoms produced by the infection; 2. The discovery of the germ, or pathogenic organism; 3. By noting the serum reaction the organism gives rise to in the infected subject.

We are all familiar with the reaction in typhoid fever, known as the Widal test, and the reaction in tuberculosis by the injection of tuberculin.

But recently much excellent work has been done on syphilis. It is now admitted that the spirochæta pallida, or treponema of Schaudinn,

is the sole organism of the disease. This discovery by the late lamented Schaudinn stimulated the search for serum reactions, as the discovery of the treponeme opened the way for experimental medicine. You know what has been already done on monkeys and other lower animals.

Up to the present moment there are two methods of making the serum diagnosis. They are essentially different, and must be carried out on different lines.

1. The first of these is what is known as the Wassermann method, though Neisser and Bruck have been working on the same plan. It depends upon the fact, discovered by Bordet and Gengou, that in the blood of the infected person there are two substances, one of which is the antibody of the other. When any substance finds its way into the organism capable of giving rise to the antibody these two unite, forming a new substance which is capable of removing from the blood the complement which is always present in normal blood.

If we take a rabbit and inject into its peritoneal cavity the red blood corpuscles of a sheep, in time the serum of the rabbit's blood will contain, in addition to the complement, a new substance called the amboceptor or sensitising substance. These two substances will dissolve red corpuscles of the sheep, a process known as haemolysis. If the rabbit's serum be heated to  $56^{\circ}$  this haemolysis will not occur, because the complement is destroyed, but not the sensitising body. Now add some normal blood serum from any animal and the haemolysis takes place, because the complementary body is again restored.

If to a serum that contains haemolytic powers we add the antibody and the antigen the haemolytic power of the serum is arrested, because these two bodies unite with the complement, and leave only the sensitising body free.

Thus far we have seen that normal blood serum contains what is known as the complementary body or cytase. When a new body is introduced into the blood of the animal capable of giving rise to certain reactions an antibody is produced, and the substance which stimulated this reaction is called an antigen. During this process of the action of the antigen giving rise to the antibody, a new substance is called into existence known as the amboceptor or sensitising body.

We have seen that heat up to  $56^{\circ}$  by destroying the complement, will arrest haemolysis. It is also true that the addition of antigen and antibody will also arrest haemolysis. In order that haemolysis take place, we must have a mixture containing red corpuscles, the sensitising substance, and the complement. If to this mixture we add the antibody and antigen no haemolysis takes place, because these two bodies unite with the complement, and prevent its action as did the heat.

Thus we have in our mixture the red blood corpuscles, the sensitising substance, and the complement, with which latter the antibody and the antigen unite to form an inert, or neutral body, and consequently there is no haemolysis. Apply this to the case of typhoid fever. The pure culture of the bacillus yields the antigen and the serum of a typhoid patient yields the antibody. These two added to the mixture containing red corpuscles, the complementary body, and the sensitising substance, prevent haemolysis, or the solution of the red corpuscles, while the addition of any one of them will not do so.

Wasserman and his co-workers have applied this process to syphilis. But they were met with the difficulty of not being able to secure a culture of the spirochete. They found, however, that the livers of patients in the active stage of syphilis contained the antigen, while the blood serum, or spinal fluid of old cases contained the antibody. This discovery enabled them to proceed with the serum diagnosis of syphilis by the method of haemolysis, or red-blood corpuscle solution.

The peritoneal cavity of a guinea-pig is repeatedly injected with the red blood corpuscles of a sheep. In time the guinea-pig's serum contains sufficient sensitising substance. To some of this serum, with its complementary body and sensitin, are added red-blood corpuscles from the sheep, and antigen from the liver of a syphilitized monkey. Everything is now ready for the final step. To the foregoing mixture we add some blood serum, or spinal fluid. If no haemolysis takes place the subject furnishing the serum or fluid has had syphilis, and of course yielded the necessary antibody, as did the typhoid fever patient in the other test.

By the application of this test antibodies have been found in the spinal fluid of ataxics and paretics, and in those with suspected inherited taint.

2. Professor Fornet, assisted by Eisenzimmer, Rosenfeld, Cherechewsky, and others, have simplified the method of serum diagnosis. They found that the blood serum of an active syphilitic contains antigen. When the serum of an active syphilitic is mixed with the serum of a parietic a specific precipitation takes place. The serum of the active syphilitic, like the emulsion from his liver, contains precipitinogen; and this with the serum of the parietic gives the characteristic reaction. This reaction is the presence of a turbid ring where the two sera are in contact. This is formed in about two hours. The sera must not be mixed, but only carefully brought into contact. This is the counterpart of what takes place in typhoid fever. The typhoid culture gives the precipitinogen, and the convalescent typhoid patient the precipitin. In like manner the untreated active stage of syphilis yields the precipitinogen and the late convalescent, or parietic, or ataxic yields the precipitin. The presence of precipitinogen indicates the persistence of the treponemes, while the presence

of precipitin points to their absence now, but their presence at some time in the past. The union of these two substances gives the characteristic deposit. Neither alone with normal serum will give any reaction.

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#### DR. W. A. YOUNG'S ILLNESS.

We regret very much to have to state that Dr. W. A. Young, of Toronto, had a chill a short time ago, which caused a severe attack of neuritis. He is now on the way to recovery, and we hope will soon be up again.

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### PERSONAL AND NEWS ITEMS.

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#### ONTARIO.

Dr. Skinner Gordon has removed to 467 Spadina Ave., near Knox College.

Dr. R. W. Rudolf has been appointed Professor of Therapeutics in the Medical Faculty of the University of Toronto.

Dr. N. K. Wilson is practising with his father, Dr. W. J. Wilson, 159 College St.

Dr. F. C. Treblicock, of 722 Spadina Ave., Toronto, announces that in future he will confine his practice to diseases of the eye.

Dr. Charles M. Stewart, of Toronto, announces that he will confine his practice entirely to disease of the nose, throat and ear.

Dr. Walter McKeown has been appointed an associate professor of surgery in the University of Toronto.

Dr. Graham Chambers has been appointed an associate professor of medicine in the University of Toronto.

Dr. William Britton has recovered from his illness which confined him to the house for a number of weeks.

Dr. A. E. Bennett, after taking a post-graduate course of study in Britain, has located on Melbourne Ave., Toronto.

Professor Sims Woodhead, of Cambridge, delivered the opening lecture at the Medical Department of the University of Toronto.

Dr. Paul L. Scott, of Toronto, was married on October 7th to Miss Agnes Wilson, 41 Murray Street, Toronto.

The many friends of Dr. B. L. Riordan, who went to the Pasteur Institute in New York for treatment for rabies, has done well. So far no symptoms of importance of the disease have manifested themselves.

Incorporation has been granted to the Ontario Graduated Nurses' Association. The objects are to keep up the standard of Education, nursing and the hour of the profession.

A short time ago Dr. O. R. Avison paid a visit to Toronto. For many years he was a medical missionary in Seoul, Korea. He is at the head of a hospital in that city. He will return to his work about Christmas.

The medical students of Toronto extend a cordial greeting to Prof. Brodie, F.R.S., of London, England. Professor Brodie has a world-wide reputation as a physiologist, and is a decided acquisition to what is already considered the best staff on physiology on the continent.

Congratulations are again due to Prof. Maccallum, of Toronto, upon the honors this summer bestowed upon him by Trinity College, Dublin. This institution has conferred upon the professor the degree of doctor of science, an honorary degree much coveted.

Dr. Walter B. Geikie, of Toronto, was the guest of honor at a banquet given him at the Hotel Cadillac Saturday night, 17 October, Detroit, by about 300 Detroit physicians, who were former members of the Canadian colleges. Dr. Geikie was in Detroit for a week to visit with his former classmates.

Dr. H. S. Bingham of 523 Dovercourt Road is at present in Grace Hospital, where he underwent an operation on Monday. The operation was rendered necessary owing to the result of injuries received some years ago in a runaway accident at Cannington, where the doctor was then practising. The operation was entirely successful.

Dr. William F. Adams, 9 Brunswick Avenue, has been appointed to take charge of the hospital at Yochow, Honan, China, under the auspices of the Reformed Church of the United States. Dr. Adams spent four years in West China for the Canadian Methodist Church, and is thoroughly familiar with the work.

Lt.-Col. James A. Grant, Permanent Army Medical Corps, has been appointed temporarily to the post of principal medical officer, western Ontario command, to succeed the late Lt.-Col. William Natress. It is expected that the appointment will be made permanent later. Col. Grant arrived from British Columbia and has already taken over his new duties. The new P.M.O. is the son of the eminent Ottawa surgeon, Sir James Grant. He was educated at Queen's University, Kingston. Mrs. Grant is a daughter of the late Senator John Macdonald, of Toronto.

*QUEBEC.*

The new medical building for McGill Medical College has been commenced and is making good progress. This building will afford the very best possible facilities for the teaching of medicine.

Dr. F. J. Shepherd, the new Dean of the Medical Faculty of McGill, has entered upon his responsible duties with that energy which has always characterised his work as a teacher of anatomy and surgery. The term of deanship has been made one of five years.

Montreal is more than usually liable to outbreaks of typhoid fever. In the adjoining villages there are no persons armed with the requisite power to enforce proper safeguards in the cases of those who may be suffering from the disease. In this way water and milk are apt to become infected and the city proper frequently suffers.

*MARITIME PROVINCES.*

The question of interprovincial registration was also discussed by the New Brunswick Medical Society. The matter was referred to the medical council for further action.

The New Brunswick Medical Society also agreed to press upon the Government the establishment of a Provincial Sanitarium for tuberculosis, and also to press upon the government the need for compulsory vaccination.

At the meeting of the New Brunswick Medical Society, held at St. Stephen some time ago, it was agreed that the minimum fee for making an examination for life insurance companies would be \$5. It was decided that this would come into effect on 1st October, and that all the members would stand by the resolution and see that it was made effective. The fee for fraternal society insurance will be disposed of next year.

*FROM ABROAD.*

Dr. Thomas McCrae, of Johns Hopkins, Baltimore, and a graduate of Toronto, was married recently to Miss Gwyn of Dundas.

At the congress for the study of the care of the insane, held in Vienna lately, a bust of Professor Krafft-Ebing was unveiled.

The sixteenth International Medical Congress will be held at Budapest, from August 19th to September, 4th, 1909.

The education committee of Manchester, England, has appointed three medical inspectors of the school children.

As a result of the work that has been conducted on the Plague it has been proven beyond a doubt that the disease is communicated to man from rats by means of the rat flea.

The statistics of Australia show that the births last year were 110,347, and the deaths were 45,305. The birth-rate has been steadily increasing of late years.

In the five Swiss Universities there are 953 male medical students, and 1,051 female medical students. Most of the students are from outside countries.

There are in the United States 23,602 registered medical students attending college this year. There are 891 homœopathic students, 479 eclectic, 90 physio-medical, and 206 unclassified.

One of the latest fads in the league line is the formation in Britain of "An Antiexpectoration League." One would think that this is carrying things dangerously close to the ridiculous.

The combination of arsenious acid and atoxyl is proving very successful in the treatment of the sleeping disease as it is experimentally induced. The arsenious acid is given by the mouth, while the atoxyl is administered hypodermically.

In the Uganda protectorate syphilis is very common, and its ravages are terrible. In some localities as high as 90 per cent. of the people suffer from the disease. The infant mortality in some places is from 50 to 60 per cent.

The death of Sir A. V. Macan, the eminent obstetrician, occurred in Dublin on 26th September. He held the position of professor of obstetrics in Trinity College. His death was caused by heart strain from riding his wheel.

The vital statistics of France have been issued for the year. The births were 32,878 less than for the previous year, while the deaths were 13,693 greater. The net result of these two factors is that the deaths exceeded the births by 19,920 in 1907.

In a very able address before the Swedish Medical Society, Dr. Bartel points out the ferments of milk and their importance to nutrition. He directs attention to the civil results that may arise from sterilization of milk.

According to recent reports from Major Kean great progress is being made in the destruction of the mosquito throughout Cuba. In many districts the breeding places are destroyed and no more larvæ can be found. Havana is an example of this.

From the *Transvaal Medical Journal* the news comes that there is being put forth a strong plea for medical inspection of schools. Throughout South Africa there are many diseases that are liable to be present among school children, making an inspection very necessary.

A "magnetic healer" was before the police of London, England, a short time ago for fraudulently receiving money on the promise of restoring to a lady a "new eye" in lieu of a glass one which she was wearing.

After a month's treatment she went to Middlesex Hospital to find out if the "new eye" was growing as she had been told by the "healer."

The medical inspection of school children is being enforced in many places throughout Britain. In a certain district in Wales 1,360 children were inspected and one-third was found to require treatment of some kind. In Worcestershire 59 children were excluded from school out of 1,006 examined.

It has been announced that in Britain that poor-law medical officers will be required to notify the sanitary officers of all cases of tuberculosis coming under treatment. In localities, especially in Ireland, where compulsory notification has been in use, no complaints have been raised against the practice.

Mr. Andrew Carnegie has handed over to the trustees in Dunfermline the large sum of \$1,250,000, to be used for the relief of persons who suffer bodily injuries in Britain and its waters in their heroic efforts to save human life. It is stated that an effort should be made to render their positions financially slightly better than it was before their injuries.

At the Moral Reduction Congress, held recently in London, the key note to most of the papers and discussions was that hygiene meant much more than information about sewers and dust bins. It meant a proper care over both body and mind. The great essentials in health problems were good conduct and cleanly habits.

In Great Britain and Ireland during the past 40 years the death rate from all forms of tuberculous diseases has fallen from 3.6 per 1,000 of the population to 1.6 per 1,000. This is a fall of 51.5 per cent. in the death rate from this disease. On the old rate the deaths in Britain would be about 157,000, whereas it is now only 75,000. This is showing the effect of better living and sanitation.

Dr. Charles Ray died at Tunbridge Wells, recently, in his 95th year. He was apprenticed to a Mr. Peter Holland, who, on account of his very short legs, often fell and sustained a fracture of some sort. When the late Dr. Ray was receiving his diploma from Sir Astley Cooper he was asked by that distinguished surgeon "how many bones Mr. Holland had broken?" The young Dr. Ray answered, "Well, sir, I think nearly all."

Professor Harnack, of Tübingen, and Professor Nicol, of Aberdeen, have given much attention to the study of the medical element in the New Testament. Both have arrived at the conclusion that Luke, the beloved physician, was the author of the third gospel as has generally been accepted. But they also maintain that the Acts of the Apostles is from the same pen. Luke was a gentile and most likely a Greek.

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**OBITUARY.**

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**W. G. TYNER, M.D.**

Dr. W. G. Tyner, of Picton, a former Kingstonian and graduate of Queen's, was killed near Picton during the night of 15th October, his automobile having overturned in a swamp fell upon him. His body was found in the morning. He was a prominent physician, about 32 years of age, and married. Dr. Tyner left Picton in the evening in his auto about 3.30 for Belleville, and in the morning his body was found under it. His neck was broken, death being instantaneous. The late Dr. Tyner was the eldest son of the late W. W. Tyner of the lumber firm of Noon & Tyner of Kingston. He was born and brought up in that city. In 1898 he graduated as bachelor of arts at Queen's, and in 1901 as doctor of medicine.

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**W. L. HERRIMAN, M.D.**

The death of Dr. W. L. Herriman, of Lindsay, came with startling suddenness in the morning of 9th October, notwithstanding the fact that the deceased gentleman had been in frail health for some time past. He had been a resident of Lindsay for over twenty years, and had taken no inconsiderable part in the public affairs of the community, having been a member of the municipal council and having taken an active interest in various lines of work which had for their object the moral and religious welfare of the town. Interment took place at Port Hope.

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**A. K. FERGUSON, M.D.**

Dr. A. K. Ferguson, of 700 Bathurst Street, Toronto, while riding his wheel on the afternoon of 6th October, was almost instantly killed. He was attempting to cross in front of a street car when the front wheel of his bicycle caught in the groove of the rail causing him to fall. In an instant the front truck of the car was upon his body. He was terribly mangled, but retained consciousness for a short time. He formerly practised in Kirkton, from where he removed to Toronto about five years ago. He graduated in 1893. While a student he was president of the Medical Y.M.C.A. He leaves a widow and two children. He was in his 45th year. His wife was at the station seeing her sister off, and on her return home was greeted with the news of the doctor's death. The remains were interred at Avonbank, his old home.

## CHARLES ERASTUS HICKEY, B.A., M.D.

Dr. Hickey died on the 19th September, at his home in Cobourg. He was in his 70th year. He obtained his B.A. from Victoria University in 1863, and his M.D. from McGill in 1866. For many years he followed his professional duties in Morrisburg, from where he removed some three years ago to take charge of the asylum for the insane at Cobourg. He sat in the Federal House for ten years. The late Dr. Hickey was very highly esteemed by all who had the pleasure of knowing him.

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## CHARLES H. BRERETON, M.D.

Dr. Brereton, who was at the home of his son Dr. T. C. Brereton, of Carnduff, Sask., was taken ill and died on 6th September. The late Dr. Brereton was a citizen of Bethany, Ontario, where he had lived and conducted his practice for many years. He graduated from Victoria University in 1868.

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## GEORGE HUNT, M.D.

The late Dr. George Hunt was born at Thornton, Ontario, 29th November, 1865. He studied at the Toronto School of Medicine and graduated from Victoria University in 1886. For two years he practised at Rosemount, and then located in New Lowell, Ontario, where he remained till his death, on 5th September, at the age of 43. He was the Medical Health Officer for Sunnidale Township, and took an active part in the establishment of the House of Refuge for Simcoe County. He was highly esteemed by those who knew him. He leaves a wife and son to mourn his untimely loss.

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## SAMUEL P. MAY, M.D.

The death occurred 20th October, of Dr. Samuel Passmore May, one of the veterans in the public service. He was eighty years of age, and had been in poor health for some time. After receiving a thorough academic training in England he came to Canada in 1853 and became connected with the Department of Education in Upper Canada, under the direction of the late Dr. Ryerson. In 1863 he obtained his M.D. at Victoria University and afterwards became curator of the museum there and lecturer in pharmacy and microscopy. He had charge of a number of

Canadian exhibits in foreign lands and in connection with one exposition in Paris he received the French Legion of Honor. His last work with respect to exhibitions was at the World's Fair at Chicago in 1893, when he had charge of the Ontario educational exhibit. Since 1880 he held the office of Superintendent of the Ontario Art Schools and Inspector of Public Libraries. In this work he made periodical tours throughout the Province.

In the early part of 1905 he resigned his position and has since been living retired.

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WILLIAM STEPHEN, M.D.

Dr. William Stephen, formerly of Toronto and Wallaceburg, Ontario, one of the founders of the Anti-tuberculosis Society, died in Vancouver, B.C., on 20th October.

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BOOK REVIEWS.

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PATHOGENIC MICRO-ORGANISMS, INCLUDING BACTERIA  
AND PROTOZOA.

A Practical Manual for Students, Physicians and Health Officers. By William H. Park, M.D., Professor of Bacteriology and Hygiene in the University and Belleville Hospital Medical College, New York. New (third) edition, thoroughly revised and much enlarged. Octavo, 648 pages, with 176 illustrations and 5 full-page plates. Cloth, \$3.75, net. Lea & Febiger, Philadelphia and New York, 1908.

For the student this work is particularly well calculated. It is brief and comprehensive. The methods are clearly stated, a fact of the utmost use for laboratory work. We can recommend this book to all who wish a knowledge of micro-organisms.

Dr. Park was the first to give concrete recognition in book-form to the fact that diseases caused by animal organisms are almost as important to the human race as those resulting from low forms of vegetable life. It is true that the pathogenic bacteria, representing the vegetable kingdom, are more numerous than the disease-bearing protozoa, or animalcules, and it is also true that the later are more difficult to cultivate and demonstrate, but no reason can justify ignoring them. Professor Park, perceiving this deficiency, supplied it in the most effective manner by preparing chapters on the protozoa and placing them with others on bacteria in a single volume, where they could be studied together, both in similarity and contrast. His work was thus the first to

cover all diseases caused by micro-organisms. The need for it and the acceptable way it supplies that need may be seen in the demand for three editions. In a subject of such intense activity, growth is very great, and accordingly the changes in this new edition are extremely thorough-going. Like its predecessors, it is intended to answer the needs of the student and physicians to cover the whole subject of pathogenic micro-organisms from both standpoints.

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### THE CAMPAIGN AGAINST TUBERCULOSIS AND THE TUBERCULOSIS DIRECTORY.

One of the most unique national directories ever issued has just been published under the title "The Campaign Against Tuberculosis in the United States." Tuberculosis (consumption) takes more lives than any other single disease—100,000 a year in the United States alone. It is both curable and preventable, and over 200 organizations in this country are engaged in the fight against it. Hence the need for this directory.

The directory includes all institutions and organizations dealing with tuberculosis, a digest of all legislation regarding it, etc. By means of it a person can tell just what his state and city have done in the campaign, and can tell a consumptive the nearest sanatorium, its terms (paid or charitable) and the entrance requirements. The book is sent for \$1, postage prepaid, by Charities Publication Committee, 105 East 22nd Street, New York.

This book is the first of a series to be issued by the Charities Publication Committee, acting for the Russel Sage Foundation for the improvement of social conditions. Such literature as this widely distributed and widely read will have an excellent effect in awakening the public conscience to a sense of its duty on this most important question.

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### GENITO-URINARY DISEASES AND SYPHILIS.

By Edgar G. Ballenger, M.D., Lecturer on Genito-Urinary Diseases, Syphilis and Urinalysis, Atlanta School of Medicine; Editor Journal-Record of Medicine; Genito-Urinary Surgeon to Presbyterian Hospital, Atlanta, Ga., with 86 illustrations; 276 pages. Practical, concise. Price \$3.00, carrying charges prepaid, E. W. Allen & Co., Publishers Atlanta, Georgia.

This book was written as a brief treatise for the medical student, whose time and knowledge forbid his thorough understanding of the large works written for experienced practitioners and specialists. As Dr. Ballenger has reviewed rather carefully the recent literature on the subject, the book also will prove of value to the practitioner who desires a concise work on genito-urinary diseases and syphilis. The field of gen-

ito-urinary diseases are very concisely and clearly set forth in this book. Much credit is due the author for his skill in covering so much ground in such a brief manner. The author has drawn from the best writers upon the subjects discussed in these pages. Outside of syphilis and gonorrhœa, there is due attention paid to stricture, enlarged prostate, sexual neurasthenia, incontinence of urine, etc. The statement found in this work can be taken as reliable, and in accordance with the most modern teachings.

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### THE PROLONGATION OF LIFE.

By Sir Hermann Weber, M.D., F.R.C.P., Consulting Physician to the German Hospital, the National Hospital for Consumption, Ventnor, and the Mount Vernon Hospital for Consumption, and a member of the Consulting Committee of King Edward VII. Sanatorium at Midhurst. Third and enlarged edition of a Lecture delivered before the Royal College of Physicians on December 3rd, 1903. London: John Bale, Sons and Danielsson, 83-91 Great Titchfield Street, Oxford Street W., 1908. Price, 4s. 6d. net.

“Work and moderation are the main sources of health, happiness and long life,” are the words that stand as the motto for the teachings of the author. This book is most fascinating reading. The natural term of life, the influence of heredity, the cause of death from old age, the action of exercise, foods alcohol, tea, coffee, tobacco, sleep, the prevention of disease, etc., are all dealt with in a very direct and clear manner. On the question of food he puts in a strong plea for a simple life. Plain food and properly cooked, and not consumed to repletion are the master words to which he invites attention. He lays down the statement that “superabundance of food leads, in fact, more frequently to starvation of tissues than what is often misnamed ‘starvation diet,’ which maintains them in a healthy condition.” On the subject of alcohol he concurs in the views of Sir Frederick Treves “that it is a poison which ought to be avoided by everybody, excepting in the smallest quantity; there can be no doubt that total abstinence from alcoholic beverages would greatly promote the health of the human race. Alcohol is not necessary to healthy persons.” With regard to tobacco the words of the book are those for moderation, or the non-use of the “weed” in any form.

The effect of emotions for good or evil are gone into carefully. The influence of happiness is emphasized. Worry is regarded as the “foul fiend” that does sad work for many of us; and it is laid down as one of the axiom of a wise life that one should not make worries for himself.

One should cultivate the habit of thoroughness and avoid haste. One should try to develop a strong will, and study how to secure variation in mental occupations.

Upon the whole we find ourselves in very thorough accord with the teachings of this book. We could wish that a copy found its way into the hands of every physician. The book is got up in a very readable form. It is well bound, and the paper and type are all that could be desired.

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### DISEASES OF THE NERVOUS SYSTEM.

By H. Campbell Thomson, M.D., F.R.C.P., Physician to the Outpatients at the Middlesex Hospital, Dean of and Medical Tutor in the Middlesex Hospital Medical School and to the Hospital for Epilepsy and Paralysis, Maida Vale. With 8 coloured and 12 black-and-write plates, and 101 figures in the text. Cassell and Company, London, Paris, New York, Toronto, and Melbourne, 1908. Price, \$3.15.

This small book begins with an introduction on the structure of the nervous system, remarks on the reflexes, electrical reactions, and lumbar puncture. This is followed by a review of our knowledge on the peripheral nerves. The myopathies are considered. The diseases of the spinal cord is the next section. There is full share of attention given to the organic diseases of the brain. The book closes with a number of chapters on diseases of functional and general origin. We have read this book with very much pleasure, must state that we like it very well. It is not often one's good fortune to have to review a more thoroughly interesting book than this one. We feel like urging ourselves to get a copy of this book and make its contents thoroughly their own. It contains an excellent working knowledge of diseases of the nervous system. Many practitioners are prone to regard this department of medicine as a very difficult one; and so it is, but with this book of Dr. Thomson's much of that difficulty will be cleared away. The book is neatly bound. The paper is thin and of very fine quality, so that the 475 pages do not bulk above what one could put in his pocket. This is just the sort of book that is bound to make many friends, and retain them when it has made them.

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### THE CURE OF RUPTURE.

By Paraffin Injections by Charles C. Miller, M.D., comprising a description of a method of treatment destined to occupy an important place as a cure for rupture owing to the extreme simplicity of the technic and its advantages from an economic standpoint. Published by the Author, 70 State St., Chicago. Prepaid, \$1.00.

It is only a few years since "The Paraffin Treatment of Hernia" has come into use. The present small book by Dr. Miller sets forth the value of the method, and how the injections should be made. The author takes

pains to state that the paraffin does not plug up the opening, but distributes itself into the tissues and leads to increase of the fibrous tissue. While this is going on, the paraffin acts as a support to the part. Full details are given in the book regarding the method of operating. Ten cases are reported as cured. In no instance has there been any bad result. This treatment will require to be on trial for some time yet before it can be regarded as reliable. Dr. Miller has, however, made out a good case.

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## MISCELLANEOUS.

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### JUVENILE CRIME IN GREAT BRITAIN.

The principal feature of the British Prison Commissioners' report for the year ending March last is the reference to juvenile crime.

The commissioners say: "We are very glad to say that the diminution of juvenile crime, strictly so-called—that is, offences by persons under sixteen years of age—continues, the numbers of those between twelve years and under sixteen, during the last eleven years from 1897, having fallen from 1,630 to 566, or by nearly two-thirds. We have referred more than once to the remarkable decrease in recent years in the number of juveniles received into Birmingham prison. Last year there were only twenty, as compared with fifty the previous year, and only five from the city of Birmingham itself. This year there were only eight, as compared with twenty, and no case at all was received from the city of Birmingham—a singular example of the successful operation of the Children's Court in that city. The picture drawn by the Governor of Newcastle prison as to the treatment of juveniles in that city is not so bright. Though there has been a slight decrease in the committals—that is, from 120 to 93—that number is still high. He quotes the case of a boy, aged fifteen, who had seventeen previous convictions, and the longest sentence he had ever served was five days. He states, also, that when these boys are allowed time to pay their fines they make it the practice of surrendering themselves to the police on a Friday night, and so spend only one night in prison. The same boys are sometimes in prison for two or three weeks in succession. On one occasion six boys were received on a Friday under sentence of three days, and one with a sentence of two days. They were all by law released the following morning. We concur with the opinion of the governor as to the absolute futility and harmfulness of dealing with juvenile offenders in this way."

Referring to the Borstal system, the commissioners state that for the present and until there is an alteration in the law they will continue

to work on existing lines. The reports received of the working of the Borstal system, both "full" and "modified," for the year are extremely satisfactory.

The statistical portion of the report shows the following figures:—

	Last year.	Pr'v's. year.
Received in local prisons under sentence of penal servitude or imprisonment by ordinary courts.	176,602	178,343
Soldiers and sailors sentenced by court-martial....	501	545
Debtors or on civil process.....	1,212	1,164
Total.....	195,233	199,282

Of the 1,179 convicts received into local prisons under fresh sentences of penal servitude during the year 430 had served previous sentences of penal servitude, a proportion of 36.5 per cent. as compared with 33.2 per cent. during the previous year, when the number received was 1,035, of whom 344 had served previous sentences of penal servitude.

#### IMPORTANCE OF CLEAN MILK.

The importance of a clean milk supply in our present-day large communities was urged by Dr. Goler, Medical Health Officer of Rochester, N.Y., addressing a meeting of the Toronto Academy of Medicine in the University Medical building. Dr. Goler illustrated the innumerable chances the milk has of becoming impure before it reaches the consumer, through ignorance or carelessness on the part of the farmer and dealer, and also the sad results of this impure milk in the large infant death rates.

Then he outlined the plan of campaign which the health department of Rochester was adopting to the end that the people might be educated to insist on clean milk. Experimental dairy farms had been established in the surrounding country, at which every precaution was taken to prevent the contamination of the milk, and the milk from these was distributed by means of city milk stations. When such precautions were taken, Dr. Goler claimed pasteurization of the milk was entirely unnecessary, and was, in fact, detrimental.

Mr. W. K. McNaught, M.P.P., who was present as the guest of the academy, said that it was his intention to bring before the Legislature in the coming session some form of legislation which would tend to purify the milk supply. All that was necessary, he said, was to arouse public opinion on the subject in order to insure its realization.

Mr. J. Ross Robertson suggested the establishment of a dairy farm from which the hospitals of the city might be assured of obtaining clean milk.

### THE NEUTRALIZATION OF DYSCRASIA.

In a very excellent article on "Various Forms of Headache," which appeared in "Medical Progress" a short time ago, Dr. J. U. Ray of Blocton, Ala., states that "We must not only be particular to give a remedy intended to counteract the cause which produces headache, but we must also give an anodyne which will relieve the pain until the constitutional dyscrasia to which this trouble is due, has been neutralized. To answer this purpose, two antikamnia tablets will be found a safe and convenient remedy. Usually they relieve the pain within twenty minutes. When we have a patient subject to sick headache, we should caution him to keep his bowels regular, and when he feels the first premonition of an attack, he should take two antikamnia tablets. Most all patients tell us they know by certain symptoms when an attack is about to come. To these patients we can do nothing better than give them antikamnia tablets to be carried around with them always ready for use. They are prompt in action, and can be depended upon to produce the most soothing anodyne action. In this country and also in England these tablets are largely employed, with results that have caused them to be depended upon by the best observers in both countries. The remedy, having none of the drawbacks common to other agents of this class, it is eminently fitted to be applied in the treatment of the cases just described."

### ECTHOL IN BLOOD POISONING.

I am well pleased with effects of Ecthol in severe cases of blood poisoning; as an external remedy in all painful affections, especially rheumatic, as was demonstrated in the case of my wife, who was laid up in bed with a painful rheumatic affection of one of her feet, which after bathing and wrapping in Ecthol, to my surprise was about the house again the next day. She swears by it, and will not allow me to be without it. I have also found it excellent in pruritus ani and erysipelas. I prescribe it through a druggist in Newburg, and have bought three bottles for myself. I am now using it in a case of ulcer in an old man, on the bottom of his foot, which is healing.

G. A. GORSE, M.D.,  
Madawbrook, N.Y.