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ON A GIANT-CELLED RHABDOMYO SARCOMA FROM THE  
TROUT.

BY

J. G. ADAMI, M.A., M.D., F.R.S.

(From the Pathological Laboratory, Royal Victoria Hospital.)

The subject of tumours derived from striated muscle is one that is still involved in considerable uncertainty. French pathologists of the present time, more particularly, report numerous cases of sarcoma which they regard as directly derived from muscle tissue elements, but this view is not by any means universally accepted. It may be laid down as a general rule that the more highly differentiated a tissue, the less is its tendency to afford neoplasms. When we encounter indubitable tumours, containing more or less imperfect but recognizable striated muscle elements, these, with the rare exceptions, are not in association with the ordinary muscles of the body, but are of the nature of mixed tumours, derived, it would seem, by displacement of cells capable of giving rise to striated muscle elements during the course of development. Most often in such tumours there is an admixture of cells of other orders, cells of a sarcomatous type, gland cells and, it may be, bone and cartilage and other tissue elements.

Another feature that we may lay down as characteristic of tumours in general is that the cells composing those tumours represent more or less faithfully some stage of development short of the perfect adult type. If we study the development of striated muscle, we find that there is a pre-existing stage in which the sarcoblasts, the embryonic cells giving rise to this particular tissue, become multinucleate, become, in short, giant cells. In fact, the adult muscle fibre is itself multinucleate. We should expect, therefore, were tumours derived from striated muscle at all common, to find giant-celled growths originating in association with the striated muscle in man. As a matter of fact, in the ordinary rhabdomyoma of man we encounter not infrequent multinucleate cells, but to my knowledge a tumour composed wholly of these,— what may

be termed a pure giant-celled rhabdomyosarcoma is unknown, or, at least, has so far failed to gain recognition as a separate entity. By great good fortune, I am indebted to my colleague, Dr. Hamilton White, for an exquisite example of this very condition in a trout caught by him in October. The fish is the "red trout," and was caught in Balsam Lake, Montfort district, in this province. Save for the tumour, it was a well grown individual, 14 inches long, and weighed about three-quarters of a pound. It will be seen that some 4 cm. behind the main dorsal fin and 1.5 cm. in front of the posterior dorsal fin, there is, on the left side, near the middle line, a very definite tumour. When brought to the laboratory, this was covered by a healthy unbroken skin, and projected some 1.5 cm. above the general surface.

On dissection, the tumour was found to be almost spherical in shape and 3 cm. in diameter lying to the left of the dorsal spines and not attached to these. A layer of muscle appeared to pass over it, and it had a semi-fluctuating feel. It was well defined, and was easily separated from the surrounding tissue.

On section, the tumour is found to be composed almost wholly of giant cells, varying, it is true, greatly in size and shape. The smallest cells may contain but two or three nuclei, the largest, without exaggeration, many hundred. There is no definite capsule, but at the periphery there is a zone exhibiting a moderate grade of small-celled infiltration, in which the tumour cells proper infiltrate between still recognizable striated muscle elements. This infiltration, it is noted, extends between the dorsal spines to the right side to a slight extent. These more normal muscle fibres are easily distinguishable; while shrunken, they exhibit regular striation and well marked longitudinal fibrillation. The interesting part is that in making a careful study of these remarkable giant cells certain of them are of very great length as compared with their breadth, and the nuclei are gathered more particularly at one pole. Such cells recall in a very striking manner the buds or processes projecting from the muscle fibre of a mammal in the process of regeneration after injury and in not a few of them the part of the cell furthest from the grouped nuclei shows well-marked longitudinal fibrillation, while here and there irregular but distinct transverse striation is to be made out. Studying the various transitional stages, there can be no doubt that here we are dealing with a rhabdomyosarcoma, and, as I have already indicated, we have encountered a new form of muscle tumour, but one, which from embryological considerations, is also to be termed "natural" and to be expected. We have found this in one of the lower animals, and it now remains to be seen

whether this form occurs also in man, and whether in man we have to add to the list of giant-celled tumours, a type gaining its origin from voluntary muscle.

Tumours in fish are not unknown. Some twelve years ago, I received from Dr. Deeks a relatively large myxofibroma, which he had removed post mortem from a cod, caught in the Gulf. If I mistake not, I brought the case before the Society. Recently, in connexion with the study of the distribution of malignant growths throughout the animal kingdom, there has been an increased interest in the subject, and several cases have been reported of tumours of different orders found in fish.

The majority of these cases, curiously enough, are of adenomatous and even of definitely carcinomatous type (Scott, Gilruth, Plehn, Pick, and Bashford's first case). Judging from Dr. Marianne Plehn and Pick, and Poll's cases, their most common situation in the salmonidæ is below the lower jaw in the floor of the mouth. This position and their histological structure suggests strongly an origin from thyroid tissue. Bashford records a malignant adenoma of the peritoneal cavity of the Gurnard. The only sarcomatous tumour to which I have found reference is Bashford's second case, that of a spindle-celled sarcoma of the codfish, the figure given by him, with its loose arrangement of cells, shows some similarity to our own specimen of myxofibroma in the same fish. So far, I have been unable to come across the description of any case of a fish tumour at all resembling that here described.

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### EXPERIMENTAL "WORK-ARTERIOSCLEROSIS."

BY

OSKAR KLOTZ, M.D.,

(From the Pathological Laboratory of the Royal Victoria Hospital.)

The experimental work in arteriosclerosis has, up to the present, been mainly of the nature of mechanically injuring the vessels, or else by introducing foreign toxic substances into the animal body. Of the latter type much has been written in the last four years, and it has been shown that substances like adrenalin chloride, barium chloride,

digitalin and nicotine, all of which produce high pressure in the arterial system, are capable of bringing about definite arterial lesions. It has also been shown that certain bacterial toxins act on the vessel walls, either by producing degenerative changes, or else in stimulating the proliferation of certain cells.

There has been a considerable controversy as to the nature of these arterial lesions, whether they were the result of the toxic substances, acting directly upon the tissue cells, or whether their mechanical effect of increasing the blood pressure was capable of bringing about these changes.

Clinically, it has been noted that in the adult, the vessels of the more active organs show hypertrophy and sclerosis earlier than in the less active parts. In right-handed persons the radial arteries are considerably more sclerosed than those on the left side, and the reverse is true in left-handed people. Similarly, those whose occupation requires them to be constantly walking around and on their feet show the most advanced arterial changes in the vessels of the legs. These facts point to the prominent part that is played by work, in the production of arteriosclerosis, but still the question arises whether in a healthy vessel increased work alone can bring about sclerotic changes, or whether it is necessary to couple the factor with the effect of toxic agents.

It was my endeavour to throw some light on this question by experimental means. I chose healthy, nine months old rabbits to carry on the experiments. The first animal was treated for one hundred and thirty days, by suspending him by the hind legs for three minutes each day. The endeavour was to increase the pressure and the mechanical stress in the arteries, without employing any drugs. By inverting the animal, the pressure in the thoracic aorta and in the arch is decidedly increased over that which normally exists in the animal. At the beginning, the animal did not seem to be worried by treatment, but later on it showed signs of dyspnoea, and the heart beat was accelerated. Towards the end it was noted that the animal was much fatigued after each treatment.

At autopsy the following was noted:—There were no lesions in the vessels of the brain and no hæmorrhages had occurred in this organ. The carotid vessels had a remarkable appearance; the arteries were enlarged to about twice their size, and looked like sclerosed radials. There were distinct beadings on the vessels, which were most marked just above their origin from the aorta. These beadings were white in colour and encircled the vessels in transverse rings. Similar appearances were also present on the subclavian and brachial vessels. The

beadings were distinctly palpable, while the vessels in general were firmer than normal. The amount of change in these arteries diminished after the bifurcation of the common carotids, though it was still apparent in some of the smaller branches.

*Thorax and Abdomen.*—The lungs were healthy and without change. The heart showed an enlargement of, at least, one and one-half times its normal size. The ascending aorta had its walls thickened, and was larger than normal. This increased size was apparent as far as the middle of the arch, or just beyond the opening of the left brachial. The wall felt firm and nodular, and did not collapse when its contents were removed. Opposite the 6th rib the vessel again dilated to twice its size, forming a fusiform aneurysm as far as the diaphragm. This aneurysmal dilatation had firm and brittle walls, in which concentric rings could be distinguished passing about the vessel. Below the diaphragm the aorta again became smaller, but showed thickening of its coat, which was visible as far as the right renal artery. The beginning of the coeliac axis was also sclerosed, though no changes were noted in the branches of this vessel. The renal arteries were normal in appearance, and below them the aorta, too, was without change. There was no change to be noted in the iliac arteries, nor the vessels of the legs, nor did the viscera of the abdomen exhibit any microscopical lesions.

We have, therefore, produced macroscopical changes in the aorta and its branches above the renal vessels. In these changes the aorta is chiefly involved, while the carotids and the vessels of the neck are also sclerosed. Consequent upon the weakening of the aortic wall by sclerosis, a fusiform aneurysm developed in the thoracic aorta.

#### MICROSCOPICAL.

*Ascending Aorta.*—The aortic wall was hypertrophied, the thickening occurring in the intima and possibly in the media. The media, where it was apparently thickened, was normal in structure and showed the alternating layers of elastic fibres and muscle tissue. The intima, where thickened, showed the hypertrophy to be in the muscle elements (of the musculo-clastic layer). There was no connective tissue proliferation to be found. With the intimal thickening there was everywhere a process of degeneration accompanying it. This degeneration in the mildest form occurred close to the internal elastic lamina, and, in the more advanced types, extended closer to the endothelial surface. The muscle cells themselves were degenerating and disintegrating, leaving areas of non-cellular debris. These areas showed many spicules

of crystals like those of calcium salts. Many of the cells were vacuolated as if containing drops of fat. In one area the media, too, showed degeneration where the muscle cells were entirely wanting, while the elastic bands were thrown into prominence by a darker blue staining, due to a calcification. Fractures were occasionally seen in the elastic laminae. Remarkable cells were found between these calcified elastic bands. These cells were large with a spherical media and lay in a homogeneous looking matrix with vacuoles about them. One was reminded of the appearance of cartilage cells, though definite cartilage was not to be made out.

A study of these sections convinces one that the muscular changes are primary. The rupture and changes in the elastic fibres are secondary.

*Descending aorta just above diaphragm.*—The vessel wall was in its greatest extent narrowed. Only short stretches of normal looking aortic wall were seen. The rest of the wall showed a hypertrophied intima, in which the musculo-elastic layer was thickened, while the media was much narrowed. The middle zone of the media showed a band of calcification almost encircling the vessel. There was a narrow strip of media on both sides of the calcified band, which showed the muscle cells wanting to a great extent, while the elastic fibres lay more closely together. The adventitia nowhere showed change. In the calcified band of the media no cells were to be made out. This degenerative change in the descending aorta resembled that produced in the aorta by adrenalin chloride.

*Carotids.*—In the carotids the changes found were principally located in the intima. The media showed no changes in any part, save such as is produced by the compression of the thickened intima and slightly fatty degeneration along the border of the internal elastic lamina.

The intima was in parts normal, consisting of a single layer of endothelium lying upon the internal elastic lamina. In other parts there was a thickening of this membrane to that exceeding the thickness of the media. This thickened portion of the intima was made up of a superficial and circularly disposed layer of connective tissue (possibly of endothelial origin), while beneath this was a thick layer of longitudinally disposed muscle fibres, with extensive fatty degeneration in them. In this deeper layer of the intima many of the muscle cells had entirely disappeared, leaving behind a granular debris mixed with minute fatty granules. In some places this thickened intima occupied one-half the circumference of the vessel.

We have, therefore, in this experiment been able to reproduce by physical means two kinds of changes in the arterial walls. The one is

isolated in the media without intimal change and consists of a purely degenerative process, with death of the muscular elements and calcification of the involved areas, including the elastic fibres. The other change is isolated to the intima, and consists mainly of a proliferation of the tissue, while a secondary fatty degeneration has occurred in the newly formed tissue.

In the lesions of the first type involving the media there has also occurred the production of aneurysm. This, as we have previously pointed out, is the common result of severe degenerative changes in the media.

I believe, therefore, that we may conclude from these experiments that work plays a very important rôle in the production of arteriosclerosis of different characters, and that even in vessels of different histological structure sclerotic changes can be brought about by increasing the work of the artery. And further, as a consequence to certain changes, degenerative in character, taking place as the result of increased work in the media of the vessels, aneurysms may result.

We understand from Professor J. J. Mackenzie that Dr. Harvey of Toronto, working at Cambridge, has by different methods of increasing arterial pressure obtained marked changes in the arteries. As to the character of these changes, we have no information beyond that they are arteriosclerotic. We gather from Professor Mackenzie's letter that this paper has just been presented to the Royal Society of London.

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## TRYPANOSOMES IN MONTREAL RATS.

BY

OSKAR, KLOTZ, M.D.

(From the Pathological Laboratory of the Royal Victoria Hospital.)

After Dr. Todd's extensive report before this Society on the Trypanosomes of Central Africa Sleeping Sickness, we are apt to associate this organism with diseases in far off lands. There are, however, many varieties of trypanosomes, and it would appear that some of the animal parasites not yet fully worked out will yet be classified amongst the trypanosomes. During the winter of 1906-07, Dr. Ballah and I examined for trypanosomes some forty rats, all obtained in the same locality in Montreal. These examinations all proved negative. Recently I examined two rats from a down-town grocery, and found both of them to harbour trypanosomes in their blood in large numbers. Subsequent to this, Dr. Rankin found trypanosomes in a rat obtained at the Royal Victoria Hospital. No doubt, if an extensive search were



made, these trypanosomes would be found in a large percentage of the rats of this city.

This organism, the *T. Lewisi*, is a very common parasite in the ordinary house rat, some even claim that it is as widely distributed as the rat itself. Novy, of Ann Arbor, was the first to recognize the *T. Lewisi* in America. Since then, I learn that it has been found in Detroit, San Francisco, Philadelphia, New York, Lincoln, Seattle, Chicago and Ottawa.

## A CHART FOR THE STUDY OF CONGENITAL CARDIAC DISEASES.

BY

M. E. ABBOTT, M.D.,

Governor's Fellow in Pathology, and Curator of the Medical Museum,  
McGill University.

(From the McGill Medical Museum.)

*Mr. President and Gentlemen:—*

During the past few months I have been engaged in the statistical study of some 404 cases of congenital cardiac disease. These cases have been drawn from reliable sources, and only those with post mortem report attached have been included, so that the data derived from their study are of much interest and are of value as positive statements. Some of these conclusions I hope to bring before the Society at a later date. Meantime, I take this opportunity of demonstrating to you the chart which I have used as a basis of this work. This chart, 300 copies of which have been printed, is meant for the study of the individual case, and is spaced for eleven such. For the purpose of this evening's demonstration, however, I have inserted in its columns the total figures from those cardiac defects which, both from their relative frequency and from the fact that they usually present signs or symptoms during life, may be considered of clinical importance. There are 324 such defects among the 404 cases analyzed. The form of defect is stated in the left-hand column of the chart in the space devoted to the "Lesion," and opposite to it, reading across the chart from left to right, is the total number of cases of this group in which the condition specified in the different columns, occurs. The number of cases in each group is as follows:—

- (1) Localized defects of the interauricular septum (including widely patent foramen ovale), 28 cases.
- (2) Localized defects of the interventricular septum, 40 cases.
- (3) Complete defects of the cardiac septa, as cor biloculare, trilobulare, etc., 12 cases.

(4) Complete defects of the aortic septum, 14 cases, (includes persistent arterial trunk, 8 cases, and communication between the aorta and pulmonary artery, 8 cases).

(5) Transposition of the arterial trunks, 47 cases.

(6) Congenital pulmonary stenosis, 75 cases, of which 7 cases are with closed septa, 9 with patent foramen ovale but closed interventricular septum, and 59 with defect of the interventricular septum.

(7) Congenital pulmonary atresia, 28 cases, of which 6 are with closed interventricular septum, and 17 with defect of the interventricular septum.

(8) Aortic stenosis or atresia, 8 cases.

(9) Tricuspid stenosis or atresia, 9 cases.

(10) Patent ductus arteriosus, 19 cases.

(11) Coarctation of the aorta, 32 cases, of which 5 are of the infantile, and 27 of the adult type.

(12) Hypoplasia of the aorta, 2 cases.

The chart has three main divisions:—

I. In the first of these the group number of the case, the reference, the form of lesion, age and sex, are given. In this combined chart the maximum, minimum and mean age of each group is calculated in the age column.

II. In the second division are recorded the post mortem findings. Columns are devoted here to patency of the fetal passages and defect of the interventricular septum, to *dilatation* or *hypoplasia* of the pulmonary artery or the aorta, to the presence of a deviation to the right or *rechtslage* of the aorta (so common an event in defects of the interventricular septum), to the incidence of arterial disease, of *acute endocarditis*, of *chronic valvular lesions*, of *associated anomalies* in the heart, vessels, or elsewhere, and to the presence of *hypertrophy* and *dilatation* of the four chambers of the heart. A column is given to the existence of a *collateral circulation*, which is common in coarctation of the aorta of the adult type, appearing here in 16 of the 17 cases, and which occurs also in those instances of pulmonary atresia in which the circulation of the lungs is not supplied through the patent ductus.

The incidence of *acute endocarditis* in cardiac defects is a point upon which statistical study is needed. The series show this event to be relatively frequent, especially in defects of the interventricular septum and in pulmonary stenosis. *Chronic endocarditis* is even commoner. *Hypertrophy* and *dilatation* of the heart cannot be read clearly from a combined chart for the different chambers are involved in the individual cases. But here, also, it is interesting to note the frequency with

which the right chambers chiefly are involved in defects of the interauricular septum, in pulmonary stenosis and atresia and transposition of the arterial trunks, while both the ventricles but chiefly the right are enlarged in defects of the interventricular septum at the base and patent ductus arteriosus, the left chambers in coarctation of the aorta. Under the heading of *Arterial Disease* it is seen that in defects of the interauricular septum, the pulmonary artery is often dilated and atheromatous; and in hypoplasia and coarctation of the aorta atheromatous changes, dissecting aneurysm and ruptures of the aorta are liable to supervene. Finally, the presence of *Associated Anomalies* is of great importance as pointing to a developmental origin of the defect. This is well seen in pulmonary stenosis and atresia; other anomalies were absent in all the 7 cases with closed septa which are probably of inflammatory origin, while among the 59 cases with septal defect they were noted as present in 42 instances.

III. The third division of the chart is devoted to clinical data. Under the column *Family History* are noted those conditions which have a distinct etiological bearing upon the defect, as disease of the mother or accident during pregnancy, congenital heart disease in other members of the same generation, etc., and of these there is a goodly sprinkling. Under *Personal History* the incidence of rheumatism, tuberculosis, congenital syphilis and infectious diseases with recovery is shown. Among the 324 cases there is only one presenting clear evidence of congenital syphilis. Tuberculosis is seen to be relatively common among cyanotic patients reaching early adult life, such as the subjects of pulmonary stenosis. A relatively large proportion of cyanotic cases are seen to come through the acute infections of childhood well.

Among *special symptoms*, cyanosis, clubbing, dyspnoea and dyspnoeic attacks are noted. Cyanosis is divided into slight, moderate, marked, transient and late or terminal. It is marked in most of the cases of pulmonary stenosis and atresia and of transposition, and is usually absent in coarctation of the aorta and patency of the duct. Six cases of defect of the interauricular septum and four of defect of the interventricular septum at the base showed a terminal cyanosis coming on at the end of a long life, when bronchopneumonia or other cause had apparently raised the pressure in pulmonary circulation and reversed the current of blood so that it passed from right to left through the defect, producing an admixture of venous with arterial blood. In these cases of pulmonary stenosis with septal defect and *rechtslage* of the aorta, the cyanosis was deep but transient, appearing only during dyspnoeic attacks and passing off entirely in the interval. Clubbing of

the extremities occurred chiefly in the groups of trilobulate heart and of pulmonary stenosis, in both of which the duration of life of the patient is usually sufficiently long to permit of its development.

The evidence of cardiac defects given by *physical signs* is often conflicting. Only from the detailed study of the pathological findings in a given case, may complicating conditions be eliminated and conclusions be drawn. Such a study has been carried out in this chart and some surprising and most interesting facts are revealed which are at variance with the usually accepted ideas of the physical signs characteristic of these lesions. The presence of a thrill in defects of the interventricular septum, and in cases of pulmonary stenosis with, as well as in those without, associated septal defects, the occasional accentuation of the pulmonary second sound in pulmonary stenosis, the irregular localization of murmur or thrill over the apex rather than the base of the heart, the fact that the most complicated defects are sometimes latent, are negative points of importance, while others of true diagnostic value appear.

The *causes of death* are noted in the columns of the chart according as death is due to the lesion itself and is sudden or with failing; compensation or is due to bronchopneumonia, cerebral disease, or the acute infectious fevers.

This chart, with a more detailed study of the physical signs, will be published in a later number of the JOURNAL.

The beautiful reproduction of the chart on this enlarged scale, which is demonstrated here, as well as much help in the calculation of the figures, I owe to the kindness of my friend, Miss Helen Reid.

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## THE CULTURAL FEATURES OF A NEW PATHOGENIC MICRO-ORGANISM OF THE CONJUNCTIVA.

BY

HANFORD MCKEE, B.A., M.D.

From time to time different forms of conjunctivitis have been shown to be due to specific micro-organisms, so that to-day we have several well known types. The micro-organism which I wish to bring to your notice this evening was obtained in pure culture in May last from a case of conjunctivitis, which seemed different from the known types. Having obtained the bacillus in pure culture, two normal conjunctival sacs were inoculated, a conjunctivitis in each case was set up and from the conjunctivitis the bacillus was obtained in pure culture. Upon that ground it seemed fair to presume that this bacillus was the patho-

genic factor in these cases of conjunctivitis, which number to date sixteen. The next point was to compare this with the known conjunctival micro-organisms.

Differentiation must depend upon cultural features, and the nearer two or more organisms resemble one another, the finer must the differentiation necessarily be.

This organism resembles two of the known conjunctival bacilli closely, namely, the Koch-Weeks bacillus, and the bacillus of Influenza. The time at my disposal will only allow me to describe the cultural features of this bacillus, which seem to me not clearly to differentiate it from these other two.

Clinically, the conjunctivitis was of the catarrhal form, with marked lachrymation. It was a palpebral conjunctivitis, the bulbar conjunctiva being quite uninvolved. There were no signs of influenza present in any of the cases.

The clinical picture differed widely from either the conjunctivitis set up by the Koch-Weeks bacillus or the bacillus *Influenzæ*.

Upon smear the bacillus is seen to be exceedingly small, short and thick, and hardly distinguishable from a coccus.

It stains easily with the aniline dyes, is decolourized by Gram's stain, and shows no polar staining.

The growth of the bacillus upon hæmoglobin agar is characteristic.

The initial tube generally shows numerous colonies of cocci or bacillus xerosis. Between these colonies we will see very fine pin point colourless dots. Upon hæmoglobin agar plates the bacillus is easily obtained in pure culture. After twenty-two to twenty-four hours in the incubator the slant of hæmoglobin agar will be seen covered with a mass of tiny colonies which are not separated. The growth is colourless and, as will be seen by examining the tubes, the colonies are no larger than the sharp end of a pin.

The surface of the agar has a blurred appearance, like a dull mist over it, and is at times so fine it is with the greatest difficulty seen. It is seen much better with artificial than with day light, especially with the proper reflexion of light. This fine mist-like appearance on hæmoglobin agar is the most constant and characteristic of its cultural features. It does not vary, no matter how much material is used in transferring, the growth is always the same. Upon hæmoglobin agar it grows well as a rule, but at times, for some unknown reason, it has been kept viable with difficulty. The media must be of certain reaction and two or three days old. A peculiarity that has been constant is the inability to cultivate it upon freshly prepared hæmoglobin agar. Draw-

ing a platinum loop along a growth and collecting some of it at the top of the tube will show a colourless mass. Drawing some of the bacillus Influenzae growth in a similar manner shows you a distinct white mass like a white coccus. Upon hæmoglobin agar, it is viable for a long time, and once was transferable after a period of two months; upon glycerine agar these same fine pin points will with difficulty be seen. Upon hydrocele agar the growth is similar, upon plain agar the growth has been inconstant. Upon blood serum, bouillon and the ordinary media, negative.

To tubes of litmus agar were added dextrose, dextrin, maltose, lactose, saccharose, galactose, inulin and mannit and a few drops of blood. The growth here was profuse, with no perceptible change in the reaction. To sugar-free bouillon were added the sugars as above and blood. Three tubes of each were taken, one being inoculated with this bacillus, one the bacillus Influenza, one used as a control. After twenty-four to forty-eight hours in the incubator frequent titration with phenolphthaleine gave the following results: The acidity of the tubes inoculated with this bacillus and the control tubes remained unchanged at 1 per cent., whilst in the tubes inoculated with the bacillus of Influenza the acidity changed from 1 per cent. to 2.5 and 2 per cent. After twenty-four hours in the incubator the blood would be seen settled to the bottom of the tubes. The fluid above showed a marked difference. In the tubes inoculated with this bacillus and in the control tubes the fluid was clear, while in the tubes inoculated with the bacillus Influenza a thick turbidity was seen. While fresh cultures of this organism are cultivated easily on glycerine and hydrocele agar, older cultures seem to lose that quality. It has from the beginning been kept in pure culture with the greatest ease. Upon identically the same media this organism would remain pure, while the bacillus Influenza would become contaminated. This has occurred not only once but many times, so that I believe this organism rather repels in some way the growth of contaminants.

Whether the form of conjunctivitis set up by this micro-organism is a mere local condition or not, I am not prepared to say.

Sixteen cases is not a large number, but it is larger than any other form seen here in that period, except Morax-Axenfeld conjunctivitis, which fact seems to me of some significance.

In all of the cultural features which I have described this organism is widely different from the Koch-Weeks bacillus. In the majority of the features which I have mentioned it is vastly different from the bacillus Influenza.

The cultural features on hamoglobin agar alone are enough to satisfy the bacteriologist that this is a new conjunctival micro-organism.

A comparison of the reactions of this organism in sugar-free bouillon, and a study of its cultural peculiarities leave no room for the most skeptical.

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## OVARIAN DERMOID TUMOUR COMMUNICATING WITH THE RECTUM.

BY

WILLIAM GARDNER, M.D.

Professor of Gynæcology, McGill University, Montreal.

Ovarian dermoids are not rare. They are subject to a variety of accidents and complications. They are more liable to these than other ovarian tumours. In my experience the least common complication is that one of which a case is now to be described. The comparative rarity in recent years I attribute to earlier diagnosis and operation.

The patient, aged 31, has been married eight years and is the mother of two children, the first born four years ago and the last five months ago. This woman consulted me first seven years ago when,

At the operation done on 6th January, 1908, a proctoscopic examination, I discovered an ovarian tumour of the left side and advised its removal. I was not urgent and my advice was not heeded. She describes three attacks of abdominal pain from which she suffered in the summer of 1901. The attacks were of short duration, but left her with marked tenderness. About seven weeks previous to my seeing her this second time after the operation of a dose of salts, the patient was surprised to find a lock of hair protruding from the anus. Her medical attendant, Dr. Gow, of Calgary, was called and, with assistance and under chloroform, he removed the hair and diagnosed its source to be an ovarian dermoid tumour communicating with the rectum. Soon after she was brought to Montreal and placed under my care.

At the operation done on 6th January, 1908, a proctoscopic examination was first made, when a nipple-like body with a scanty covering of short hair was found projecting from the anterior wall into the lumen of the rectum, just above the so-called sphincter. Abdominal section revealed an enlargement of the left ovary of the size of a turkey's egg. It was in part intra-ligamentous and in part adherent to the rectum and adjacent peritoneum. It was composed in part of one relatively large loculus filled with bloody fluid and for the rest small cavities filled with sebaceous yellow matter with short flaxen-coloured hair. On separation of the adhesions the nipple-like body was revealed and an

opening in the rectum one inch in diameter was left. This was sutured in two layers with chromicized catgut.

It is worthy of note that the hair growing into the rectum was of the same dark red brown colour as that of the patient's head, while the scanty intraperitoneal hair was of the usual flaxen tint. Ovarian dermoids communicating with the rectum are not the only source of hair found growing into the viscus. Rectal dermoids and post-rectal dermoids are occasionally, but very rarely met with. Of the former, Bland Sutton in his work, "Tumours Innocent and Malignant," figures two examples, both copied from other authors.

Save for slight infection of the incision the patient is making a most satisfactory recovery.

### UNILATERAL CONGENITAL ABSENCE OF THE PAIRED GENITO-URINARY ORGANS.

BY

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This specimen shows an abscess of the genital and urinary structures of the left side, in so far as those structures which are bilateral are concerned. The woman was forty-nine years old, and had borne one child and had one miscarriage. There was no kidney, ureter, renal artery, ovary, Fallopian tube or broad ligament on the left side, and the uterus consisted really of but half a uterus—the right half; the organ was finger-shaped, and pointed to the right at about an angle of 30 degrees from the sagittal plane, which is the usual position and appearance of a uterus which has but one cornu. The vagina and urethra were apparently normal; the bladder was median and showed no sign of left ureteral opening. The right kidney was a little larger than usual and was in the normal position. The body of the uterus measured 6.5x2x2 cm. The right ovary was very small and wrinkled, but the right tube appeared normal.

The anomaly has arisen from the fact that on this side there has been no Wolffian body or duct formed, nor any Müllerian duct, and the entire series of structures which arise from them, kidney, ureter, ovary, parovarium, tube and uterine cornu, is missing.

I cannot find how uncommon this combination is; the absence of each one of the structures concerned is noted in nearly all works, and unilateral absence of the genital organs is commented upon; the only case at all parallel that I have found is in the Transactions of the Pathological Society, 1883-4, where Mr. Carrington recorded a case somewhat similar, in which the same abnormality of the genital organs was accompanied by a misplaced left kidney.



# BILHARZIOSIS.

BY

R. P. CAMPBELL, M.D.

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It is not my intention, nor is this the place to go into the question of bilharziosis in North America, and more particularly, in Canada; it may, however, be well in passing to remind you that in the MONTREAL MEDICAL JOURNAL, of September, 1906, Doctors Ross and Delaney, of the Jeffrey Hale Hospital, Quebec, reported two cases of bilharzia of the bladder, who were both newly returned South African soldiers. Doctor Ross remarks that more cases would likely follow, and the case which I have to bring before you to-night is just such an one. These were the first cases reported in Canada; the present is the second.

The patient, *æt.* 25 (service of Dr. Lafleur), October 19th, 1907, served in the late South African war, spending from January, 1900, till September, 1902, somewhat over two years, in South Africa. In June, 1901, he developed a urethral discharge which lasted three months and disappeared. In December, 1902, a second discharge lasted six months, at the end of which period (July, 1903) he noticed a drop of blood at the end of micturition. This has continued fairly constantly up to the present, sometimes instead of blood a small coagulum would be seen, rarely he would see nothing. The only additional signs of disease were frequency of micturition and occasional blood streaks in his stools. He has not lost weight.

Examination showed a fairly nourished young adult. Physical examination was negative. A cystoscopic examination showed a small blood clot lying in the base of the bladder and on the fundus 2 inches posterior to the trigone a slightly raised, irregular brown patch,  $\frac{3}{4}$  in. in diameter with occasional dark red spots (hæmorrhagic) and studded over by numerous pin points and pin head pustules like miliary tubercles, but more yellow. These extended over the patch and on to the surrounding wall for a distance of  $\frac{1}{2}$  to 1 inch. A similar but smaller patch was present in the right wall. No blood vessels are visible through these patches and actual ulceration is confined to the small, dark spots over the patches. Two small filamentous areas with similar pustules were also present, and here and there other pustules with or without slight discolouration of the mucous membrane. Between the affected areas the mucous membrane appears perfectly normal.

The urine, by catheter (after washing the urethra), is acid, turbid, shows a trace of albumen after filtering, and contains pus cells, red blood cells, and the ova of the *Schistosoma hæmatobium* first described

by Bilharz, in 1852; as the cause of Egyptian hæmaturia. An eosinophilia of 10 per cent. was found.

On subsequent examinations the eggs could always be demonstrated, always with the terminal spine. Up to the present no ova have been demonstrated in the stools.

## MEDIASTINAL SARCOMA WITH EXTENSIVE INVOLVEMENT OF THE HEART.

BY

C. F. MARTIN, M.D.

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This specimen is presented not because of its infrequency, for, indeed, sarcoma of the heart is now recognized as, probably, the most common of all tumours in this organ. Formerly, cancers were thought to be the most common malignant growth in the heart, but this opinion was based upon a faulty terminology. There are, however, special points of interest, both to the pathologist and physiologist, which make this specimen of more than considerable interest. Those who have seen the specimen will have noted the extensive growth evidently arising from the loose connective tissue about the roots of the lungs, the thickening of the pericardium, and the fact that the sarcomatous growth not only totally surrounded the heart, but invaded its muscles, its valves, its septa, and formed numerous nodules within the heart cavities themselves.

The patient was a clerk, aged twenty-three, whom I first saw in July, on account of supposed pulmonary tuberculosis, for which he had been sent to the mountains some weeks previously. The onset of his trouble had been manifested by sudden faintings, some dyspnoea, cough and expectoration. These symptoms, which led to the diagnosis of tuberculosis, had been rendered more suggestive by some dulness which had been found in the second right intercostal space one inch to the right of the sternum. The sputum, however, had failed to demonstrate the presence of tubercle bacilli. When I first saw him in July, the main features were his excellent nutrition, the slight dyspnoea and an irritative cough. His chest showed some cyanosis with dilated superficial veins. There was no bulging or pulsation of the chest at this time, but percussion showed a marked increase of precordial area to the left and right,—the dulness to the right being continuous with the heart dulness and extending more than one inch to the right of the sternal border in the second and third interspaces. The apex beat was in the fifth space, three-quarters of an inch outside the nipple line. Careful

examination at this time showed no sign of cardiac or pulmonary disease and the larynx did not seem to be abnormally fixed. A fluoroscopic examination confirmed the physical examination and though the mass was pulsating, other signs excluded the probability of an aneurysm. The diagnosis was that of mediastinal pericarditis or, possibly, a neoplasm of the mediastinum.

The patient returned to his home for several months, and, while under medical supervision, preserved comparatively good health. On his return in October, however, he presented marked signs of progressive development of the condition with signs of intra-thoracic pressure. There was œdema of the face, right hand and also of the lower thorax, the left arm, the scrotum and the feet. There was slight pleural effusion on the right side and the liver could be felt two inches below the costal margin. By this time, too, a much wider area of thoracic dullness was manifested and the shadow seen by fluoroscopic examination was much more extensive. The neoplasm, for evidently this was the obvious condition, had extended upwards to the right and to the left, as well as downwards, as the accompanying skiagraph will indicate. The movement of the diaphragm could not, at the time, be discerned, probably owing to the presence of the fluid in the chest. There was probable thrombosis of the subclavian vein in the right side. In spite of the extent of the growth there was no involvement of the sympathetic recurrent laryngeal nerve or trachea, the œsophagus, too, was free, as is often the case, being better protected by its position.

Dr. Birkett's examination of the larynx revealed some thickening of the cords but no paralysis. The course of the disease was progressively downwards, but it is noteworthy that up to the time of his death the pulse remained persistently regular in volume and rhythm. His death was sudden, while moving from his bed to a chair. The autopsy revealed a mediastinal sarcoma arising not from the glands, but from the loose connective tissue and involved the heart, pericardium, pleura, lungs, diaphragm and extended by contiguity to the liver and there was evidence of visceral metastasis by blood stream. Note the extensive invasion of the valves, of the auricular and ventricular septa, of the muscles of both ventricles, as well as the external surface.

Much interest centres about that region containing the bundle of His. These bundles, which are presumed to regulate the rhythm of the heart, would seem to have almost entirely been replaced by new growth and certainly to have been interrupted in their course. One would, therefore, have anticipated at all events, disturbance in rhythm and some irregularity. The work of Fahr, Gibson and others, demon-

strating microscopic lesions of these bundles, may be compared with interest to the extensive lesions which here exist in the absence of either heart block or any mild disturbance of rhythm.

The interesting features are briefly these:—

1st. The similarity of the signs with tuberculosis, and the aid of the fluoroscope in determining the diagnosis.

2nd. The pulsation of the mediastinal tumor, as seen by the X-Rays, in conditions other than aneurysm.

3rd. The regularity of the pulse throughout the disease in spite of the heart being completely surrounded by tumour, in spite of involvement of the coronary arteries, and in spite of the apparent obliteration of the bundles of His.

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“BLUE BABY,” 17 YEARS OLD.

BY

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Montreal.

The patient is a male, aged 17, employed as clerk. He complains of shortness of breath and weakness. The family and personal history is good. Patient is 5 feet 5 inches, weighs 115 pounds; subcutaneous fat is small in amount and muscles poorly developed. There is general cyanosis, especially of extremities and mucous membranes; the skin is cold; temperature 99, pulse 72, respirations 21. Fingers and toes are clubbed, lips thickened, also nose and ears. Slight kyphosis, prominent first rib, slight emphysema. Digestion good, teeth poor, buccal and pharyngeal mucous membranes greatly congested; tongue flat, broad and covered with fissures. Intraocular congestion of vessels of fundus of eye. Present illness dates from birth.

*Cardio-vascular system*:—Dyspnoea constant, increased on exertion and accompanied by dizziness, weakness, palpitation, faintness, and occasionally “giving” of the knees. There is slight prominence of precordial area with diffuse pulsation as also over epigastric area, systolic in time. Apex beat visible in 4th and 5th spaces in nipple line. There is, in addition, a systolic thrill in the 3rd left interspace a short distance from the sternum, also a systolic shock at the right lateral sternal line. Pulse regular, tension low, almost dicrotic.

Percussion shows absolute dulness along 4th left cartilage to nipple and from here down a vertical line to apex, *i.e.*, distinct increase of absolute dulness. Relative dulness  $\frac{1}{2}$  inch to left of this and upwards to 2nd space. Right border of cardiac dulness normal, perhaps there is increase which is hidden by emphysema.

On auscultation is a systolic murmur somewhat harsh in character, maximum intensity at apex, well heard towards end of sternum and propagated to axilla. A systolic murmur is heard, harsh, loud, swishing with a maximum intensity in 3rd left space transmitted down left border of sternum. The first sound is obscured at apex and replaced at pulmonary orifice by the respective systolic murmurs. 2nd sound is diminished at pulmonary and increased at apex. 1st and 2nd aortic sounds rather diminished. Systolic murmurs at aortic and tricuspid areas, faint and probably transmitted there.

*Diagnosis (Differential)*:—Not patent foramen ovale because of marked cyanosis, absence of diastolic and pre-systolic murmurs and of venous pulsation, in spite of the acquired mitral regurgitation (probably present). Not defect of the interventricular septum because murmurs not transmitted to interscapular region and there is a marked thrill present. Not stenosis of the aorta because condition very uncommon compared to pulmonary stenosis and most forms of former lesion are incompatible with long extrauterine life. Symptoms of this condition in later life when accompanied with acquired mitral regurgitation, are (1) Marked hypertrophy of the left heart, (2) cyanosis usually absent, (3) loud systolic murmur and thrill over manubrium sterni, conducted into vessels of neck, (4) visible collateral circulation of arteries over chest and abdomen, (5) sometimes retardation of femoral pulse and marked weakness of pulse over lower half of body.

The condition which would best account for the symptoms present is Patent Ductus Arteriosus, the symptoms of which are: a loud systolic bruit in the 2nd or 3rd left intercostal space a short distance from the sternum, which is accompanied by a palpable thrill and an accentuated second sound. Occasionally there is a diastolic murmur. The left ventricle is usually hypertrophied. The faintness of the 2nd pulmonic sound may be accounted for, perhaps, by some stenosis in the pulmonary artery which is a frequent accompaniment of patent ductus. Finally, it does not seem illogical that the patient may have an acquired mitral regurgitation as indicated by the hypertrophied left ventricle, the systolic murmur, best heard at the apex and transmitted to the axilla, and by the fact that the 2nd pulmonic sound is at all present in spite of the pulmonary stenosis assumed.

*Prognosis*:—"The prognosis in uncomplicated cases of patent ductus arteriosus is more favourable than in most forms of congenital heart disease. About half of the published cases have survived puberty, and many have had long and active lives without any signs of disease." In this case, however, the lesion is apparently not uncomplicated and the

facts that the heart is distinctly enlarged, and has enlarged during the past two years, that the cyanosis is often intense, the clubbing marked and becoming more so, and finally that disturbance of compensation more readily follows exertion than in the past, lend a somewhat sinister aspect to the prognosis.

*Treatment*:—The treatment here, as in similar cases, may be summed up in “rest and warmth.” Failure of compensation would be treated as in the acquired cases.

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## TUBERCULOMA OF THE TONGUE.

BY

E. M. VON EBERTS, M.D.

The specimen presented is one of tuberculoma of the tongue. It was an intra-lingual tumour beginning in this case as a deep-seated induration in the anterior third of the organ, and, until incised, retaining a covering of normal epithelium.

The term “Tuberculoma” was first employed by Poncet to distinguish this form of tuberculous glossitis from the commoner clinical type where superficial ulceration is usually the first condition noted.

Tuberculous disease of the tongue was first recognized and described by Sir James Paget, in 1858, and the rarity of the affection is attested by the infrequency with which such cases are noted in the statistics of even the large metropolitan clinics. And among these cases few conform to the type of that presented.

Tuberculosis of the tongue is practically always secondary to tuberculous disease elsewhere in the organism—usually pulmonary—and with rare exceptions first manifests itself as a superficial ulcerative process involving the tip or margin of the organ. Males are the more frequently attacked—in the proportion of four to one.

The clinical history of the case presented is briefly as follows:—

The patient, a female, æt. twenty-five, applied to the surgical side of the Out-Patient Department of the Montreal General Hospital on October 13th, 1907, complaining of a sore tongue and swelling of the glands of the neck. Examination showed the presence of a small indurated mass immediately to the right of the median line of the tongue one inch from the tip and without involvement of the epithelium; also numerous enlarged lymph nodes in both sub-maxillary spaces; those on the right side being tender. An examination of the chest revealed an extensive left sided chronic phthisis. The sputum contained a few tubercle bacilli. The nodule on the tongue gradually increased in size, and on November the 4th excision was attempted by longitudinal incision. Three days later the stitches were removed, and healing was apparently complete, al-

though there remained a deep-seated induration towards the median line. On November 28th the superficial epithelium became involved with subsequent formation of a crater-like ulcer; at the same time pain—previously an unimportant feature—became most pronounced, and the patient showed a rapid failure of nutrition. One week later the anterior third of the right half of the tongue was excised.

There has been no recurrence of the disease.

The prognosis of tuberculous ulcer of the tongue is, according to Mr. Butlin, almost as unhappy as that of carcinoma. "Not only is the disease fatal, but it is usually fatal within a few months, or from one to two years."

The diagnosis in this case was confirmed by the microscopical findings, and tubercle bacilli were isolated in pure culture upon a modified Dorset medium from an excised lymph node. The preparations from the lesion as well as a recent transplant from the original growth are shown herewith.

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## HYPOPION IRITIS, ASSOCIATED WITH EPIDEMIC CEREBRO-SPINAL MENINGITIS.

BY

FREDERICK TOOKE, B.A., M.D.,

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In a recent contribution on the ocular manifestations of cerebro-spinal meningitis Ballantyne <sup>(1)</sup> has shown that the occurrence of these manifestations are much more frequently the rule than the exception. Although the writer claims that in only four cases for a total of seventy-three examined were ocular disturbances absent, yet he states quite emphatically that in no instance was the iris or uveal tract involved. Oeller <sup>(2)</sup>, on the other hand, says that cyclitis does occur in cases of perineuritis which have originated from meningitis.

The condition is at least a rare one, and the present case should be of interest, not so much from a clinical standpoint as on account of the special bacteriological and pathological observations which have been made and which render the report more valuable.

C. W., an infant of two years, of foreign parentage, was admitted to the medical service of the Royal Victoria Hospital on April 4th, 1907, its mother stating that it had appeared feverish and chilly. It had recently arrived from Europe and for three days prior to its coming to Montreal it had resided in New York. The voyage across the Atlan-

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(1) British Medical Journal, 1907, II, page 190.

(2) Archiv. f. Augenkrankh., Vol. VIII, page 357.

tic had been uneventful, the child appearing in its usual good health and taking its food with apparent relish. The mother stated that shortly after her arrival in Canada the child was feverish and at times chilly and fretful. The personal and family history of the patient threw no light upon the diagnosis.

On examination a purpuric rash was seen to be distributed over the body, the child was restless and fretful, and the respirations were rapid. The child was fairly well developed, although there were definite manifestation of rickets present, as beading of the ribs, enlargement of the wrist and ankle joints, and bowing of the legs. Some indefinite impairment of the resonance was noted at the apex of the left lung anteriorly, and the glands were enlarged in the inguinal, maxillary and cervical regions. The heart sounds were rapid but fairly clear, the pulse was very small, running 140 to 160 per minute. A leucocyte count showed 41,600 per cm. The tongue was coated and dry, T. 101.4. The purpuric patches previously referred to were somewhat irregular in shape and distribution, some being half an inch in diameter, others existing as mere spots. They were more numerous on the legs than on the arms, and on the arms than on the body. There seemed to be a definite tenderness present, the child strenuously objecting to being handled. It showed evidence of being able to speak and to hear and sensation appeared normal.

Two days later the child was quieter, but the respirations were somewhat more rapid, the purpura more extensive, and a diffuse erythema had covered the body for about two hours. The blood on examination showed a preponderance of polymorphonuclear cells.

On April 7th the pulse was more rapid and weaker; T. 103; there was little change in the condition of the lungs, but a distinct swelling of the right parotid gland was noted to-day for the first time; the purpura was more marked. A blood culture previously taken was negative.

On April 9th there was noted a marked condition of suppurative as at last note, both parotid glands were swollen, the pulse was very weak, and blowing breathing could be heard at the apex of the left lung posteriorly. The purpura was most extensive; a lymphocyte count showed 11,600. A lumbar puncture was made and one ounce of turbid fluid was withdrawn. Microscopically this showed numerous pus cells but no micro-organisms could be detected. An infiltration of some of the superficial epithelial cells of the left cornea was first noted to-day, the fibres of the iris were somewhat swollen but an indistinct view of the eye grounds could be obtained. There was no per-



ceptible change in the condition of the optic disc in this eye, and that belonging to the right eye was quite normal.

On April 9th there was noted a marked condition of suppurative iridocyclitis. The iris was discoloured a greenish yellow, did not react to light and the pupillary area and the anterior surface of the eye were covered by a plastic exudate of lymph. The lower angle of the anterior chamber was filled with bright yellow pus. The fundus of the right eye was normal. Cultural growths of the cerebro-spinal fluid made by Dr. Oskar Klotz gave positive results for the meningococcus of Weichselbaum. The neck became more rigid, there was no apparent paralysis of the extrinsic muscles of the eye, and exitus occurred that evening.

A post mortem examination was made the following day when the eye was removed. The pathological diagnosis supported in the main the clinical observations which had previously been made; an acute purulent pericarditis occurring with the meningitis as well as the iridocyclitis was particularly interesting. Sections of the eye were made in celloidin varying from 20 to 25 mm. in thickness. The stains employed have been hamatoxylin and eosin.

The macroscopic findings were those of a normal globe, except that the anterior chamber appeared to be occupied by a large quantity of exudate. The suspensory ligament of the lens also appeared to be the focus of considerable inflammatory reaction standing out in much bolder relief than is usually the case. The several coats of the eye were in close apposition to one another and the vitreous cavity appeared clear. (Fig. 1.)

The microscopical findings are as follows:—

The superficial corneal epithelium is intact at both limbi and consists of the normal number of layers of cells; but as one proceeds inwards these layers become perceptibly fewer in number, in some places consisting only of one or two layers instead of several; in fact, at one or two points complete exfoliation of the epithelial layer has occurred. The cells, however, are all quite clear with deep nuclear staining and the underlying hyaline membrane of Bowman is not shrunken or ruptured.

The underlying corneal tissue proper can hardly be said to show what one would understand as a definite infiltration, although one can make out several leucocytes scattered about through the tissue; these are mainly of the small mononuclear and polymorphonuclear variety. There is no contortion of the corneal cells. Descemet's membrane is intact, the nuclei staining unusually distinctly. Schlemm's canal is not

occluded at either angle, nor is there any change in the lumen or about the walls of the vessels at the corneo-scleral margin. The sclerotic shows little or no pathological change beyond a few isolated lymphocytes which are scattered throughout its fibres.

The retina shows a slight infiltration of its several layers of lymphocytes and some polymorphonuclears; but these cells are much more abundant in the layer of rods and cones and in the ganglion cell layer. Some of the retinal vessels have been cut transversely and their lumen is occupied with red blood corpuscles, a very decided infiltration of the vessel walls being noticeable in more than one instance. There is, however, no evidence of distinct engorgement. The cells about the walls of the blood vessels are mainly of the lymphocyte class. At the ora serrata this infiltration of the retina becomes much more pronounced, and in the pars ciliaris retinae extending from the ora serrata to the ciliary body, the infiltration is so intense that the several layers of the retina can be detected with the greatest difficulty. At this point an enormous quantity of leucocytes has been thrown into the vitreous cavity which, with some organized connective tissue elements follows the course of the retina up to the ciliary body.

The choroid is practically normal; the pigment as well as that belonging to the retina is intact, the vessel walls are normal and some of them are filled with a few isolated red blood corpuscles. They are by no means engorged. There is not the slightest indication at any point of perivasculitis, as I have already pointed out to have been the case, about the retinal vessels. The optic nerve can hardly be said to be swollen, bearing out Gower's (3) reference to Schirmer's examination of twenty-seven cases where no apparent swelling could be detected clinically. There does, however, appear to be a slight infiltration about the walls of the central vessels of the optic nerve. Some sections show an organized clot consisting of newly formed connective tissue elements, some leucocytes and red blood corpuscles. I have considered this as a post mortem change, as there is no indication of a generalized marked engorgement of the retinal veins which would have resulted had a clot occurred in the central artery of the nerve during life.

The dural coat of the optic nerve sheath is normal, but the arachnoid consists practically of an infiltrated mass of lymphocytes and is firmly bound down to the pial sheath and the nerve trunk. The space existing between the dural and arachnoid sheaths is practically clear, the exudate appearing to settle in the arachnoid coat itself as its seat of predilection.

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(3) Medical Ophthalmoscopy, 1904, page 169.

The ciliary body is tremendously infiltrated with blood corpuscles, mainly of the small mononuclear and polymorphonuclear variety; these with the pigment which is scattered throughout this structure practically prohibits a clear view of the ciliary muscle. The ciliary body, like the pars ciliaris retinae, has thrown an enormous quantity of these lymphocytes into the vitreous cavity which, following the course of the suspensory ligament include the posterior capsule of the lens behind and the iris in front.

The lens is practically normal; some of its anterior fibres have been torn in cutting the sections.

The iris is practically a repetition of the condition noted in the ciliary body, but the degree noted here is even more intense. It is tremendously infiltrated throughout its whole structure, its fibres are swollen and contorted, and the spaces between these are occupied by a marked engorgement of leucocytes, and a number of erythrocytes. Inflammatory changes can be noted in the posterior pigmentary layer, several pigment cells having become detached from adhesion to the anterior lens capsule as posterior synechiae. The anterior pigmentary layer can be seen to be broken at numbers of points where quantities of lymphocytes are pouring into the anterior chamber (Fig. 2). The condition of the vessel walls here is distinctly interesting, some of these capillaries are contorted and show a distinct swelling of their endothelial cells, numbers of which can be seen lying free in the lumen of the vessels. Again, one can make out occasionally a lymphocyte or polymorph in the blood stream, some adherent to the vessel walls and others evidently migrating through the wall of the capillary (Fig. 3). The capillaries of the iris are not engorged, although some of them contain a few blood corpuscles. Some pigment cells can also be seen scattered about the neighbourhood of the vessel walls and the connective tissue about these shows a decided degree of inflammation. In the anterior chamber the inferior filtration angle is completely occluded by a purulent exudate which consists practically of a mass of polymorphs, lymphocytes and large mononuclear leucocytes, the polymorphs being by far the most numerous. A second mass of purulent clot follows this in a wedge shape, apex down, extending upwards as a ribbon-like band and covering the pupillary area. Organized connective tissue formation bounds the anterior part of this band, a second band of exudate extending over the whole of the anterior surface of the iris on one side to which it is firmly adherent and over one-third of the iris on the opposite side (see Fig. 2). A quantity of this exudate has been deposited on the posterior surface of Descemet's membrane, a comparatively small

portion of this part of the cornea being discernible that has not a number of these lymphocytes in apposition to it.

Staining for Gram-negative micro-organisms in the tissues is naturally unsatisfactory, more particularly when formalin has been employed in preparing the sections, and positive results were hardly anticipated. I have stained some sections with carbol thionin and have found organisms in the exudate about Descemet's membrane and in the iris tissue, both intra and extra cellular, which might be taken for Weichselbaum's diplococcus. Their size was about what one might expect, but their shape and capsule were somewhat vague. They were scanty, although several could be distinguished with the aid of an oil immersion magnification. However, in the space between the arachnoid and the dural sheath of the optic nerve trunk, micro-organisms of a much more definite character were detected. These were of the usual diploid form, such as one finds in Weichselbaum's biscuit-shaped coccus, and were surrounded by a clear space very much the same as that found between the organism proper and its containing capsule.

In reviewing the literature on this subject one is struck with the paucity of cases which have been subjected to pathological study. Treacher Collins (<sup>4</sup>), and more recently, Sydney Stevenson (<sup>5</sup>), have reported cases, but as Axenfeld (<sup>6</sup>) very justly remarks, their investigations and subsequent conclusions can hardly be said to be complete, not having been able to exclude other forms of infection. Axenfeld had the same criticism to offer regarding the cases of Saltini and Silcock (<sup>7</sup>).

A similar verdict may possibly be awaiting the present report; in its defence I may state that I consider the condition a metastatic form of inflammation, contending that the changes in the vessel walls of the iris and the migratory tendency of the leucocytes within the vessels support this theory. The fact that bodies were found in the tissues somewhat resembling the meningo-coccus and most closely resembling it in the arachnoid sheath of the optic nerve is a very strong point in my favour. That Dr. Klotz was able to isolate the meningo-coccus from the cerebro-spinal fluid during life added to the other features which I have presented above, should be sufficient evidence in substantiating my contention that my case has been one of acute purulent iridocyclitis of metastatic origin due to the diplococcus intracellularis meningitidis.

(4) Royal London Ophthalmic Reports, Vol. XIII, Part 3.

(5) Transactions of Ophthal. Society of the United Kingdom, Vol. XX, p. 121.

(6) *Bakteriologie in der Augenheilkunde*, 1907, S. 335.

(7) Transactions of Ophthal. Society of the United Kingdom, Vol. XX, p. 112.

In conclusion, I wish to express my thanks to Dr. Hamilton for his kind permission to examine the patient clinically, to Dr. Oskar Klotz for his report on the bacteriological findings of the cerebro-spinal fluid, and to Dr. Adami for allowing me to remove the eye for pathological study.

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## VINCENT'S ANGINA.

BY

A. H. GORDON, M.D.

The following case is interesting as a condition not frequently noted in Canada and comparatively rare in English medical literature.

On October 27th, 1907, Mr. E., 20 years of age, a medical student, consulted me for slight soreness in his throat. He stated that two weeks previously his throat had been sore for a few days, but the soreness had passed away and he was quite well until October 24th, when it again troubled him somewhat. The throat was only slightly painful. Swallowing was but a little uncomfortable; constitutional symptoms were practically absent. The temperature was 99, the pulse 80.

On examination of the throat, there was little injection, but upon the right tonsil there was seen an ulcerated patch 1 in. vertically and  $\frac{1}{2}$  in. horizontally, occupying almost the whole tonsillar surface. The edges of the patch were raised and irregular, the base of a dirty greyish colour having the appearance of a slough with here and there a small island of granulation tissue appearing. There was distinct loss of substance, the whole picture being one of ulceration rather than membrane formation.

A similar patch but only half the size, was seen upon the left tonsil. At no place did the process spread beyond the limits of the tonsils.

Rubbing the base of the patch with a swab readily brought blood, but left the exudate still adherent. The odour from the swab was distinctly foetid.

The submaxillary glands though palpable were but slightly tender. There was no history of syphilis nor was there any trace of the disease elsewhere in the body.

A culture made for the diphtheria bacillus and examined by Dr. Lyman was found negative. As the condition remained stationary, another culture was taken on November 31st, which was also negative, but direct examination of smears showed two distinct types of organism:

1. A spirillum or spirochæta, extremely slender and showing 2 to 4 waves, in length very much greater than breadth.

2. A bacillus, club-shaped, swollen at centre and with pointed ends staining well with Loeffler's blue and white Wright's stain; appearing singly, showing some of the polar staining characteristic of the Klebs-Loeffler bacillus.

Under application of peroxide of hydrogen and cleansing gargles the condition finally cleared up in about 10 days, leaving behind, however, marks of a loss of substance in the tonsil.

Both clinically and bacteriologically, this angina corresponds accurately with those cases described by Vincent in the *Annales de l'Institut Pasteur* in 1896, and at intervals since then noted by other observers. Fisher in the *American Journal of Medical Sciences* gives a description of the organisms as follows. The spirochæta and fusiform bacillus appear in combination. The bacillus is swollen at the centre and shows pointed ends, is 6 to 12 in. long, may appear as a diplo-bacillus, is sometimes curved and bent, and usually but not invariably decolourized by Gram's method. The spirillum is 21-40 in. long, invariably decolourized by Gram. Both organisms show mobility and in both cultures so far are negative. Mayer in the same *Journal* for 1902, emphasizes the subacute character of the condition, its comparatively painless character and its resemblance to chancreoid. Blackwood in *American Medicine* for March 1907, cites nine cases occurring upon lips, tongue, gums, cheeks tonsils and pharynx, and in all of his cases there was no glandular enlargement.

I am indebted to Dr. Birkett for a suggestion as to the nature of the condition and to Dr. Lyman for examining cultures for me.

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## TWO INTERESTING CASES.

BY

E. J. WILLIAMS, M.D.,  
Sherbrooke.

I. Perforation of gall bladder from erosion by calculus.

II. The appendix in the inguinal canal and scrotum.

During the past few months I have had the opportunity of witnessing two rather interesting cases. On June 20th I was called in consultation with Dr. B. N. Wales, of Bury. The patient, a man forty-six years of age, had been confined to bed for six days. The previous history had pointed strongly to gall stones and he had been treated for such up to the time I saw the patient.

There had been present sharp paroxysmal pains over the gall bladder radiating toward the stomach and upwards toward the right shoulder.

The patient was slightly jaundiced. On examination there was present well marked distension of the abdomen with dullness in the right flank, extending well forward toward the umbilicus and downward to the right inguinal region.

On turning the patient on his left side this dull area was not changed in any way. Rectal examination revealed a fluctuating mass in the pelvis. The patient was vomiting every one to two hours, pulse 120, mouth temperature 98.4-5, rectal temperature 101, facial aspect slightly anxious, more or less tenderness over the whole right side of the abdomen, very little over the left, very marked in the right iliac region, and the right rectus was very rigid. From the symptoms present at the time of my examination I diagnosed acute appendicitis with perforation, with extension of pus upwards to the liver and downward into the pelvis.

The patient was removed to the hospital, and I opened the abdomen, making an incision three inches long, two inches of which was above the line running from the umbilicus to the anterior superior spine. On opening the peritoneum a large quantity of the bile stained fluid poured out. Turning the patient on the side the remainder of this fluid was evacuated, the whole amounting to about one quart. The gall bladder was first examined carefully, and there was found a stone measuring 1 cm. by  $1\frac{1}{2}$  cm., firmly imbedded in the first portion of the cystic duct; the gall bladder seemed intact. Extending the incision downward toward the appendix, this organ was examined and found to be intensely congested. Having removed the appendix, I opened the gall bladder and removed the stone. On exploring the inner surface of the gall bladder with a large probe for perforation, I found an opening in the most dependent part of the wall about the size of a pea. There was marked erosion of the mucous membrane about the opening. The gall bladder was removed and a gauze drainage was placed down to the stump of the cystic duct and a rubber tube drainage carried down into the pelvis. The abdomen was closed between these two points. The patient made an uneventful recovery.

*Case II.*—On July 21st, I was called in consultation with Dr. Alex. McDonald, of Bury. The patient, a young man of eighteen years of age, had complained for several years of pain in the right inguinal region, also slight pain and swelling in the left inguinal region.

The protrusion was the size of an English walnut. On the day previous to my visit, while lifting a heavy log of wood, he said he felt something give way in the right side and immediately a lump appeared. This was followed by vomiting and very severe pain. The case was

diagnosed as one of Strangulated Hernia, and immediate operation advised, as it was impossible to reduce the mass by taxis.

On examining the patient I found a mass over the left inguinal canal measuring 6 cm. by 4 cm. This mass was firm and pressure over the same caused excruciating pain. In the left inguinal region, a small hernia (reducible) was present. On opening the inguinal canal on the right side, the mass was found to be a portion of the omentum; it was drawn well out of the abdomen, ligated, and excised. I then proceeded to do a radical operation for hernia and found considerable difficulty in isolating the cord from the surrounding structures. After an extensive dissection, I separated from the cord a long appendix which extended down into the scrotum to the epididymis. On extending the incision well up into the abdomen I found the cæcum bound down to the abdominal wall about the internal ring. As this attachment was very firm I made no attempt to break up the cohesions, but simply excised the appendix, inverted the stump and closed with a purse string suture. I completed the operation by doing a Ferguson operation for radical cure. The condition suggested to my mind the possibility of the appendix being dragged down into the scrotum with the testicle at the time of its descent from the abdominal cavity. Dr. McDonald continued with the case doing Bassini's operation on the left side. The patient made an uneventful recovery.

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## COMPLETE OCCLUSION OF BOTH ANTERIOR NARES.

BY

R. H. CRAIG, M.D.

The patient was a female, aged two years and eight months, brought to me by her mother in November, 1906, who stated that her child had been unable to breathe through her nose for the past two years.

When the baby was three months old the mother first noticed that she breathed with difficulty through her nose. A local physician was consulted and attempted unsuccessfully to pass a small catheter through the baby's nostrils. According to the mother's statement, the baby could breathe freely through her nose when born.

There was no evidence of rickets or inherited syphilis. The organs, so far as could be ascertained, were normal. Examination showed a small child anæmic and of marked nervous temperament, mouth open and facial expression presented all the characteristics of a mouth breather. The nasal bones were almost on a level with the face and presented a pronounced saddle backed appearance even for a child so



young. Both anterior nares were covered by epidermis, the same color as the surrounding skin, which had apparently grown from the mucocutaneous junction of the nares. The post-nasal space and pharynx were free.

I advised operation, the mother readily consented. Patient was anaesthetized, an incision was made through the centre of each plate of skin and both inferior turbinals were found in contact with the septum, but not adherent. I enlarged the space between the septum and inferior turbinals with nasal forceps and introduced two small silk rubber drainage tubes. The after treatment was nothing worthy of note and consisted in changing the tubes at stated intervals for cleansing purposes. The tubes were permanently discarded six months after the operation.

The result has been gratifying, the child breathes freely through both nostrils and since the establishment of nasal respiration its appearance and general health have greatly improved.

A considerable number of cases of occlusion of the posterior nares have been recorded, but from a cursory review of the literature I have failed to note a case similar to mine. Although the mother stated the child could breathe freely through its nose when born, I am inclined to doubt her statement and regard the condition as congenital. One must not forget, however, the possibility of the stenoses being caused by traumatism, possibly caused by the physician who attempted unsuccessfully to pass a catheter into both anterior nares.

A brief reference to the embryology of the formation of the nose may prove interesting at this point. Heisler states the external nose first acquires definite form about the eighth week by the union of the distal ends of the lateral nasal processes with the naso-frontal process; the former preceding the alæ and the latter the bridge and tip of the nose. In the third month the organ is unduly flat and broad but from this time on it gradually assumes its characteristic form. From the third month to the fifth each external naris is closed by a gelatinous plug of epithelial cells. Therefore, I am disposed to conclude, that in this case the patency of the external nares was not established even at birth.

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#### ROYAL VICTORIA HOSPITAL.

Monthly report for February: Patients admitted, 297; patients discharged, 273; patients died, 20. Medical, 84; surgical, 125; ophthalmological, 17; gynæcological, 37; laryngological, 34. Out-door Department—Medical, 732; surgical, 682; eye and ear, 257; diseases of women, 116; nose and throat, 408; total, 2,196. Number of ambulance calls, 93.

# SOME MODIFICATIONS OF THE TREATMENT OF CYSTITIS IN WOMEN, WITH REPORT OF 45 CASES STUDIED CYSTOSCOPICALLY.

BY

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The modern treatment of cystitis is the product of recent years and its development has depended upon the improvement in the structure of the cystoscope and the increase in skill and knowledge of its use. Before the interior of the bladder could be inspected and the pathological lesion observed, treatment of such conditions had to be, of necessity, empirical and indefinite. But, with modern methods of diagnosis, direct inspection of the site of inflammation and visual knowledge of the effects of treatment, it is possible to control and to cure affections of the bladder in a direct and efficient manner.

The ease with which the bladder may be inspected and the small amount of harm and discomfort of the cystoscopic examination in skilled hands are potent factors in the diagnosis, treatment and cure of cystitis in women. It is thus possible to make an exact diagnosis of the bladder lesion, and appropriate treatment may be directed towards it.

If, however, no cystoscopic examination is made in cases of cystitis, it is impossible to localize the site of inflammation, acquire any knowledge of its size and location, or eliminate grave and dangerous affections of the kidney and adjacent organs. Many bladder and kidney lesions may produce mild symptoms, yet be of such a momentous character as to make their early diagnosis a necessity for the welfare of the patient.

It is possible with the cystoscope to detect the presence of inflammation by the appearance of the bladder; ulcers and tumours of the bladder wall are readily seen and treated. The source of blood in the urine, that most important symptom in genito-urinary conditions, may be definitely located and appropriately treated. An intelligent prognosis cannot be reached without a definite diagnosis of the bladder and kidney condition, and this cannot be done without visual inspection of the bladder wall and the ureteral orifices; it is often necessary in addition to catheterize the ureters and obtain urine from each kidney for examination. None of the newer methods of urine examination, as cryoscopy, estimation of functional capacity of the kidney by methy-

lene blue, etc., can take the place of ureteral catheterization in the study of surgical lesions in the kidney, as none of them are exact and accurate. The instruments for segregation of the urine by means of the formation of an artificial partition in the bladder, as by Luys' (1) segregator, or by means of pressure upon the ureters through the abdominal wall as by Heusner's (2) separator, are also not to be depended upon for accurate division of the urine from the kidneys, and have the additional fault that the resultant urine may suffer contamination from the bladder wall.

The cause and progress of the bladder disease and the effect of treatment upon the condition may be minutely followed by the cystoscope. Treatment may be changed to suit conditions that may arise and harmful procedures may be eliminated.

The ease and painlessness of cystoscopic examination eliminates the main argument against its use. In none of the following 45 cases of bladder disease was the urethra or bladder cocainized. This includes several hundred examinations, as it was the custom to note the bladder condition cystoscopically at each treatment. Several cases, on account of the painful character of the lesion and the marked alteration in the bladder wall, required opium suppositories to control the pains following bladder distention with the irrigating fluid. For inspection of the bladder with the examining cystoscope no dilatation of the urethra is necessary, save occasionally in virgins with very small meatus. The instrument used for catheterization of the ureters occasionally requires slight dilatation of the urethra.

Cystoscopic examination should cause little or no pain and no ill effects to the patient or to the patient's condition. No injury or ill effects from the examination alone were noted in any of these cases.

The instruments may be sterilized in formalin vapour or by scrubbing with tincture of green soap and placing in carbolic acid solutions. The ureteral catheters may be sterilized in formalin vapour or, as is the writer's custom, boiled in a saturated solution of common salt in water. Another useful solution for boiling catheters is saturated solution of ammonium sulphate in water; but this, while slightly prolonging the life of the catheters, causes crystals of the salt to be deposited on them during cooling. The common salt solution is convenient and efficient; one catheter of the writer's having been boiled in this way eighteen times, before the silk and gum tissue became markedly injured.

The cystoscopic instruments used were a simple, indirect examining cystoscope of the Nitze type, the Tilden Brown catheterizing cysto-

scope and the Kelly cystoscope as modified by Cullen. Other instruments were used experimentally, but the above were those constantly in use.

For diagnostic and catheterizing purposes water dilatation of the bladder was the rule. The patient was in the lithotomy position upon a gynæcological examining table. If it was necessary to examine the bladder with the Kelly instrument for applications and other purposes, the hips were elevated, or the patient put into the knee-chest position, in order to get air inflation of the bladder.

The cases noted in this paper were all examined in a public clinic (Vanderbilt Clinic), and the fact that they returned for treatment is evidence of the lack of discomfort that the examination caused. The writer is indebted to Drs. Healy, Proben, Roff, Stone and Meeker for referring these cases. The following abstracts of the histories of 45 cases note the more important conditions found at cystoscopic examinations. The discussion of the cases follows their citation. Frequency of urination was the most common symptom which caused a cystoscopic examination to be made. This frequency in the histories is estimated in amount by the number of times a woman has to arise at night to urinate.

*Abstracts of the Histories of 45 Cases.*

Clinic No. 44,529.—Frequency—pain—urgency. No return urgency. Right cystic ovary. Cystoscopic examination. Sclerotic stricture of the urethra. Chronic hypertrophic trigonitis.

Clinic No. 46,270.—Frequency 3 to 4 times at night. Cystoscopic examination. Atrophic cystitis. Hyperæmia of trigone. Diverticula of bladder.

Clinic No. 46,067.—Frequency 3-4. Cystoscopic examination. Calculous urethra. Loss of sphincter control. Acute hyperæmic cystitis.

Clinic No. 43,832.—Frequency 1-2, pain, urgency. Symptoms date from operation of abdominal suspension for retroversion two years ago. Pain on left side. Cystoscopic examination. Bladder divided into two sacs by partition which occupies the mid-line and corresponds to suspension ligament. Chronic hypertrophic trigonitis. Atrophic cystitis.

Clinic No. 44,995.—Frequency 3-5, pain, urgency. Uterus retroverted. Cystoscopic examination. Acute hyperæmic trigonitis. Benefited by replacement of the uterus without further treatment and cured by bladder treatment.

Clinic No. 45,498.—Frequency, bearing down pain, burning, urgency, for 2 years. Left nyosalpinx. Endocervicitis and cervical enlargement. Cystoscopic examination. Acute purulent cystitis with marked hyperæmia and œdema of mucous membrane.

Clinic No. 45,500.—Frequency, burning and painful urination for 3 years, since birth of child. Frequency worse for last two months. Cystoscopic examination. Chronic hypertrophic trigonitis with marked epithelial proliferation and definite reddening and localized inflammation of right ureteral orifice. Catheterization of kidney showed no tubercle in kidney urine.

Clinic No. 45,465.—Pain in back. Frequency for 4 years. No burning or urgency for last 3 years. Cystoscopic examination. Chronic atrophic trigonitis.

Clinic No. 45,499.—Pain in hypogastrium. Frequency 1-3, slight urgency. Left cystic ovary. Lactation atrophy of uterus. Endocervicitis and enlargement of cervix. Cystoscopic examination. Chronic atrophic cystitis. Chronic congestive trigonitis.

**Clinic No. 45,379.**—Slight burning. Frequency 1-3. Marked frequency in day. Return urgency. Endocervicitis and cervical enlargement. Cystoscopic examination. Chronic congestive cystitis. Chronic hyperæmic trigonitis. Ureteral orifices normal.

**Clinic No. 45,310.**—Frequency, pain and urgency for six months. Has had frequency occasionally during last 3 years. Fibroma of cervix. Cystoscopic examination. Chronic atrophic cystitis, which is most marked where the cervical tumor bulges into the bladder. Acute hyperæmic trigonitis. Both ureteral orifices inflamed and reddened. Catheterization of ureters showed kidney urine normal.

**Clinic No. 43,919.**—Frequency 2-4, urgency, moderate pain for 6 months. Bilateral salpingitis. Endocervicitis. Cystoscopic examination. Marked congestive hypertrophic cystitis. Large hypertrophied cervix uteri bulges into the bladder and keeps right ureteral orifice open.

**Clinic No. 41,600.**—Frequency and pain for one year. Blood in urine. Enlarged cervix with endocervicitis. Cystoscopic examination. Chronic exfoliative cystitis in patches. Right ureteral orifice irritated and inflamed. Small ulcer undermined and serpiginous immediately above the orifice. Ureters catheterized, but no tubercle found in kidney urine.

**Clinic No. 44,797.**—Frequency, urgency and pain for three years. Large uterus slightly prolapsed. Large cervix. Cystoscopic examination. Chronic hyperæmic cystitis. Chronic exfoliative trigonitis.

**Clinic No. 43,645.**—Marked frequency, pain and urgency for 20 years. Frequency often 10-20 times at night. Cystoscopic examination. Chronic hypertrophic cystitis. Marked chronic trigonitis.

**Clinic No. 44,818.**—Frequency and burning only when walking about. None at night. Cystoscopic examination. Marked urethritis. No inflammation in bladder save a little near outlet.

**Clinic No. 44,862.**—Slight frequency and pain on urination. Cystoscopic examination. Moderate atrophic cystitis. Upon left side are two ureteral orifices lying side by side, each of which extends to kidney. As methylene blue is injected, one ureteral catheter, flows out of the other.

**Clinic No. 44,393.**—Marked frequency, pain, urgency and return urgency for 2 months. Bloody urine. Cystoscopic examination. Acute hyperæmic cystitis with bleeding granulations and a great deal of exfoliation. Ureteral orifices not inflamed more than the rest of the bladder. Ureters catheterized and kidney urine negative for tubercle.

**Clinic No. 44,186.**—Frequency 1-2 and slight urgency for 4 months. Right floating kidney. Perineorrhaphy 4 years ago. Moderate cystocele. Cystoscopic examination. Marked chronic trigonitis. Slight chronic cystitis. Right ureteral orifice reddened. Ureters catheterized and kidney urine negative for tubercle.

**Clinic 43,700.** — Age, 19. Frequency 5-6. Urgency, pain and return urgency for 6 months. Pain in right side for 3 weeks. Lost 10 lbs. in 3 weeks. Headache. No abdominal pain. Much pus in urine. Tubercle bacilli and long grooved angular leucocytes found in urine; their protoplasmic outline irregular and swollen. Vacuoles and detached nuclei in leucocytes. Many red corpuscles. Cystoscopic examination. Acute hyperæmic exudative cystitis with several small ragged undermined ulcers. Right ureteral orifice markedly inflamed and left orifice slightly inflamed. Ureters catheterized. Tubercle pus and red cells found in right kidney urine, but left kidney urine clear. Nephrectomy by Dr. Blake showed right kidney with marked tuberculous disease. Bladder cleared up under treatment after operation. Patient gained 40 lbs. in 6 weeks following operation and was perfectly well in 2 months.

**Clinic No. 45,672.**—Age, 23; 3 miscarriages. Frequency 2-3, urgency and pain for one year. Blood and pus in urine. Cystoscopic examination. Marked hyperæmic cystitis with exfoliation and small ulcers with undermined edges around the right ureteral orifice. Right ureteral orifice markedly inflamed. Left ureteral orifice irregular with some swelling and redness of the edges and slight congestion of the surrounding mucous membrane. There were a few reddish excrescences. Ureters were catheterized. Tubercle bacilli and pus found in the right kidney urine, and left kidney urine was clear. Nephrectomy refused. Bladder improved under treatment.

**Clinic No. 46,343.**—Age, 16. Left tuberculous hip-joint disease with marked deformity. Frequency and pain on urination for 3 months. Cystoscopic examination. Moderate hyperæmic cystitis with small clear tubercles like fine gray points surrounded by a reddish zone of congestion and inflammation. The whole mucosa is infected and swollen. Ureteral orifices are ap-

parently normal. Pus and tubercle bacilli in urine. Ureters were catheterized and kidney urine from both sides was found to be without pus or tubercle; so it was concluded that the disease was primary in the genito-urinary tract and was due to miliary extension from focus in the hip. The bladder condition improved somewhat under treatment.

Clinic No. 43,857.—Age, 23. Hydatiform mole 3 months ago. Acute gonococcus vulvitis and endocervicitis. Frequency, pain and urgency for 3 months. Cystoscopic examination. Urethral hemorrhage, acute urethritis, acute hyperæmic cystitis with bleeding granulations.

Clinic No. 44,146.—Pain, frequency and burning for 3 months. Pelvis negative. Cystoscopic examination. Chronic exfoliative cystitis. Blood and pus in urine. Ulcer of the trigone with blood vessel whose walls may be seen pulsating, running across the raw surface. Right ureteral orifice normal, left slightly reddened. Ureters catheterized. Kidney urine negative for tubercle bacilli.

Clinic No. 46,939.—Pain, frequency and urgency for 2 months. Cystoscopic examination. Acute hyperæmic cystitis with marked œdema and much swelling of the mucosa.

Clinic No. 44,736.—Moderate frequency for 8 months. Cystoscopic examination. Chronic atrophic cystitis.

Clinic No. 45,688.—Frequency and pain for 6 months. Pain on left side and back. Retroversion and endocervicitis. Cystoscopic hypertrophic trigonitis with moderate œdema and exfoliation.

Clinic No. 46,636.—Age, 56, menopause at 37 years. Frequency 3-4, urgency and return urgency. Cystoscopic examination. Atrophic cystitis with hypertrophied bands of muscle and connective tissue and small diverticula.

Clinic No. 32,326.—Frequency, urgency and return urgency. Perineorrhaphy and suspensio uteri 3 years ago. Cystoscopic examination. Chronic atrophic cystitis. Moderate hyperæmic trigonitis. Bladder is distorted and ureteral orifices are displaced by fixed uterus.

Clinic No. 44,900.—Pain on urination and blood in urine for 6 months. History of syphilis. Pregnant 4 months. Cystoscopic examination. Marked hypertrophic cystitis with bleeding granulations. Large syphilitic (?) ulcer of fundus of bladder, marked varicosity of veins of bladder. False membrane of ulcer. Ureteral orifices negative. Ureters catheterized, and kidney urine negative for tubercle. Bladder wall firm and cannot be distended. Improved under anti-syphilitic and bladder treatment.

Clinic No. 44,370.—Frequency, burning and pain for 10 years. Bearing down pain. Cystoscopic examination. Chronic exfoliative cystitis with moderate papillary excrescences and small inflammatory cysts. Ureteral orifices patulous.

Clinic No. 43,735.—Frequency and pain on urination for 6 years. Operation for cystocele 6 years ago. Has had electrical treatment, static and faradic, 3 years ago. Cystoscopic examination. Chronic hypertrophic trigonitis in the neighborhood of the scar of the cystocele operation, which can be seen as a ridge in the trigone. Right ureteral orifice inflamed and displaced as a result of the operation. Ureters catheterized, and kidney urine negative.

Clinic No. 45,010.—Marked incontinence of retention and frequency for 9 years since complete hysterectomy 9 years ago. Cystoscopic examination. Bladder markedly dilated with 3 large saculations. Chronic hypertrophic cystitis with very great hypertrophy of muscular and connective tissue bands causing innumerable diverticula. 5-2 c.m. deep. Much exfoliation of the mucosa and marked hyperæmia. Ureteral orifices displaced, but otherwise negative. The bands of muscle resemble in appearance the columnæ cornæ of the heart valves.

Clinic No. 46,661.—Frequency, pain and urgency for 2 years. Worse in last 3 months. Pregnancy 3 months. Cystoscopic examination. Severe granular hypertrophic cystitis over the whole bladder with marked papillary granulations which bleed easily. Marked exfoliation of mucosa. Ureteral orifices negative. Ureters catheterized, kidney urine negative for tubercle.

Clinic No. 43,815.—Burning and frequency for 18 months. Worse since pregnancy began 4 months ago. Cystoscopic examination. Marked hyperæmic cystitis. Mucosa soft and granular. Marked congestive trigonitis.

Clinic No. 42,549.—Burning and frequency for 2 years. Worse since pregnancy in last 4 months. Chronic endocervicitis. Cystoscopic examination. Marked congestive trigonitis. Ureteral orifices patulous. Cervix bulges into the bladder.

Clinic No. 45,669.—Burning, pain and slight urgency for 3 months. Pregnant 3 months. Cystoscopic examination. Moderate hyperæmic trigonitis with congestion of vessels.

**Clinic No. 43,821.** — Burning and frequency for 3 months. Pregnant 3 months. History of pelvic peritonitis and cystitis 2 years ago. Cystoscopic examination. Chronic hyperæmic cystitis with marked granular trigonitis.

**Clinic No. 43,460** — Frequency for 2 months. Pregnant 4 months. Cystoscopic examination. Moderate hyperæmic trigonitis. Ureteral orifice patulous.

**Clinic No. 44,151.**—Frequency, pain and bearing down pain for 2 weeks. Pregnant 3 months. Cystoscopic examination. Marked congestive trigonitis, ureteral orifice normal.

**Clinic No. 44,442.**—Frequency, pain and urgency for a week. Pregnant two months and a half. Cystoscopic examination. Slight hyperæmic cystitis with papular trigonitis.

**Clinic No. 42,622**—Frequency, urgency and pain for 3 weeks. Pregnant 4 months. Cystoscopic examination. Moderate congestive trigonitis. Ureteral orifices dilated.

**Clinic No. 45,951.**—Frequency and pain for 1 month. Pregnant 5 months. Cystoscopic examination. Marked hyperæmic trigonitis with papillary granulations and softening of the mucosa. Much exfoliation and desquamation.

**Clinic No. 45,010.**—Frequency and urgency for 4 months. Pregnant 8½ months. Pain right side and much pus in urine. Cystoscopic examination. Marked purulent cystitis with papillary granulations, exfoliation and desquamation. Marked hyperæmia and œdema of the mucosa. Ureteral orifices patulous. Ureters catheterized, and kidney urine contains no pus. Improved and went to full term under bladder treatment.

**Clinic No. 44,688.**—Frequency and urgency during last 3 months. Blood in urine. Pregnant 9 months. Pain in abdomen under liver. Temperature 102, pulse 110. Cystoscopic examination. Marked purulent cystitis with hemorrhagic papules and granulation-like spots. Marked varicose enlargement of the veins of the bladder, hemorrhage from veins. Intense congestion, hyperæmia and œdema. Much desquamation and exfoliation. Ureteral orifices patulous, but otherwise negative. Ureters catheterized, and kidney urine contained no pus. Bladder improved under treatment and cleared up after delivery.

A short discussion into the pathology of cystitis will be required to explain these findings.

The most common condition of chronic inflammation of the trigone, or trigonitis, is usually one which results from a simple hyperæmia and congestion of the vessels; actual infection may precede or follow the congestion. The line of separation between chronic congestion and chronic inflammation of the trigone is often hard to determine. There is usually marked hyperæmia with marked dilatation of the blood vessels. The intimate relation between the vesical arteries and those of the neighbouring pelvic organs makes this very easy. The membrane loses its lustre, the mucosa becomes reddened and there is evidence of flaky desquamation and exfoliation of epithelial cells, leucocytes and pus. In a later stage, the mucosa of the trigone becomes velvety in appearance, and, in some cases, there are proliferative processes, which may lead to papillary or papilloma-like excrescences. These cases of trigonitis show epithelial proliferation, marked rounded-celled infiltration, involving particularly the submucosa. In addition to these changes Heymann (3) has drawn attention to a change in the epithelial elements from the normal bladder mucosa to flattened epithelium above the surface. These processes may take alveolar arrangement below the level of the surface.

In chronic cystitis the changes are more general; the mucous membrane has lost its normal pinky white appearance, and appears more or less generally reddened. This reddening and inflammation may appear generally or only in certain patches, and cases have been noted in this series, in which the inflammation extended in streaks along the line of the blood vessels of the bladder wall. The mucosa is dull red in appearance and may here and there show small ulcerations. There is frequently desquamation of the epithelium, and interstitial hæmorrhages, showing on the surface, are not uncommon. When there is considerable ulceration and necrosis, membranous or gangrenous cystitis may result.

The muscle of the bladder is sometimes involved in the changes of cystitis and may hypertrophy and enlarge to project into the bladder cavity as thick bundles or network, forming cavities into which the mucosa may penetrate. In one case, No. 45010, this was associated with marked distension, lack of tone of the bladder wall and incontinence of retention. The muscular bands were as thick as a lead pencil and formed a network. The connective tissue in the muscle bundles increases and there follows a hypertrophic sclerosis of the muscle of the wall.

Chronic atrophic cystitis is not an uncommon condition in women after the menopause, and is often associated with more or less sclerosis of the external genitals, as in Case 44529, where there was difficulty in urination on account of a sclerosis or atrophic vulvitis, and the white firm tissue around the external meatus constricted the opening to almost pin-point size; but was easily cured by one dilatation of the orifice with steel dilators.

The mucosa in atrophic cystitis is dull and thickened. The blood vessels are not seen in the fundus and there is often atrophic retraction of the ureteral orifices. This process is usually accompanied by more or less irritating hypertrophic trigonitis. This condition is the most common cause of frequency of urination in women past the menopause.

Inflammation of the bladder is usually effected by congestion of adjacent organs. Thus an endocervicitis with enlargement of the cervix is not an infrequent accompaniment of a congestive hypertrophic trigonitis. The intimate relations of the cervix and the trigone and their blood vessels explain this association. The enlarged cervix also often presses upon the trigone which from the existing inflammation has lost its normal elasticity, and this will often cause alteration in the structure of the ureteral orifices, which, from being small elevated papillæ,



became stretched, flattened and elongated. The base of the orifice may often be seen through the patent opening. This condition is also often present during pregnancy where the enlarged cervix bulges into the bladder.

These conditions injure the valve-like power of the ureteral orifice and cause it to allow regurgitation of urine into the pelvis of the kidney. This may be a cause of pyonephrosis and pyelitis of pregnancy. This regurgitation was well demonstrated experimentally by Sampson, who obtained it after injuring the ureteral orifices in animals.

Pregnancy, also from the congestion it brings, may be the cause of the recrudescence of old trigonitis, as was noted in Cases 46661, 43815, 42549, 45669, 43821, 43460, 44151, 44442, 42622 and 45051. In these cases there was in the early months of pregnancy some frequency of micturition. The increased congestion of the trigone showed very marked in the engorged arteries, which could be traced upwards from the bladder orifice.

The writer also wishes to draw attention to a peculiarly acute cystitis in the latter months of pregnancy, which was present in two cases, Nos. 45010 and 44688. In these cases, both about full term of pregnancy, there was a very acute cystitis with large amounts of pus in the urine. Cystoscopic examination showed a very old inflamed bladder wall with marked œdema and hyperæmia. The condition was general and uniform. There was marked desquamation and exfoliation of epithelium and pus. The exfoliated cells and shreds clung to the bladder wall like small tags. The picture was that of an extremely acute cystitis with very marked œdema and congestion. The mucosa was markedly softened, swollen and boggy. The amount of pus excreted was great.

Both these cases were examined on account of a suspected involvement of the kidney by pyelitis or pyonephrosis of pregnancy. In one there was pain on the right side, which seems to lend colour to that diagnosis. However, catheterization of the ureters brought clear urine from the kidneys, eliminating all possibility of suppurating kidney conditions. These two cases gave such a clinical picture of pyelitis that it was only by cystoscopic examination and ureteral catheterization that such condition could be eliminated. The writer does not believe that a diagnosis of pyelitis or pyonephrosis of pregnancy, in the absence of marked renal tumours, can be definitely and accurately made without cystoscopic examination and ureteral catheterization. The place of origin of the pus in the urine must be definitely located. A purulent cystitis frequently accompanies infection of the kidney in pregnancy, and, without

cystoscopic examination or the palpation of a marked renal tumour, it cannot be said whether the pus arises from the kidney, the bladder, or both; the microscopical examination of the urine for renal or bladder cells offers no decided proof of either condition. An increase in temperature cannot be taken as a definite guide in the differential diagnosis of these conditions, as in acute hyperæmic cystitis of pregnancy fever may be present, as in Case No. 44688.

In the earlier months, pregnancy has a distinctly evil effect upon old or latent trigonitis. The added congestion of the blood vessels and effect of the growing cervix bulging into the bladder causes an exacerbation of the condition. The diseased, inelastic trigone is stretched and irritated, and the ureteral openings are altered and distorted.

In one of the cases of pregnancy with cystitis, No. 44688, there was marked hæmorrhage from the bladder. This was due to markedly varicose veins in the bladder. The oozing could be directly traced to the enlarged vein, although it was also caused by the hæmorrhagic granulations. Similar cases have been reported by Kubinyl (5), who believes it to be due to the increase in blood pressure and the insufficiency of the valves of the veins. Proust (6) also reports two such cases in pregnancy, and they state that cystotomy, packing and even direct ligation of the vein may be required. However, in this case, astringent treatment, while it did not entirely stop the bleeding, permitted the woman to go to term.

In three cases, Nos. 43700, 45672 and 46343, there was tuberculous cystitis. In two cases it was associated with tuberculous disease of the kidney. One case was operated upon, the kidney removed and the cystitis cured; the other refused operation and the bladder was treated locally with small improvement.

The third case was one of tuberculous cystitis, primary in the genito-urinary tract, but secondary to an old tuberculous hip-joint lesion. It is very rare in tuberculous genito-urinary disease to find the bladder alone involved, as Saxtorph (7) in 10,016 autopsies found 205 cases of chronic genito-urinary tuberculosis, and amongst these 205 cases, there were 52 of secondary implication of the bladder and only one case in which the bladder was alone involved. However, in Case No. 46343 no other focus of tuberculosis could be found in the genito-urinary system, and the extensive disease of the hip-joint did not seem to have been communicated to any other organ save the bladder. The uterus and tubes were free, the kidneys did not show any abnormality in urine and the lungs were not apparently involved.

The stage of invasion of the bladder in this case was the very earliest. The little gray white tubercles could be seen, surrounded by a reddish zone of inflammation, and in only two places did there seem to be any breaking down and ulceration. In these places the tubercles had apparently coalesced and formed a small conglomerate mass, which broke down to form an ulcer. The condition improved very slowly under treatment, and the patient is at the present time under observation. The condition of tuberculosis of the bladder is, however, most resistant to treatment, and a cure, except in cases, where an involved kidney or other focus is removed, is rare.

Amongst the 45 cases were four, in which the bladder inflammation was the result or followed by a previous gynæcological operation. Two cases followed suspension of the uterus by the abdominal route. In one case there was marked sacculation of the bladder with patches of inflammation and congestion; in the other there was considerable distortion of the trigone, alteration in the site of the ureteral orifices and sacculation of the bladder. In case No. 45010 there has been a complete hysterectomy for purulent tubal disease. The bladder was very markedly dilated and would retain 1500 c.c. The walls were much congested, and the fibres of bladder muscle were separated into a network of firm, stout bands, the largest as great as a lead pencil and the smallest as the lead itself. The mucous membrane dipped into the crevices and the ureteral orifices were much distorted. The bladder was very irregularly dilated and had lost its tone: incontinence of retention was present. This case improved somewhat under dilatation of the urethra and other treatment. Case No. 43735 had had a cystocle operation, and the scar of the operation wound could be seen within the bladder, although it did not seem to have penetrated the bladder mucous membrane. The left ureteral orifice was displaced and the region of the scar inflamed and congested.

Bladder inflammation following upon gynæcological operations is not infrequent and is usually blamed upon a post-operative cystitis; however, it frequently happens that the cause may be more directly laid to the operation itself as in these four cases.

Blood in the urine is said to be an indication of tuberculous genitourinary disease; but in this series it appeared several times when tubercle bacilli could not be demonstrated in the urine. It was due in some cases to a small bleeding ulcer and, in one case of acute systitis of pregnancy, to bleeding granulations and varicose veins of the bladder. It is, however, a symptom which is a direct and urgent indication for accurate study of the case and visual diagnosis of the lesion by means of the cystoscope.

One case, No. 44900, showed a large single ulceration of the fundus with marked necrosis and false membrane formation. The bladder was uniformly inflamed and markedly contracted. The case was watched and treated throughout pregnancy without benefit; but after delivery slight improvement took place under anti-syphilitic treatment. Operation of cystotomy was refused. Curettage of the ulcer was not done on account of the friability of the bladder wall.

The treatment in general of these cases of cystitis consisted of irrigation with a bland cleansing fluid. This solution usually consisted of sodium bicarbonate, one dram to the pint of water. This is a better solvent of mucus, pus and albuminous substances generally, than is the boric acid solution so commonly used. This is well known by otologists, who recognized the value of alkaline solutions in suppurative ear diseases. If there was a great deal of mucus, the solution was made of double strength, and, if there was a great deal of pus, one dram of sodium carbonate was added to the cleansing solution. These mixtures are bland and cleansing, and offer some advantage over the common boric acid solution.

Various antiseptic solutions were tried in the hope of finding one which would give the maximum effect with the minimum amount of disturbance. Rovsing's carbolic acid solution, five per cent., was tried in the cases of tuberculosis of the bladder and in other chronic cases. It caused a great amount of pain, in one case hemoglobinuria, and did no good. It was tried in all in 12 cases, and only one case was benefited. A number were made worse symptomatically and their condition was not improved. The treatment is one of great severity and often causes intense irritation.

Sublimate solutions were not tried, as the known inefficiency of this antiseptic in the presence of albuminous matter was considered a contraindication for its use. It has been used by Guyon, but has not been praised by other surgeons.

Gomonol was used in various strengths, but no definite benefit could be proved from its use. It was also used in conjunction with olive oil, and here seemed to have some soothing properties, but no different effect could be noted when the gomonol was omitted and the sterilized olive oil was used alone.

In the search for an antiseptic astringent of comparatively unirritating properties quinine was tried. This substance has distinct antiseptic properties and is said to be placed midway between bichloride of mercury and carbolic acid in its antiseptic properties. It is comparatively unirritating, easily made, and may be retained in the bladder

without danger. The salt used was the bisulphate, which is easily soluble in water and was made up one dram to the pint. This solution had a distinctly good effect and was the most efficient of the antiseptic solutions used. The few cases reported here cannot be made the basis for the introduction of a new treatment; but the marked improvement in treatment of chronic cases by this solution was encouraging.

Various silver salts were tried and the nitrate was found to be so irritating that its use was discontinued. In the choice of the colloid silver preparations the experience of chemists and ophthalmologists was considered. It has been found by Derby (10) that of these various preparations, argyrol and collargol are inert as bactericides, and that all the colloid silver salts are inefficient in the presence of albuminous matter. The preparations may be divided into three classes: the non-irritating of low bactericidal power, as argyrol and collargol; the more effective and slightly irritating bactericides, as protargol, and the very irritating preparations like nitrate of silver.

It has also been shown by Marshall and Neave (11) that the percentage of silver in the compound is no criticism of its antiseptic value. For these reasons and after some trial of several salts, it was concluded that it was better to have a preparation as protargol with some bactericidal power at the expense of its slightly irritating properties, than one like argyrol which has little or no bactericidal properties and is non-irritating.

Protargol, 5 per cent., was by no means used as a routine treatment. It was used in chronic trigonitis for local applications to the inflamed part and as an injection in marked chronic cystitis.

In acute purulent cystitis with exfoliation and pus formation, it was used with hydrogen peroxide as a cleaning and antiseptic combination. It has been shown by Futh in the treatment of necrotic endometritis and of suppurating wounds, that, if a colloid silver compound is used along with hydrogen peroxide, the action of each is made much more effective. For this reason the two were combined in the treatment of purulent cystitis. Hydrogen peroxide, one third strength, and protargol 5 per cent., were injected alternately through a catheter into the bladder by means of a half ounce syringe. The mixture was allowed to set for a few minutes, then it was washed out by the cleansing solution, injected by the same syringe. No difficulty or trouble was ever noted from distension of the bladder by the peroxide. The peroxide foam poured out of the catheter and was finally washed out by the quinine solution or the cleansing solution. This treatment is

not one which would be advised for cystitis in the male, but it has given excellent results in purulent cystitis in the female.

The exfoliation, desquamation and pus cells are in this way washed away as they cannot be by any irrigation; the bladder mucous membrane is left clean and is prepared for treatment by antiseptic or astringent solutions or for direct applications.

For direct applications to ulcers and localized inflamed spots, nitrate of silver fused on a metal probe, or protargol solution on a swab, were used. The patient was put in the knee-chest position, and applications were made through the Kelly-Cullen cystoscope. The place for the application was first located by means of the examining cystoscope under water dilatation.

It was also found that in cases of acute cystitis, or cases where there had been extensive treatment, that a soothing application was of benefit. Olive oil was used with some success, but finally a preparation of Irish moss was found to be the most useful. The value of this preparation consists in keeping the bladder walls apart and lubricating them, so that no friction or irritation results. The preparation is approximately the same as many lubricating jellies put up in tubes for use in vaginal examination. This soothing lubricating preparation of Irish moss is also of use in lubricating the cystoscope before its introduction into the urethra. It is prepared as follows:—

Chondus (Irish Moss), 45 g.

Distilled water, 1,500 c.c.

Wash the Irish moss in cold water, drain off water wash again and drain. To the washed Irish moss add 1,500 c.c. of distilled water and boil for 10-15 minutes, stirring frequently. Strain through muslin with expression. To the strained Irish moss add 4,500 c.c. of boiling distilled water and filter. The process of filtration may be hastened by loosely filling the filter with absorbent cotton. Evaporate the filtrate to one-fifth by bulk, cool partially and add Gomonol, 1 per cent. by weight, mix well and strain through fine white flannel which has been previously boiled. Bottle in ground glass stoppered containers of about half a pint each.

This Irish moss jelly makes a useful lubricant for examinations and may be put up in metal paint tubes for that purpose. In bladder treatment the jelly should be diluted with hot water to a thick semi-solid consistency, fit for use in a syringe.

Thus the treatment of these cases of cystitis consisted mainly in the use of four compounds: the antiseptic quinine solution, the cleansing bicarbonate solution, the peroxide and silver combination, and the jelly

of Irish moss. In addition to this, appropriate treatment was directed to ulcers by direct application of silver or curettage, as was required; chronic patches of inflammation were stimulated, and lesions in the neighboring organs were treated.

If the case is one of very acute irritation, the Irish moss jelly is first inspected and a diagnosis made, the bicarbonate solution being used as the dilating fluid. The pus and shreds were then washed away by the peroxide and silver combination. The bladder was then washed and dilated by the quinine solution and more exact examination made for small ulcers, patches of inflammation and the condition of the ureteral orifices. If it were necessary to catheterize the ureters, it was usually done under the quinine solution and after the bladder had been cleansed. It was believed that in this way danger of carrying infection upwards from the bladder was eliminated, the cleansed bladder wall and antiseptic quinine solution removing this small danger. The quinine solution gives a peculiar bluish appearance through the cystoscope, but examinations can be well made with it.

If the case is one of very acute irritation, the Irish Moss jelly is injected on removal of the quinine solution. The amount of jelly injected should vary from one to four ounces. If, however, the bladder inflammation is more chronic, the patient is told to retain the quinine solution as long as possible in order to get full benefit from its antiseptic and astringent action.

In chronic cases with much congestion and irritation the peroxide and silver combination was seldom used. The aim of the treatment in all cases was first to cleanse the infected area, to direct appropriate treatment toward the special lesion and to exercise an antiseptic astringent and stimulating action upon the mucous membranes by means of the quinine solution.

It was also useful to use various drags by the mouth. Infusion of Buchu and Fluid Extract of Triticum are unirritating. Tincture of belladonna and potassium or sodium bicarbonate should be used in combination to relieve spasm and make the urine alkaline. It is required in cases of cystitis that the urine be made alkaline during the irritating stage of the disease. Acid urine is always irritating. The patient should also be directed to drink large quantities of water and a specified amount of six glasses should be named in order that the directions be carried out.

The use of Urotropin (hexamethylene tetramine) has not been satisfactory in the writer's experience. It is inert, save when the urine is acid and it makes the urine rather irritating. It is very irritating to

the kidney and, when first given, acts as a diuretic; but on continued use may do harm. The writer wishes to sound a note of warning in regard to the prolonged use of this drug. Its value in purulent kidney conditions is undoubted: but it is of very little use in cystitis and the continued use may cause kidney irritation and hemorrhagic urine, as has been noted in four cases in the writer's somewhat limited experience. Guaiacol is a useful and efficient substitute, but it is also seldom required in cystitis. Beardsley (13) has recently collected a large number of cases in which the toxic effects of this drug was noted.

The therapeutic value of rest is very great in these cases, and a bland diet with avoidance of acid elements should be ordered. It is also important to remember that the occasion of a cystitis sometimes depends upon a coincident lesion and the bladder inflammation may not react to treatment until that is cured.

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#### SIXTEENTH INTERNATIONAL MEDICAL CONGRESS.

The sixteenth International Medical Congress will be held at Budapest, from August 29th to September 4th, 1909. The executive committee of the Canadian Medical Association has reappointed Dr. W. H. B. Aikens, of Toronto, to act as secretary of the Canadian National Committee of the Congress at Budapest. Dr. McPhedran, who was chairman of the Canadian committee for the International Medical Congress held at Lisbon, 1906, will assist in securing the formation of a strong and representative committee. Any member of the profession in Canada desiring information, may communicate with either Dr. Aikens or Dr. McPhedran.



T H E

# Montreal Medical Journal.

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## RECIPROCITY IN MEDICINE.

The progress of Reciprocity, as regards medical qualifications, between the provinces of Canada and Great Britain is necessarily slow on account of the many obstacles in the path of its accomplishment.

The passing of the Medical Acts Amendment Act in 1906 by the British Privy Council, whereby each province of Canada is constituted a separate state for the purposes of negotiation, was a distinct step in the direction of furthering the advance of reciprocity. It may be unknown to some that this step removed one of the chief obstacles above referred to.

The difficulty experienced in Canada previous to the passing of the 1906 Act was to instigate concerted action amongst the different provinces of Canada, and for some reason or other, not quite clear to the majority of the medical profession, this idea of conjoint action between the various provinces as regards Reciprocity *only*, was skilfully mixed up with a question of an entirely different nature, viz.:—The one portal system for Canada, or in other words, the setting up of a common standard of medical examinations for all provinces, whereby interprovincial reciprocity could be attained.

This latter movement, although excellent in itself, was, as has been said, coupled with that of Reciprocity with Great Britain, and, in fact,

in many instances placed in the very forefront. Unfortunately for its success, this interprovincial reciprocity introduced an element which savoured of Dominion control of the medical profession, and herein lay the great stumbling block to the whole scheme.

The situation may be described in a very few words: By the terms of Confederation, it is expressly laid down that each province shall have complete control of all educational matters. The provinces have guarded this right most jealously, and as medical instruction, etc. naturally falls within the domain of "educational matters," any movement, however beneficial it may be in other respects, which, in the slightest degree menaces this exclusive right of the different provinces over their own educational affairs, would most certainly meet with stubborn resistance from all the provincial authorities.

It was because some of the provinces scented danger in the "one portal system," by its partaking of a Dominion nature, and thereby removing medical education from the control of the provincial authorities, and placing it under the direction of the Dominion Government, that an insurmountable difficulty was experienced in the passing of this legislation, for as some of the provinces inimical to the idea naturally agreed,—take away the control of the medical profession, and a precedent is established at once whereby other professions, e.g., the law and the church might easily follow suit, and so the provincial control over educational matters would be destroyed forever.

The point at issue was undoubtedly a very grave one, and the proper understanding of it is necessary in order to comprehend the attitude of those opposed to the interprovincial scheme. It is also a justification for introducing such a lengthy discourse upon a subject which at first sight appears rather irrelevant to this article, but which nevertheless is the *raison d'être* of the Medical Acts Amendment Act of 1906. It will thus be evident that, under this act, each province can enter into Reciprocity with Great Britain, and still retain, untouched in any way, its own absolute control over medical education within that province. Besides this the act dissociated once for all the Reciprocity idea from that of the "one portal system," which latter is purely an interprovincial affair, and one which can be settled at any future date totally irrespective of the former.

As soon as the air was cleared in this respect, two provinces, which previously had been so jealous of their rights, immediately entered into negotiations with Great Britain for Reciprocity.

A thorough appreciation of these facts by some other provincial authorities might perhaps lead to a more speedy adjustment of outstanding difficulties.

Soon after the passing of the 1906 Act, Nova Scotia entered into negotiations, and after a few months settled all the terms of Reciprocity, so that by the middle of 1907 several medical men from that province had availed themselves of the new agreement. Up to the present about eleven have entered their names on the British register, but as far as can be ascertained no case of registration of British qualifications in Nova Scotia has as yet occurred.

During the latter half of 1907 the British Government placed the appointments in the Army Medical service at the disposal of the Government of Nova Scotia, thus affording to the medical practitioners of Nova Scotia an easy opportunity of entering the services.

There is good reason to believe that similar appointments to the services will be allotted in the future to each province entering into reciprocity—these provincial appointments will in no wise interfere with the privilege of any medical practitioner to compete in the regular examinations for the services.

Manitoba and Quebec were the next to enter into negotiations with the British Privy Council. In the case of each province a difficulty was encountered in coming to a definite arrangement whereby the interests of the medical profession in these places were properly safeguarded. The general principle of reciprocity, however, was acknowledged as a good thing. In the instance of Quebec two points required settlement before a final agreement could be effected. The first was to prevent medical undergraduates, who had failed to satisfy the requirements of the College of Physicians and Surgeons, from going over to Great Britain, there obtaining some kind of registrable qualification, and then returning immediately to Quebec, claiming full rights to enter their names on the Quebec register.

The second point had reference to the preliminary education. The authorities of Quebec claimed a superiority for their own standard of preliminary education over that obtaining in many colleges in Great Britain, and at first suggested granting reciprocal registration to those holders of British qualifications who had had a preliminary training entitling them to a B.A. degree. According to the report of the last meeting of the College of Physicians and Surgeons of Quebec, both of these minor objections have fortunately been disposed of under conditions equitable to both contracting parties. Unless something of an unforeseen and serious character happens in the meantime, it is to be hoped that the year 1908 will see reciprocity between Quebec and Great Britain finally established.

As regards Manitoba, negotiations have been going on for a long time, but as yet no satisfactory ground of agreement has been reached.

The Manitoba authorities approve of the scheme generally. It will be remembered that Manitoba instituted, rather more than a year ago, the six year course for medical studies, and this fact has given rise to some doubts in the minds of the members of the College of Physicians and Surgeons as to whether it would be just to their own medical men to allow practitioners from Great Britain with a five years' course to enter into competition in Manitoba.

Ontario and British Columbia are both in the "resting stage." Neither province gives any definite reasons for not promoting the Reciprocity scheme, simply saying that the conditions amongst the medical community are not ripe for such a movement.

In each of these provinces there is a Central Examining Board—part of the machinery of the College of Physicians and Surgeons—which exercises absolute control, by means of examination, over all medical men applying for a licence to practice. It is feared in some quarters that any relaxation of the powers of this Central body would result in the admission of undesirable physicians from Great Britain. Whether this be the case or no is a matter for careful investigation, and as reciprocity, by its very nature, implies some sort of a working agreement wherein a process of "give and take," founded on equitable principles, must necessarily figure very largely, surely before condemning any scheme, such as medical reciprocity, it seems very essential for the contracting parties to find out on what terms they could come to an agreement. However this may be, the fact remains, no response whatever has been forthcoming from either Ontario or British Columbia to the invitation of the British Privy Council on behalf of the General Medical Council with reference to the possibility of establishing reciprocity between Great Britain and these two provinces.

It may also be pointed out that an agreement between Great Britain and any of the provinces of Canada, does not necessarily carry with it any obligation for interprovincial reciprocity between those provinces which have thought fit to enter into a treaty with Great Britain. It has been put forward in some cases that, where two or more provinces of Canada enjoy reciprocity with Great Britain, a medical man from one particular province might register in Great Britain, and then by virtue of his British registration claim a like privilege in another province of Canada. This is not so, unless the provinces entering into the contract with Great Britain expressly desire it, and have definite clauses in their agreements providing for this interprovincial reciprocity.

Finally, it ought clearly to be understood that any agreement entered into by the provinces of Canada and Great Britain can be cancelled at

any time by either of the contracting parties, whenever they feel that the scheme of reciprocity is not working out fairly.

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### THE PARATHYROIDS.

It is only in recent years that the importance of the parathyroids has been established. These minute glands were first described by Sandstrom in 1886 and since then have been investigated by many. It is now pretty well established that their removal produces tetany. It was formerly thought that removal of the thyroid gland caused this affection as the experiments were performed on dogs and other carnivora whose parathyroids are very close to and sometimes enclosed in the thyroids, the removal of the latter gland almost necessitated the removal of the parathyroids as well and so produced tetany. In herbivorous animals, however, the parathyroids are at some distance from the thyroid and so removal of the thyroid in these did not cause tetany. One of the most recent papers on the parathyroids is by William Halsted and H. M. Evans of Baltimore, who show that the parathyroids are always supplied by definite parathyroid arteries given off from the inferior thyroid and also from the anastomosing channel between the superior and inferior thyroid arteries. Halsted believes that the parathyroids are often sacrificed in ligating the main trunk of the inferior thyroid artery for the arrest of hæmorrhage. It is therefore important to recognize the origin of the blood supply to these glands and to ligate the inferior thyroid branch to the thyroid gland beyond the point where the parathyroid artery is given off. In some cases where the blood supply has been cut off the parathyroid has been successfully transplanted into the thyroid gland. In all operations for removal of portions of the thyroid it is important also to keep as close to the gland as possible, removing no adjacent tissue, and so avoid the removal of the parathyroids. Should tetany occur good results have been obtained by feeding the patient with the parathyroids of the ox.

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### THE TREATMENT OF MENINGITIS.

Another step in the medical knowledge of cerebro-spinal meningitis has been attained, and it is indicated by the recent paper published by Flexner and Jobling in the *Journal of Experimental Medicine* of January 1st. They have collated the results to the present time accruing from the employment of the meningococcus serum; their claims are modest and the data are put forward unembellished by any undue

claims in favour of the success of the treatment. It must be said that their results appear to be extremely good, so far ahead of any previous results obtained in this disease, that one may be forgiven for supposing that this method of treatment comes nearer the mark than anything hitherto discovered. The serum is made from the horse's blood, and a long process of immunization is necessary. Many different strains of the meningococcus are used in its preparation. The serum is injected into the spinal canal by lumbar puncture, and is generally put in after some of the cerebro-spinal fluid has been removed. One series of cases shows the following result: of nine cases untreated by serum, all died but one; of eleven cases of the same epidemic treated by serum three died and eight recovered. We congratulate the authors upon their results, and hope that this is but a promise of a brighter future in the treatment of this hitherto intractable disease.

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The following comment upon conditions in California appear to us to be worthy of publication. It is contained in a letter under date of February 3rd, from a physician who is now resident in Riverside:—

"I suppose it could be urged that a man, who has lived the greater part of his life on the bleak shores of Cape Breton, where storms occur frequently, should not be too hard to please in the matter of climate, but I left my home for a land of which the climate is described as in every way desirable, and, therefore, feel justified in judging it by what I have found, as compared with what I was led to expect. Arriving on the first day of December, I was charmed by bright sunshine and a temperature in the eighties in the shade of the verandah. At night-fall, however, the thermometer dropped to below 40° F., the sudden fall inducing coryza and symptoms of hay fever. Even during the day, when out of the sunshine the wind feels chilly and increases my trouble. Flowers bloom in profusion by the way side; only very early a white frost occurs. Strong winds seldom blow, and I have not yet seen anything worthy the name of a storm. The present is the wet season; six days of incessant rain ended last Wednesday, and yesterday (Monday) it began again, and is coming down in sheets to-day. We are in the centre of a great orange-growing district, made possible by irrigation. The city is prettily laid out, but as dull as a cemetery for visitors. I have a nice boarding house, with good food, and everything clean and pleasant. The rates are \$15 per week for room and board. The trip out over the Santa Fé railroad from Chicago was very pleasant. The service on the train is excellent. My return ticket to San Fran-

cisco, good for eight months, with return if I choose via Union Pacific, Denver & Rio Grande, cost \$145. If I were asked to recommend a place for a patient suffering from bronchial asthma, I don't think I would suggest California; but for a man who wishes to escape the cold and snow of an eastern winter, who can move about, and who desires chiefly rest and change of scene, I would cheerfully say California. The effect on my condition has been good. I have gained strength; my circulation is better, but my asthma is about the same."

The District of St. Francis Medical Association held its tenth annual dinner at Sherbrooke on the evening of Wednesday, February 12th. Despite the fact that in order to ensure the attendance of the Society's guests from Montreal the dinner was set for the ultra-fashionable hour of 9 p.m., some forty members attended, under the chairmanship of the President, Dr. Ledoux.

The St. Francis Association is the type of what a medical society in this province should be: it is bilingual, an admirable spirit of comradery binding together the members of the two races; its monthly meetings are looked forward to and well attended, members think little of travelling twenty to forty miles in order to be present; its membership is steadily increasing, so that now numerically as well as by the standing of its members it reflects accurately the progression of the district and is able to work effectively in raising the status of the profession, in determining the scale of fees, and in abolishing contract practice.

The *Maritime Medical News* has entered upon its twentieth year and celebrated the occasion by organizing a company for the publication of the *Journal*. The directors are:—Dr. D. A. Campbell, president; Dr. Murray McLaren, vice-president; Dr. W. H. Hattie, secretary; Dr. J. W. Daniel, Dr. John Stewart, Dr. G. M. Campbell, Dr. W. H. Hattie, Dr. James Ross. The directors make an appeal to the profession for support, which, we trust, will be successful. The editors in the past have done good service to medicine, and have given to the *News* that indefinable thing which is called character.

The Montreal General and the Notre Dame hospitals have made a joint request to the Quebec Government to increase the provincial grant to each of those institutions from five to ten thousand dollars. The

governing bodies feel that their burden should be shared by the public at large, for whose benefit the hospitals are conducted: There is nothing unreasonable in the proposal, and we trust that it will have a sympathetic consideration from the Government, which has always been well disposed towards good works.

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### OBSTETRICAL NOTES FROM EUROPEAN CLINICS

Graduate students here on the Continent fall readily into one of two classes:—First, those who are here for the purpose of obtaining clinical training which they should have had during their undergraduate years, and, second, those who have already had experience either in hospital or general practice and who have come to obtain greater proficiency in some particular branch of medical science. For all the larger centres, such as Berlin and Vienna, have the great advantage of unlimited clinical material, and yet in both these cities there are corresponding disadvantages for the man who would specialize. The first of the above-mentioned classes, though numerically far the larger, is composed for the most part of men who speak no German, have no desire to learn the language, but who are willing to pay over-liberally for courses which, though often useless to the man of training, must be taken before he can get the more desirable advanced work, for which a knowledge of German is desirable, nay, indispensable. Thanks to that most fortunate feature of the German system, the Geheimrath of Berlin to-day, is he who yesterday was the master of his art in some smaller town, be it Bonn, Halle or Marburg, where he was much more approachable and much more flattered by the presence of foreigners in his clinic. Indeed, there are still those who prefer a small clinic with the privilege of working, to the Metropolitan clinic with increased income but more distraction, (Krcchl and Mueller both refused to come to take Van Leyden's place).

The small town has a twofold advantage for the student; in it one comes nearer to the chief, and in it, one of necessity learns the German language and makes German friends, whom, the chances are should he return five years later, he will find in charge of one or other of the clinics in a larger centre.

During this and a previous trip it has been my good fortune to visit a number of the clinics for the diseases of women in Austria and Germany—Graz, Vienna (3), Prag, München (2), Tübingen, Würzburg, Leipsic, Dresden and Berlin (2). In all of these, save that of Wertheim in Vienna, which was entirely gynæcological, the two divisions,



gynæcology and obstetrics, are under the one chief, and it was with the latter division, or rather the border-line between the two—the handling of infected cases and abortions—that I was particularly interested.

Concerning these clinics, with the exception of Tübingen, München and Berlin, much of my knowledge has been obtained from conversation with the assistants, but from what I have heard and seen, the clinical material here, though more extensive, is no better than either in Baltimore or Montreal. On the other hand, the student seems much more alive to the possibilities than do ours, and the teaching, which is almost entirely clinical, is not to be compared. To those familiar with Bumm's book, it will be no surprise to hear that in his clinics one not only sees the patient, but, thanks to his skill with chalk, is made practically to see whatever pathological condition may be present. Other teachers not equally gifted, obtain similar results by means of drawings and diagrams shown with the projection apparatus.

Of the clinics themselves, probably the most elaborate and best equipped is that of Leopold in Dresden, where too the training of nurses seems to be of an unusually high standard, and the technique particularly good. Prag, though one of the smaller clinics, was particularly interesting, perhaps because in many respects (having dual languages, the Czech and German) similar to that of Montreal, but undoubtedly, thanks to the courtesy of Professor Kleinhans and his assistants. The obstetrical clinic was so thoroughly clean and well-conducted, the patients looked so well cared for, and at the same time there were so many dirty cases being sent in from the city, that there was unbounded opportunity for interesting work. Many Canadians and Americans have worked in Prag with Chiari. There is still good work to be had in medicine (*v. Jaksch*), and in gynæcology and obstetrics.

It has not been possible to go to Freiburg, though all the younger gynæcologists are very enthusiastic over Krönig, who seems to be the coming man. Everyone is working—Krönig, Doederlein, Amann, Bumm, *v. Rosthorn*, *v. Franque*, and the younger men, Bürger, Baisch, Krömer, Liebmann—all working, and it is not a question of income, it is a question of getting to the top.

It is probable that the main topics for discussion in the field of Obstetrics are:—

- (1) Scopolamine—morpia anæsthesia.
- (2) Eclampsia.
- (3) Vaginal section: Colophysterotomy—*anterior*.
- (4) Pubiotomy—*Hebostectomy*.

In dealing with these questions, offering so many different sides for observation, and over which, consequently, there has been much and useless discussion, two expressions of opinion come at once to mind:—

“There is a practice of obstetrics suited to clinics, and a practice suited to private houses. Operations must be chosen, not on account of their scientific value per se, but on account of the availability; and no one is justified, for the sake of the child, in subjecting a mother to an operation and its attendant risk, unless under the most favourable conditions, which, indeed, obtain only in special obstetrical clinics (Doederlein).”

“The difference of results from accouchements in special clinics and accouchements at home will undoubtedly result in bringing many women to the clinic who otherwise would not come—and the practice of so-called hospital obstetrics will unquestionably gain headway in the future” (Negar—very free translation).

#### *Scopolamine-morphia.*

From conversation with many of the assistants in the various clinics, one receives the impression that Gauss's extollation of Scopolamine-morphia has in general failed in confirmation.

In Munich, one-half of the patients only were given injections with a view of testing its value. It would be unwise to offer an opinion before the results of these researches are published, but from personal observation of a number of these cases, and after reading the report of the proceeding at the recent Gynæcological Congress in Dresden (Gyn. Rundschau, 1907, No. 20), one cannot but distrust the workings of the drug. In the first place, its effects are not uniform. For a satisfactory result, absolute quiet, something almost impossible to obtain in a large delivery room, is the first requisite; on the other hand, the preparations vary greatly in potency, and experience has shown that a fresh preparation is essential, which, of course, makes its use in private practice very difficult. Then, too, in private practice the inability of the physician to guarantee a satisfactory result from the exhibition of the drug, together with the possible coincident, if not consequent injury (deep asphyxia, etc.) to the child, would undoubtedly deter one from its use. Of the five assistants in the Munich clinic, four expressed the opinion that the drug was of no particular value; the fifth holds that it is a help to many patients, but “would not care to use it in private practice.” In but one clinic, that of Krönig in Freiburg, have the results of scopolamine-morphia been uniformly successful. Gauss is undoubtedly master of the technique of its admin-

istration. General opinion tends to the conclusion that it would be hard for anyone else to obtain similar proficiency.

### *Eclampsia.*

Everywhere the teaching is to deliver as rapidly as is compatible with the safety of the mother. Where labour has already begun, vaginal section seems to be the favourite method of operation, though in the Dresden clinic the Bossi dilator is still used.

Professor Doederlein recently gave the following instructions to his assistants:

“Cases coming to the clinic in my absence, if in labour are to be immediately delivered. In post-partum cases, and where labour has not yet begun, make a lumbar puncture and give an injection of stovaine—repeat, if necessary—morphia may be given, though it is rather dangerous in large doses. Avoid chloroform as far as possible—above all, keep the patient quiet. Complete delivery as soon as the cervix begins to dilate.”

It was my good fortune to see one patient so treated:—Primipara, about twenty years of age, thirty-eight weeks pregnant, entered the clinic about 5 p.m., having had six convulsions since noon of the same day. After arrival in the clinic, she had a seventh very severe convulsion, and was given stovaine, 0.10 gm., by means of lumbar puncture, also a small dose of morphia. The urine at this time contained so much albumen that it solidified on boiling (9 gr. per liter), and the patient was very œdematous. As a result of the injections she slept quietly during the night and when awake was encouraged to take fluids. The following day she had another convulsion, but as there was no sign of the onset of labour, a second lumbar injection was given as before. Her condition remained much the same for four days, and the foetal heart was at all times distinctly audible. On the fifth day labour pains set in, and she was eventually easily delivered by low forceps. Recovery was uninterrupted and unusually rapid.

In this one case, the result undoubtedly justified the expectant policy. Incidentally, the reason for not delivering immediately was that the ill results from vaginal section have been almost invariably due to hæmorrhage, which is extremely difficult to control unless the uterus contracts properly. In absence of pains, hæmorrhage is a grave danger.

Though an advocate of the administration of large quantities of fluid by mouth and rectum, as well as by hypodermoclysis, Professor Doederlein is opposed to the use of sweat-baths, which he contends may result in concentration of the eclamptic toxine. (Experience in the

Montreal clinic does not support this view, as the results from sweat-baths in conjunction with the administration of large quantities of fluid have given uniformly favourable results.)

#### *Vaginal Section.*

This is now uniformly recognized as a most valuable surgical means of emptying the uterus, though naturally available only within the walls of a hospital. So far, in the majority of the clinics its chief indication has been in the treatment of eclampsia. The uniform success in this field has justified a much wider application, and in the Munich clinic I was fortunate enough to see two such operations, where, with a transverse presentation, premature rupture of the membranes had been followed by prolapse of the umbilical cord. Delivery by version was accomplished in much less time than would be needed to describe the steps of the well-known operation. It would appear that in cases of pulmonary tuberculosis, where interruption of pregnancy is to be combined with sterilization of the patient, this will prove an operation of the greatest possible value.

#### *Hebosteotomy.*

Opinion seems divided as to the scope of this operation. In Graz, where the clinic is about the same size as in Montreal, they had had no experience with it. In the Chrobak clinic, one of the assistants told me that in two years there had been positive indications for the operation in four of seven thousand cases. On the other hand, in the Schauta clinic, with similar material, they average one hebosteotomy in two weeks, and Dr. Burger, who was most cordial in showing the inner workings of his department, demonstrated to me a patient in apparently perfect condition two weeks after the operation.

As with all disputed operations, the results obtained seem to vary with the technique employed. Nearly all the ill results have been due to excessive lacerations of soft parts attributable to the application of forceps, or more particularly version. It is now agreed that the proper procedure is to divide the pubic bone and then allow the labour to proceed naturally. This labour differs in no way from ordinary labour where the pelvis is normal, and there is no increased pain from the osteotomy.

In the Prag clinic, Professor Kleinhaus demonstrated to me a patient on whom the operation had been twice performed within a period of a little more than a year, in each instance with most satisfactory results. The Röntgen picture of the pelvis showed excellent bony union in each

of the pubic bones, and at the same time proved conclusively that one such operation does not permanently enlarge the pelvis.

The operation, as performed by Professor Doederlein, is no more subcutaneous than is that with which we are already familiar. There is a difference, however, in after treatment, in that the patient is allowed to lie in bed without special support to the pelvis, which, of course, allows the bones to separate and tends to permanent enlargement of the pelvis.

HERBERT M. LITTLE.

Berlin, January, 1908.

### Reviews and Notices of Books.

DISEASES OF THE HEART. By PROF. TH. VON JÜRGENSEN, of Tübingen; PROF. DR. L. KREILL, of Griefswald; and PROF. DR. L. VON SCHROTTER, of Vienna. Edited, with additions, by George Dock, M.D., Professor of Medicine, University of Michigan. Octavo of 848 pages, illustrated. Philadelphia and London; W. B. Saunders Company, 1908. Cloth, \$5.00 net; half morocco, \$6.00 net. Canadian agents: J. A. Carveth & Co., Ltd., Toronto, Ont.

The present volume is a welcome addition to the translated series of the Nothnagel system; it is a well indexed book of 850 pages, uniform with the other numbers of the set. The American editor's aim has been, as he says, not to interfere with the native flavour of the work, and he has been sparing of change, and not very lavish of additions; knowing Professor Dock's familiarity with the subject in all its details, we appreciate the motive that has led him thus to keep himself in the background. The first part of the work is Professor von Jürgensen's article upon Insufficiency (weakness) of the Heart. This is a well and favourably known monograph, as is also the part which follows, dealing with Endocarditis. One sees in passing a human note that is much oftener found in German than in English works. In speaking of the "one-organ-specialists," von Jürgensen says, "The same is true of the universal specialists—Pastor Kneipp & Co.—who fill God's acre more than they cultivate God's vineyard." The Schott treatments meet with commendation, and ether takes precedence of all other diffusible heart stimulants.

In the part treating of endocarditis there is a marked abstinence from editorial addition. Professor Dock emphasizes the blood culture in obscure infective endocarditis and indicates the usefulness of the op-

sonin method in such cases. In the discussion of the valvular lesions, the editor adds the short paragraph on Tricuspid Stenosis.

Professor Krehl, then of Griefswald, writes the Diseases of the Myocardium. In a short dissertation on X-rays the editor points out that too much stress may be laid on the value of knowledge of the size of the heart at a fluoroscopic examination: the approximate size, as revealed by the older methods, and an appreciation of changes therein, are even more valuable because more constantly obtainable. Comment upon cardiac rhythm might be fuller, in view of the importance of the subject to-day; although fuller information is given elsewhere in the discussion of heart-block. The discussion of the estimation of pulse tension is good. A bit of Teutonic sarcasm is this: "if this were an up-to-date work, a complete description of the shape and various kinds of water-cushions, pillows and arm-chairs, with a few illustrations would now be in order," and it must be confessed a palpable hit.

The section on Diseases of the Pericardium is written by Professor von Schrötter, and is small compared with the other parts. A good addition is made in view of recent work upon paracentesis of the pericardium. We can justly say that, throughout, the work of the authors has been excellently dealt with by Professor Dock.

OSLER'S MODERN MEDICINE; Modern Medicine, Its Theory and Practice in Original Contributions by American and Foreign Authors. Edited by WILLIAM OSLER, M.D., Regius Professor of Medicine in Oxford University, England, assisted by THOMAS McCRAE, M.D., Associate Professor of Medicine and Clinical Therapeutics in the Johns Hopkins University, Baltimore. Vol. III, Infectious Diseases (continued)—Diseases of the Respiratory Tract. Illustrated. Philadelphia and New York: Lea Brothers & Co., 1907.

The third volume of Osler's Modern Medicine follows the second with a commendable expedition, considering the labour involved in the production of so large a work. It is divided into two parts, of which the first continues the Infectious Diseases, and the second deals with Diseases of the Respiratory tract: this volume, uniform with the others, consists, with its index, of 960 pages.

Col. David Bruce comes fresh from the Mediterranean Fever Commission to the subject of Malta Fever, and considering that they have recently discovered the part played by the Malta goats in its spread, no one is better able to speak thereon, even if the author had not himself been the discoverer of the germ.

Maximilian Herzog brings his Philippine experience to bear upon the subject of Beri-beri. Anthrax, Rabies, and Glanders are dealt with by

Dr. Ravenel; we are disappointed not to find in the last-named article, any reference to so large a series as that compiled by Robins in the Royal Victoria Hospital Studies. The above mentioned five articles, with Dr. J. M. Anders' on Tetanus are thoroughly well done. Rufus Cole's article upon Gonococcus Infections is a very full, in fact, an absolutely complete statement of the subject. Gonococcus Infections is the correct title for such an article, for it is necessary to enforce the real nature of a disease that was considered for long time as local. Dr. Isadore Dyers' article on Leprosy is well illustrated, and is interesting.

The history and etiology of Tuberculosis are dealt with by Dr. E. R. Baldwin, of Saranac, who has set out most readably the large accumulation of historic fact connected with the disease; the most difficult part of the work is to set forth the prevailing or the most reasonable view of the many vexed questions connected with the tubercle bacillus, its different strains, its culture and its morphological characteristics. We are glad to see the various kinds of tuberculin tabulated and simply stated in a way which is readily accessible to the ordinary reader, as well as a statement of the physiological action. Finally, the vexed question of paths of infection is dealt with in a way that corresponds with the views of the reviewer, at least, and we venture to think, with the greatest weight of evidence.

Prof. W. G. MacCallum, of Johns Hopkins, writes the chapter upon the Pathology of Tuberculosis; it is clear, well-collected, and well-arranged, systems being dealt with in definite order; the entire article is written with that touch of dogmatism which becomes well a system article.

We are not surprised that Dr. Lawrason Brown has given us a first-class series of articles upon tuberculosis; he has literature at his fingers' ends, and a deep enthusiasm and long practice to depend upon, and the result is good. The symptoms and signs are dealt with at length, and with much accuracy. Does Dr. Brown mean that a woman with large or lax mammae ought to be percussed in the *prone* position? We note, too, that such a term as myoidema requires definition for most readers. We do not think the chapter on modes of onset very valuable, save to indicate that any sick person ought to have the lungs carefully examined. We make these statements with an apology, considering the exceptional standard of the article. Upon prophylaxis and treatment Dr. Brown is upon ground with which he is to the last degree familiar, and his work is full of practical experience and most thorough.

Syphilis, treated by Dr. Wm. Osler and Dr. Thomas Churchman, is, we had almost said, a pleasure to read. There is much of the individu-

ality of the senior author in it; the spirochæte is admitted as the all-but-proven cause of the disease, and the strictly medical side of the article needs no commendation. We can go further and point out that a most dispassionate argument of the duty of the state with regard to the prophylaxis of syphilis is given; not with any definite result, it is true, as far as the state is concerned; no one man, no dozen commissions and no half-hundred states *can* settle that question. Dr. Osler lays the greatest stress upon education in all its forms, and points out the effect that "para-syphilitic" efforts for advance will have, namely, how much can be done by meeting the drink problem, and by bettering social conditions, for the worse these are, the greater chance for spreading has the parallel evil of syphilis.

Dr. Thomas R. Boggs has a difficult set of problems before him in Febricula, Glandular fever, Infectious Jaundice, Miliary fever, Rocky Mountain Spotted-fever, Psittacosis, Foot and Mouth Disease, and Milk-sickness. With a wide use of the literature, a satisfactory presentment is given.

Part II of the volume, dealing with the respiratory tract, is prefaced by an excellent article upon the Mechanics of Respiration, by Thomas R. Brown. The idea of such an introduction is an excellent one, for it gives the reader a chance to review, in the light of modern physiology, many facts that he is apt to have overlooked since his early medical days, when he sought them perforce in his text-book of physiology; especially valuable is it, in that it deals largely with the physiology of pathological states of respiration. Dr. Brown has done his part admirably.

Diseases of the Nasopharynx, Pharynx and Tonsils are taken up by Dr. Francis R. Packard, of Philadelphia, and those of the Larynx, by Dr. H. S. Birkett, of Montreal. Both are accurate, condensed and incisive, for both authors are thoroughly conversant with the subject. W. P. Dunbar very properly is chosen to contribute the article on Hay Fever, and though he may be classed as an enthusiast, his article is moderate and reasonable; and Pollantin may be granted an undoubted first place in the treatment of the disease. Dr. Alexander McPhedran contributes a really excellent article on the Diseases of the Bronchi. If the author is to be specially commended for any part, it is for the completeness of the paragraphs devoted to treatment, which seem in every way to be thorough. Foreign bodies receive more mention than is usual in purely medical treatises.

H. A. Hare, of Philadelphia, deals with the diseases of the lungs, and Frederick T. Lord, of Boston, with those of the pleura; Professor



James, of New York, contributes a short article on Pneumothorax, and Dr. Christian, of Boston, one on the diseases of the mediastinum. To say that these are all good makes a review monotonous by reason of praise, but it is necessary. The volume is first-class.

**HYGIENE AND PUBLIC HEALTH.** By LOUIS C. PARKES, M.D., D.P.H., and HENRY R. KENWOOD, M.D., D.P.H. Third edition, with illustrations. H. K. Lewis, 136 Gower Street, London.

The third edition of this well known work will be much appreciated by the student in Public Health. The whole work has been carefully revised, many parts rewritten, and several chapters dealing with fresh material have been added. With all this, by a process of careful pruning the work is not increased in size, in fact, by a slight enlargement of the page area the thickness of the volume, as compared with former editions, has been diminished and is therefore handier. The chief addition is the chapter on school hygiene, which is decidedly an attraction in these days when school hygiene is looming up so largely on the horizon. The subjects dealt with under this heading are so important that one almost regrets the very condensed form in which the different items are couched. However, nothing has been omitted and the rules governing school inspection are very commendable and worthy of all attention. The section dealing with Refuse Disposal (including sewage purification) has been brought up-to-date, setting forth in a precise fashion, stripped of all controversial matter, the latest ideas and experiences in this respect, especially with regard to sewage plants. Those chapters dealing with water, soil, and air, have undergone a slight cutting down and several items added, chiefly dealing with the bacteriological data necessary to adequately set forth the present day views upon these subjects. On the whole, the present volume is to be recommended even more strongly than the previous editions, if this be possible, for the work of these two authors has gained a reputation for itself which it is difficult to surpass.

**OPHTHALMIA NEONATORUM**, with especial reference to its causation and prevention. By SIDNEY STEVENSON, M.B., C.M., Publishers, George Pullman, Ophthalmic Institute, Thayer Street, London.

The author takes up the subject under the following heads: Introduction, ætiology, symptoms, histology, diagnosis, prognosis, prevention, treatment, general conclusions. After defining ophthalmia neonatorum, the author states that this malady has been recognised since the dawn of medicine, Soranus and Ætius having referred to it. The first part of the inquiry is then taken up, namely the prevalence of Ophthal-

*ophthalmia Neonatorum*. A large number of statistics, derived from many sources, are given. The second chapter on aetiology is exceedingly interesting. The author tells of the many different causes *ophthalmia neonatorum* has been attributed to, such as exposure to cold air, the intrusion of soap, a scrofulous constitution, or a disordered state of the bowels. It is interesting to note that, in 1750, Quellmatz insisted upon the recognition of the connection between leucorrhœa in the mother and *ophthalmia neonatorum* in the baby. But in 1806 Edmonston stated that *ophthalmia neonatorum* was associated with a loaded and oppressive state of the bowels. In 1854, William MacKenzie stated the disease in its worst form was the result of the application of gonorrhœal matter during the passage of the head through the vagina. In 1879, Neisser announced his discovery of the gonococcus in the pus from the eyes of ophthalmic patients, both infants and adults. The proportion of cases due to the gonococcus is then taken up followed by descriptions of *ophthalmia neonatorum* due to such factors as the pneumococcus, bacillus coli, Koch-Weeks bacillus, bacillus diphtheriæ, influenza and pseudo-influenza bacilli, etc., etc. On page 59, commenting on influenza and pseudo-influenza bacillus the author says: "So far as I am enabled to judge from the description given these organisms appear to be identical with one another and also with the Koch-Weeks bacillus." Here he is wrong. Koch-Weeks and B. Influenzæ are entirely different micro-organisms which cultivation of each on human hæmoglobin agar will readily demonstrate. There has been entirely too much differentiation of conjunctival organisms by morphology, the inaccuracy of which method need not be commented upon. Under prognosis is considered the factors upon which depend any case,—nutrition of the body, stage of the disease, the condition of the cornea, the bacteriological cause. The chapter on prevention deals with Credi's work. His figures speak for themselves. With his treatment in three years of 1,160 children born alive, in only one case was there *ophthalmia neonatorum*. On treatment, silver nitrate and the synthetic silver salts are discussed. The author favours freshly prepared argyrol in 25 per cent. solution.

Stevenson in his attractive book has covered this subject systematically and thoroughly. Each division is taken up historically and the opinions of years ago compared with those of to-day. The different summaries are to be commended. To those desirous of becoming thoroughly familiar with *ophthalmia neonatorum* and with the literature of this subject we believe this work is the most comprehensive of any English monograph yet written on this important subject. The book is well bound, the paper and printing are of superior quality.

G.H.M.

THE COMMONER DISEASES OF THE EYE. With 280 Illustrations (many original) and 8 Colored Plates, by CASEY A. WOOD, M.D., C.M., D.C.L., and THOMAS A. WOODRUFF, M.D., C.M., L.R.C.P. (London), W. T. Keener & Co. Price, \$2.50 net.

The appearance of the third edition of Wood and Woodruff's little work on the Commoner Diseases of the Eye will be welcomed by many of the general Practitioners of Medicine, who have not the time to consult the larger text-books on ophthalmology. The book has been considerably increased in size and the pathology, histology and gross anatomy of the orbit and its contents have been described. In addition a very useful chapter on the relationship of diseases of the nose and adjoining cavities to the diseases of the eye has been written. The importance of this relationship has been overlooked to a great extent in previous text-books. The illustrations are numerous and as a rule good and the book fulfils all that is claimed for it in the preface by the writers. It is strongly to be recommended to beginners in the study of ophthalmology.

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## Medical News.

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### MONTREAL GENERAL HOSPITAL.

The annual meeting of the corporation and board of governors of the Montreal General Hospital, was held February 18th, when the election of officers resulted as follows:—

President—Mr. James Crathern; Vice-president—Mr. H. Stikeman; Treasurer—Mr. F. W. Evans; Secretary—Dr. F. G. Finley. Committee of management—Dr. F. J. Shepherd, Messrs. David Morrice, J. B. Learmont, A. W. Hooper, Hugh Paton, J. Reid Wilson, Bartlett McLennan, Abner Kingman, Hugh Graham, Sir Montagu Allan, with the president, vice-president and treasurer.

Physicians—W. A. Molson, A. D. Blackader, F. G. Finley, H. A. Lalleur. Surgeons—F. J. Shepherd, G. E. Armstrong, J. A. Hutchison, J. M. Elder. Out-patient physicians—G. Gordon Campbell, S. Ridley MacKenzie, C. A. Peters, A. H. Gordon, C. P. Howard, A. G. Nicholls, Kenneth Cameron, E. M. von Eberts, A. T. Bazin, A. R. Pennoyer, W. L. Barlow, R. P. Campbell. Oculist and aurist—G. H. Mathewson; assistant oculist and aurist—S. H. McKee. Gynæcologist—F. A. L. Lockhart; assistant gynæcologist—H. M. Little. Laryngologist—H. D. Hamilton; assistant laryngologist—R. H. Craig. Neurologist—D. A. Shirres.

A committee was appointed on credentials of applicants for the positions on the medical board, in accordance with by-laws, as follows: Chairman of the committee of management, Mr. James Crathern, *ex-officio*; representing the committee of management, Messrs. H. Stikeman, Hugh Paton, J. B. Learmont; representing the medical board, Drs. F. J. Shepherd and F. G. Finley; representing the governors, Messrs. Robert Reford, E. B. Greenshields and George E. Drummond.

The president, Mr. James Crathern, submitted the report of the committee of management which contained the following statement:

"Looking back at the work of the hospital, we find in 1857 the number of indoor patients that received attendance in the wards of the hospital to be 966, and the outdoor, 4,953; or a total of 5,919, as against 54,187 last year. The income was \$12,230, and the expenditure, \$12,510; or \$280 in excess of income. During the past fifty years 100,121 in-door patients passed through the wards of the hospital, and the out-door patients which received treatment numbered 1,094,222; a total of 1,194,343."

The report further stated that Mr. Bartlett McLennan has been elected to fill the vacancy on the committee caused by the much regretted resignation of Mr. S. H. Ewing. The addition to the Nurses' Home had been completed at a cost of \$16,623, and the fireproof galleries between the two surgical wards at a cost of \$11,626. The income from all sources for the past year amounted to \$105,907, and the expenditure to \$124,738, being an expenditure of \$19,731 over income. The number of patients who passed through the wards of the hospital during 1907, is 3,347; out-door patients numbered 50,840, being 3,858 in excess of 1906. The total number of indoor and outdoor patients for the year was 54,187. Since the training-school was established, 219 nurses have graduated, of which 21 graduated in 1907. Fifty-five new life governors were added during the year and sixteen governors died.

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### NOTRE DAME HOSPITAL.

The twenty-seventh annual meeting of the Notre Dame Hospital was held February 18th. The report of the Superintendent, Dr. Harwood, showed that the hospital had treated 2,366 patients during the past year: of this number 787 entered the medical department, and 984 in the surgical. The treatment of those patients represented a total of 40,431 days. There were 791 ambulance runs for accidents, 483 for private patients, and 186 false alarms. At the St. Paul's Hospital there had been 70 cases of diphtheria, 68 cases of scarlatina, 5 cases

of scarlatina and diphtheria, 68 cases of measles and scarlatina, and four cases of erysipelas. Out of 261 sick children, 218 were sent home cured, 16 died, and 27 were still at the hospital.

The treasurer read his report, which gave the expenses at Notre Dame Hospital for the past year as being \$60,850, while the receipts were \$51,605, showing a deficit of \$9,245. The report also showed the expenditure of St. Paul's Hospital as being \$38,382, with receipts of \$20,790, or a deficit of \$17,591. During the past year each patient cost \$1.50 per day, against \$1.13 the previous year.

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### CONGRESS OF TUBERCULOSIS.

The International Congress on Tuberculosis at Washington, in September, 1908, will be an important event. This Congress meets once in three years, but it has never met in America.

The Congress will carry on, for three weeks, public discussions of the tuberculosis problem, led by the most important authorities on this subject. Official delegates will be present from nearly all civilized countries. There will be a course of special lectures to which all members of the Congress and the general public are invited.

The Congress will be divided into seven sections, giving ample scope for participation of both scientific and lay members. There will be a Tuberculosis Exposition, and Clinics and Demonstrations, giving medical and lay delegates object lessons on the causes and prevention of tuberculosis.

There will be very valuable publications, of which the Transactions will be the most important. The transactions of the last Congress are published in three volumes. The proceedings of this Congress will require four volumes. These are free to all members of the Congress, who have paid their membership fee (\$5.00).

There are two classes of members: Active Members, who pay a fee of \$5.00; and Associate Members, who pay a fee of \$2.00, and have all the privileges of membership, except the right to vote and to receive the printed volumes. The Secretary-General may be addressed at 714 Colorado Bldg., Washington.

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### CANADIAN MEDICAL ASSOCIATION.

The forty-first annual meeting of the Canadian Medical Association will be held in Ottawa on the 9th, 10th and 11th of June, 1908, under the presidency of Dr. Fred. Montizambert, Director-General of Public

Health. Members and others who intend to take part in discussions or to contribute papers, are asked to inform the General Secretary, Dr. George Elliott, 203 Beverley Street, Toronto.

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The annual meeting of the Oxford Co. Medical Association was held in Ingersoll, January 24th. The following officers were elected:— President—Dr. Rogers, Ingersoll; Vice-president—Dr. Green, Embro; Secretary—Dr. Brodie, Woodstock; Treasurer—Dr. Neil, Ingersoll.

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Dr. Sprague, a well-known practitioner of Belleville, dropped dead in the office of the City Clerk, January 25th. Heart disease was the cause of death.

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Dr. Henry Going died at London Ontario, January 28th. Dr. Going was 91 years of age, and he practiced in London for over sixty years.

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## Retrospect of Current Literature.

### SURGERY.

UNDER THE CHARGE OF DRs. ARMSTRONG, BARLOW, ARCHIBALD, AND CAMPBELL.

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PROF. DR. KUSTER, Charlottenburg. "Diagnosis and Therapeutics of Tumours of the Kidney." *Zeitschrift f. Urologie*, Bd. II, Hf. I.

In the diagnosis of renal tumours, three groups of symptoms and signs may present themselves.

1st. Those dealing with the presence of a tumour, of which swelling, pain and urinary changes, especially sudden, irregular hæmaturia are the most important.

2nd. Those which deal with the variety of tumour present.

3rd. Those which aid us in prognosis and determine the possibility of removal or otherwise.

Under the second group Kuster gives his own statistics, which include 89 cases of kidney tumour; 58 of these were hypernephroma, or as he prefers to call them, epinephroids. Twelve of the 89 cases were not properly recorded, so that 75 per cent. of his kidney tumours were epinephroid. The remaining 25 per cent. included cancer, sarcoma and mixed tumours of children.

Those signs which are to aid us in our prognosis are, first, the fixity of the tumour, and, secondly, the findings in the separated urines. While

Kapsammer pins his faith to the early secretion of sugar after phlorizin injection, Kuster would go further, and in cases where the second kidney was doubtfully healthy, would make a double exploratory incision previous to nephrectomy.

He prefers lumbar anaesthesia with novokain, and has a good word to say for the transperitoneal route in renal operations, which permits of inspection of the liver, thus revealing any metastases, and at the same time allows the radical removal of glands, the fatty capsule and the adrenal, which is necessary in malignant cases. Early diagnosis is thus of greatest importance, and once diagnosed, early removal is indicated. Only in those cases where a small nodule is present in the second kidney should partial excision be considered.

W. J. McCARDIE, B.A., M.B., B.C., Anaesthetist to the General, Dental, and Ear and Throat Hospitals, Edinburgh. "Status Lymphaticus in Relation to General Anaesthesia." *British Med. Jour.*, Jan. 25, 1908.

The condition known as Status Lymphaticus, though, perhaps, described as early as 1614, by Plater, has never received much attention in the medical literature of England, though since the work of Paltauf in 1890, it has been frequently the subject of discussion in American (including Canadian) and German periodicals. To Paltauf belongs the credit of recognizing this condition as an association, if not the cause, of sudden death in anaesthesia and other conditions. To his description, which includes enlargement of the tonsils, of the lymphatic gland system, of the follicles at the base of the tongue, of the spleen and of the thymus gland, with or without some narrowing of the aorta, but little can be added. It is otherwise, however, with the number of deaths which can be collected as occurring under this state, and it is with the object of adding some further statistics to this disease and of pointing out its relationship to anaesthesia that the author has undertaken this work.

The subjects of the status, also called "lymphatisen," are unusually subject to infectious diseases, to death from shock and fright, and to death from anaesthesia. Even comparatively slight injuries may in them end fatally. In the children's clinic at Gratz the records show that in every chloroform fatality during the last twenty years the status was present. The earliest case reported in England was in 1905, and the second appears in this number of the *British Medical Journal*. The case, reported by Dr. MacTaggart in the *MONTREAL MEDICAL JOURNAL* in 1903, in which sudden death occurred after 1-12 gr. morphine, is mentioned.

As the combined result of anæsthesia and lymphaticus thirty deaths have been collected by the author; seventeen from chloroform, six from ether, and five from a mixture of both. Two cases have resulted from local anæsthesia, in one of which Schleich's infiltration was used.

The average age of sudden death in thirty-five collected cases was sixteen years, the youngest being six months, the oldest fifty-five years. Both sexes were equally affected.

The author then adds seven cases of death during, or immediately subsequent to anæsthesia, six of which he regards as being influenced by the status lymphaticus.

A diagnosis of these cases may be made during life. Vienna clinicians hold that they can recognize it by the pasty complexion, an increase in subcutaneous fat, signs of rickets or scrofula, enlarged superficial glands, enlarged tonsils and adenoids, and a palpable spleen. To these might be added a possible enlargement of the thyroid. The thymus is always enlarged.

Chloroform in such cases is dangerous, as is evidenced by the large number of deaths resulting. Ether, and ether by the open method, is safest. Once respiratory and cardiac failure have occurred nothing can be done, hence our only possible safeguard is to recognize such cases previous to operation.

DR. ERNST FREY, Assistant in the Pharmacological Institute, Jena.  
 "The Retarding of Water Diuresis Through Narcosis." *Arch. f. d. ges. Physiol.*, '07, Bd. 120.

These physiological experiments are interesting in demonstrating that the use of morphine, chloralhydrate, and ether retard, under all conditions, the diuresis of water, whereas salt is excreted, a fact which tends to bear out facts observed as to the small amount of urine excreted by patients under anæsthesia. The experiments were made on animals, who were anæsthetized and narcotized, and into whose stomach, bowels or peritoneal cavities, water, beer, sugar solution, etc., were introduced. Water absorption from the intestines took place readily enough, but no excretion from the kidneys occurred.

ARTHUR E. BARKER, F.R.C.S., Professor of Surgery at University College Hospital, etc. "A Second Report on Clinical Experiences with Spinal Analgesia, with a second series of 100 cases." *British Medical Journal*, Feb. 1st., 1908.

Among English speaking surgeons, no one can speak with quite so much authority on lumbar anæsthesia as the author of this paper. In March, of 1907, Barker published his first series of 100 cases, and now



follows this by a second series. It is not because the author has been unusually successful, nor that his experience in these matters is larger than that of many continental writers who have busied themselves with this subject, that we wish to draw attention to the work done at University College Hospital. It is rather because the writer has worked out his own theory and practice along lines of his own. The essential point is that Barker works with a solution of stovain and glucose in water, with a specific gravity of 1.0230, whereas the specific gravity of the cerebro-spinal fluid is 1.0070.

Barker showed in his first paper that not only experimentally in vitro, but also in vivo, it was possible to determine to what part of the spinal canal this denser fluid should sink and consequently what nerve-roots should be influenced, and what areas of anæsthesia result. This second contribution supports these contentions and is most convincing. In one other point does Barker's work differ from that of continental writers, notably Dönitz, who has, perhaps, done most work on this subject at the Bonn Clinic, that is in the absence of accessory drugs; neither adrenalin nor preparatory injections of scopolamine or morphine are used, indeed, we are specially warned against their use.

The whole piece of work goes to show that with sufficient experience spinal analgesia is a highly satisfactory type of anæsthesia, both to patient and surgeon, though even Barker would not claim that its field of usefulness is any but a limited one.

DR. ERNST HOLZBACH, Assistenzarzt-Tubingen. "Eighty Lumbar Anæsthesias Without a Failure." *Munch. Med. Woch.*, 21st Jan., 1908.

This is a fair type of many papers published on the subject at the present time. One and a half and half an hour before operation 1 cg. morphine and 3 dmg. scopolamine is given hypodermically. Then by lumbar puncture .04 to .08 g. stovain, and .0001 suprarenin. Under this, forty-six laparotomies, seven vaginal coeliotomies and twenty-seven other operations (where the peritoneum was not opened) were performed. Anæsthesia did not last longer than 60 minutes, and in fourteen cases ether was required towards the end of operation. R. P. C.

## OPHTHALMOLOGY.

UNDER THE CHARGE OF DRs. STIRLING, BYERS, MCKEE, MATHEWSON, TOOKE.

ROBERT SCOTT LAMB, M.D. "Angiosclerosis of the Eye." *Ophthalmology*, January, 1908.

In this article Dr. Lamb draws attention to the importance of the early recognition of vascular changes in the eye. With the slightest

disorganization of the vessel wall there is transudation into the surrounding tissues in the retina, this causes œdema which if limited to the nerve layer is easily remedied, but if the outer layer (nuclear) be affected complete recovery cannot take place; the inflammation may progress beyond this stage with the exudation of plasma and polynuclear leucocytes leading to the discoloration of the vessel walls which may eventually appear thickened, and white. In the smaller vessels the endothelium proliferates and there is increased connective tissue formation. These changes occur first in the retina, next in the chorio-capillaris and then in the outer layers and sclera.

The symptoms are tiring of the muscles of the eye, photopsiæ, slight or prolonged blindness or blurred vision. The objective symptoms are conjunctivitis, partial ptosis, nystagmus, blepharospasm. In the fundus the disc and retina appear hazy, the vessels have apparently nodes and are tortuous; white lines or bands are seen along the larger vessels, arterial pulsation and perhaps spasm, hemorrhages into the retina and choroid occur, chorio-retinitis or neuro-retinitis are seen.

The fields are contracted proportionately. If discovered early the treatment in these cases is satisfactory. The treatment consists in correcting any disturbance of digestion by diet, cathartics, etc., regulating the blood pressure, restriction of the intake of fluids and reducing the quantity of salt ingested, administration of nitrites and iodides, pilocarpin baths and packs, strychnine or nux vomica. Locally the use of hot moist applications of salt or boric acid and of subconjunctival injections and in some cases dionin.

The results of angiosclerosis of the eye can be retinitis, choroiditis, cataract, glaucoma, embolism or thrombosis of the central vessels of the retina.

H. V. WURDEMAN, M.D. "The Treatment of Partial Optic and Retinal Atrophy by Electricity and Massage." *Ophthalmology*, January, 1908.

This is the second article from this able observer's pen. He claims improvement, only in partial primary optic nerve atrophy and consecutive to optic neuritis and to chronic retinitis. By this treatment the nutrition of the nerve is improved, the discs become more normal, visual acuity and the fields are greatly increased. He uses in these cases a combination of the high tension faradic current and the galvanic current of from five to ten milliamperes, the duration of treatment varying from three to five minutes every day or every other day. The treatment has to be continued for months; the negative pole

is applied over the eye and the positive to the nucha. The contra-indications to the use of electricity are acute inflammations of the eye. With the idea of improving the nutrition of the nerve, he also treats these cases with massage using a massage cup connected with a Victor transformer and Pyncheon pump attachment: the vibrations should not exceed 150 per minute and better results were frequently obtained with a lower number. The contra-indications for the use of the massage are the same as those for the use of the electric current. Wurdemann reports a number of cases in which the results are certainly very marked but he is perfectly candid in acknowledging his failures. Cases of tabetic atrophy are among those which fail to record any improvement and he concludes that improvement or cessation of the loss of vision can only be hoped for in partial primary atrophy or that following papillitis. Some improvement seems to be gained in cases of retinitis pigmentosa and in toxic amblyopia.

J. W. S.

### Society Proceedings.

#### THE MONTREAL MEDICO-CHIRURGICAL SOCIETY.

*(Continued from last issue.)*

R. P. CAMPBELL, M.D.:—In reference to the question of treatment it is difficult to know what the future will decide as best in these cases; myself, if I had a kidney which showed a focus even as small as the smallest here, I would have that kidney removed. One must admit, however, that this does seem a very radical procedure, where so small a lesion is present. Nevertheless, there is always the danger, not only that the bladder may become involved, but that infection of other organs through the blood and lymph may occur. The question of partial nephrectomy does not seem to help us: in the cases where it might promise us something the difficulty is to find the focus of disease. In one case it was so concealed in a single calyx that it was only after careful pathological dissection that it was found, though it was severe and very active.

With regard to the question of operation hastening a generalized disease, I feel that in one case it may have had this effect, nevertheless, the only reply I would make is that the longer we leave the local lesion the more likely is the shock of operation to cause a generalized disease and the earlier the removal the less likely is this to occur.

The finding of tubercle bacilli on one side does not necessarily mean that the kidney on that side is affected. It is said that bacilli may be secreted by the kidney or the ureter may be affected. The functional

activity of the kidney will give us valuable information in cases where any such doubts may arise.

As to the question of the healing of bladder ulceration, cystoscopy, subsequent to nephrectomy, has been carried out in several cases where ulceration had been present. In two out of three cases, which at this moment I can recall, the ulcer had disappeared, in the remaining case it was much smaller.

The quantity of urine secreted by the bad side has frequently been diminished, in some cases is extremely small. In others, however, the amount of water has been increased and secretion somewhat more rapid on the affected side.

As to the freezing point of the urines this has been determined, wherever practicable, and I feel that it does give us valuable information and any additional information we can get in these cases is not to be overlooked.

#### VINCENT'S ANGINA.

A. H. GORDON, M.D.:—Read the report of this case.

#### CASE ILLUSTRATING SEMI-ERECT POSTURE IN PERITONITIS.

A. LAPHORN SMITH, M.D.:—Read the report of this case.

The sixth regular meeting of the Society was held Friday, December 20th, 1907, Dr. Wesley Mills, President, in the Chair.

#### HÆMORRHAGE FROM GASTRIC ULCER.

GEO. E. ARMSTRONG, M.D. Dr. Armstrong reported the case of a male, aged 47, who gave a long history of recurring hæmorrhages from a gastric ulcer. Twenty years ago, when in apparent health, he passed a large quantity of clotted blood per rectum, and fainted from weakness. At that time there was no vomiting of blood. No further hæmorrhage occurred for a year or two. During the succeeding five years he had two or three similar attacks, although the blood lost was in much smaller quantity. During this time there was no pain or digestive disturbance preceding or associated with the attacks of hæmorrhage. Then followed a period of fifteen years during which there was no hæmorrhage, and during which time he seemed to be in comparatively good health. On Thursday, the 7th of November last, he vomited a little altered blood, and the next day after dinner he vomited nearly a pint of blood. In this case the blood was not much altered, distinctly dark red and clotted. There was some abdominal pain. On the following day he was quite well, but on Sunday he

passed quite a large amount of blood, black and tarry in character. The next day he was admitted to the Montreal General Hospital. On Tuesday, at 5 p.m., he vomited a pint of red blood, which left him pretty weak and blanched and with a rapid pulse. At 8 o'clock that evening he again vomited what measured two pints of blood, which left him in an extremely critical condition with a pulse between 160 and 170, and with difficulty counted at the wrist.

I saw him afterwards, and it was extremely difficult to decide what course of treatment to adopt. It seemed almost certain that if any operative measures were attempted he would die on the table, and equally certain that, if left to himself, another hæmorrhage would prove fatal. I finally decided to attempt to arrest the hæmorrhage by finding the bleeding point and secure it, as this seemed really the only chance he had for his life. As soon as the stomach was brought into view, quite a large mass of cicatricial tissue was visible and palpable on the anterior wall of the stomach, three inches from the pylorus and just at the lesser curvature. I opened the stomach and from within my fingers entered a cup-shaped cavity about the size of a child's teacup, the neck of which was constricted and admitted the finger with difficulty. At the bottom of the cavity blood was seen oozing from a vessel large enough to admit the end of a small silver probe. The depth of the vessel, the mass of cicatricial tissue around it, and the hard base of the ulcer made it very difficult to close; I, therefore, very quickly excised the ulcer and closed the opening. The man made a perfect, quick and smooth recovery and left the hospital quite well, having gained in weight and colour and in strength. I am inclined to think that this same ulcer was the seat of the bleeding which occurred twenty years ago, and that it had persisted during all this time, causing but few symptoms until the large vessel was ulcerated through and the serious hæmorrhage occurred. The history does not always indicate the character of the ulcer. I have recently operated in three cases for the control of large gastric hæmorrhages. In two of these the hæmorrhages have come from the bases of hard, indurated ulcers, and in the third, hæmorrhages equally large in amount, and following an equally well-defined history of indigestion and gastric distress apparently coming from a surface half as large as the palm of my hand, the only change being a superficial loss of epithelium and a few sharply defined fissures. Cauterization of this surface was followed by a perfect recovery and no recurrence of the hæmorrhage, although this patient was blanched and had vomited large quantities of blood. In the autopsy records of the Montreal General Hospital are reports of cases having died from gastric

hæmorrhage in which the source of the bleeding could not be found at post mortem, and in which there was no leucocythæmia—no hepatic cirrhosis or dilatation of the œsophageal veins.

The present is the first ulcer that I have excised for hæmorrhage. In all the others I have been able to control the bleeding with some sort of suture, but here with a large vessel and inflammatory tissue round I felt that excision of the ulcer gave the best prospect of success.

F. R. ENGLAND, M.D.—I would like to ask Dr. Armstrong whether he thought this was the ulcer which has caused the hæmorrhage in the beginning.

G. E. ARMSTRONG, M.D.—There was no evidence of another ulcer during the hasty examination permissible at the time. The pylorus was free with no evidence of any old narrowing, and the adjacent part of the duodenum was quite soft and moveable, and presented no evidence of old ulceration. I think an ulcer of this kind must have been a long time in forming, and am rather of the opinion that the same ulcer had been present from the first, and that the earlier and later hæmorrhages were from the same source. It is not uncommon to find perforation of the stomach in a man who considers himself in fairly good health. In many cases during the six or twelve months preceding the perforation the stomach has been better than usual.

#### WANDERING OVARIAN DERMOID.

W. GARDNER, M.D.—The true nature of this tumour before operation was a matter of considerable doubt. In situation, size and mobility it reminded me of cases of malignant intestinal disease I have seen. On removal of the tumour its true nature was at once apparent. The next question to solve was how to account for a dermoid tumour wrapped up in folds of the omentum. It is a well known fact, as positively stated by Bland Sutton that dermoids have never been known to arise from any structure or viscus in the abdomen save the ovary. This fact and the further fact that the left ovary was absent from its normal position (there being only the stump of the left ovarian ligament remaining), made the diagnosis clear. A twisted pedicle which had snapped asunder, accounted for the tumour having wandered over to the right side, where the friendly offices of the omentum had kept it nourished. Adhesion of a detached and wandering tumour is, however, not necessary to prevent necrosis. Some years ago I exhibited to the society a fibroid uterine tumour, of the size of a large orange, which was found roaming about in the peritoneal cavity with absolutely no attachment, and yet showing no evidence of necrosis.

## INFANTILE SCURVY.

W. F. HAMILTON, M.D., read this, the paper of the evening.

JOHN McCRAE, M.D.—I would like to ask Dr. Hamilton's opinion with regard to the incidence of these cases where artificial food is administered, that is, the relative quality of different kinds of foods. In a statistical report Allenbury's has seemed to show the most cases.

KENNETH CAMERON, M.D.—About fifteen years ago, when in charge of the Montreal Foundling Hospital, the late Dr. E. P. Williams and I met with three cases of what we looked upon as infantile scurvy. They presented hæmorrhagic eruptions, enlarged ends of the bones and subconjunctival hæmorrhages, practically a picture of what we now know as infantile scurvy. None of us, at the time, recognized the condition, until I read an article just then published upon the subject, and we came to the conclusion that that was what we had to deal with. The children had been fed entirely upon Nestle's food, and upon changing it and giving them orange juice, all symptoms rapidly improved.

F. J. SHEPHERD, M.D.—The first case I saw was a good many years ago when sterilized food first came into fashion. I was called in to see a very young child with supposed hip joint disease; it had come on rapidly, and the joint was tender and swollen, slight movement being agony. The nurse directed my attention to the child's gums and immediately it brought to my mind the picture of scurvy in sailors which was often seen in my early student days. I recommended orange juice to be added to the food and in a very few days the child got well.

Dr. Gurd.—About ten years ago I experienced a rather curious method of diagnosing a case of scurvy. I overheard two ladies talking to each other about a third lady's baby, stating how very ill it was and giving the symptoms. I had just received my new edition of Holt and had read the chapter on Infantile Scurvy. I asked two or three questions of the lady about the gums and the painfulness on movement, swelling of the knees, etc., and I decided this was what ailed the child. I called up the family physician who was rather nonplussed by my action in telling him what ailed this infant. However, he invited me to see the child with him, and it proved to be a most beautifully marked case. It had been fed on Nestle's food, and this was immediately changed and orange juice given. That very night the child was more comfortable than it had been for three months. This case had been seen by one of our good physicians in consultation. The diagnosis made at the time was "an unusual form of rheumatism."

W. F. HAMILTON, M.D.—The discussion on this paper has proved what I felt to be true, that infantile scurvy is a rather common condition. Indeed, I believe it is comparatively common and many cases are regarded as rheumatism. I purposely left out the matter of

treatment as I know nothing about the chemistry of the condition. In this child's case the mother said the baby could not take cow's milk, but cow's milk in dilute form was given and orange juice as well, and in a few days she got better. What Allenbury's food contains or does not contain I do not know, nor can I state that the incidence of these cases is more frequent where this food is administered than with others, but I always recommend it for a time to children who cannot take cow's milk, and have never seen any bad results.

#### RIB FRACTURED WHILE COUGHING.

D. F. GIRD, M.D.—On the 25th of November last I was called to see Mr. L., who was said to have broken something in his side. I found him suffering great agony, especially when he coughed, which he had to do frequently, owing to an attack of subacute bronchitis with free expectoration. It was very evident that a rib had been broken, as in inspiration preparatory to coughing one could hear the ends rubbing against each other even when standing two or three feet away—and with the fingers over the part could feel them being displaced.

The seventh rib on the left side was broken on a line with the anterior axillary border.

The man is 43 years old, very large, 6 feet 2 inches in height, and weighs over 250 lbs. He used to be very muscular, was a boxer and gymnast, but of late had put on fat, though is still a very strong, active man. While undressing and in the act of pushing off with his left hand the suspender from shoulders, he was seized with a cough, and immediately he felt something give way in his side accompanied with, and followed by, most severe pain. For a few days he suffered greatly in spite of careful strapping of that side of chest. His bronchitis got perfectly well in about a week when his side gave him very little further pain.

As with "tennis arm" and "rider's cramp," here, we have a bone fractured not so much by an extra muscular effort as by a want of co-ordination of the muscles—that is, a greater strain than usual is put upon a certain muscle or part of a muscle, producing in the case of rider's cramp and tennis arm a tearing away of a portion of a muscle from its attachment, and in this case such a local strain as to break the bones.

Books on surgery remark that ribs may be broken by muscular action during coughing or sneezing, or even parturition, but on making enquiries amongst my surgical friends, I found that none of them had ever seen a case.



## ACUTE PURULENT MENINGITIS IN A YOUNG INFANT.

J. C. CAMERON, M.D.—Dr. Oskar Klotz read the report of this case.

*Post mortem*:—Body that of a poorly nourished female infant, 43 cm. long. There was general lividity of the body, particularly over the abdomen. External orifices normal. Reddish discoloration of buttocks. There was no petechial rash, nor blotches on the skin.

*Head*:—Scalp was negative. On removing the scalp, there was found, externally, congestion of the post. halves of the parietal bones and the upper half of the occipital bone, as if the remains of an external hæmatoma. The dura mater showed no change, externally. The vessels of the pia-arachnoid were everywhere injected, but chiefly along the vessels over the base of the brain and the cerebellum and those in the longitudinal sulcus. Following the vessels over the superior surface of the brain were diffuse purulent areas. The pia-arachnoid dipping down into the longitudinal sinus was clear of pus. There were also diffuse purulent tracts following the vessels over the sylvian fissure, and over the temporal lobes: this was quite marked. The base of the brain extending from the optic chiasma back to the cerebellum, also, showed this diffuse purulent inflammation. There was, also, an area of pus between the inferior portion of the cerebellum and the medulla. Middle ears were healthy.

*Cord*:—On exposure of the cord one could see that the whole of its surface was injected. Stripping up the dura mater this was found to be clear and it was the vessels of the pia that were congested. Diffuse purulent areas were found along the whole length of the cord, chiefly along its sides and posteriorly.

A. D. Acute Purulent Meningitis, (Probably Epidemic). Acute Gastro-Entero-Colitis. Patent F. O.

*Notanda*:—The case was very interesting in demonstrating an acute meningitis in an infant eight days old. Unfortunately the post-mortem was obtained only on the third day after the death of the child, and the definite bacteriological diagnosis of the infection could not be made out. The presence, however, in the meningeal exudate of Gram-negative diplococci, appearing both intra and extra-cellular, and having the appearance of meningococci is very suggestive of the infection being one of the epidemic variety. Coupled with this is the negative evidence of any pyæmic foci elsewhere, and of the healthy nature of the middle ear cavities.

### BACTERIOLOGICAL.

Pus from meninges of Brain:—The direct smear showed many pus cells. There were also many bacteria of different kinds:—Gram negative bacilli. Gram negative diplococci,—a few intra-cellular, and of the appearance of meningococci.

(To be continued.)