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ANIMAL TUBERCULOSES  
AND THEIR RELATION TO HUMAN HEALTH.

BY

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There is no disease known which is so widespread as tuberculosis, and none which affects so many species of animals or has greater economic importance. In consequence of this, it has been well termed the "universal panzootic." Although this fact is known to many of you in general terms, I imagine it will surprise some of you to read a list of the animals in which the disease has been observed. It is found in cattle, sheep, horses, goats, monkeys, dogs, cats, birds, dromedary, camel, giraffe, zebra, alpaca, axis deer, Virginia deer, lion, tiger, panther, jaguar, jackall, leopard, polar fox, coati, paradoxure, bear, tapir, llama, antelope, fish, snakes and turtle.

Many of these animals just mentioned are not affected in the natural state, but the disease has been observed in them in zoological gardens. It is the cause of tremendous losses to all such institutions. In certain gardens it is necessary to restock the monkey house every two years. In other words the average life of the monkeys is only two years. You can realize the expense incurred from this item alone. The majority of the animals mentioned have no distinct bearing from a public health standpoint, but are of great use to us in studying the character of the disease and the relationship that exists between the disease as it occurs in different species of animals. From these studies we are enabled to deduce conclusions in regard to mankind. The principle species in which we are concerned of course is the bovine, which is practically

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Read before Canadian Association for Prevention of Consumption and other  
forms of Tuberculosis, April 20th, 1904.

the only one in our country used for food, and the question resolves itself into a discussion as to whether bovine tuberculosis is transmissible to mankind through the meat and milk of tuberculous animals.

Lænnec, in 1814, first taught the unity of tuberculosis. He was opposed by Virchow whose authority carried practically every one with him. In 1865, Villemin first showed that the disease could be transmitted from one animal to another by inoculation and reached the necessary conclusion that wherever seen it had the same origin and the same cause. In spite of this, opposition to his views was kept up until the announcement by Koch of the discovery of tubercle bacillus in 1882. Koch showed that for all animals examined there was only one cause for the disease, namely, the tubercle bacillus. Following this the profession and the public in general was practically in unison in the belief that bovine tuberculosis was dangerous to human health. In 1896, Dr. Theobald Smith showed that there were certain differences between the tubercle bacilli found in man and those found in cattle. He did not, however, draw sweeping conclusions from this and still taught the close relationship of the two. In 1901, Koch having repeated these experiments, announced at the London Congress of Tuberculosis conclusions which were contrary to all opinions held up to that time, and he aroused a storm of opposition. He held that the disease as seen in animals was entirely different from that of mankind, and that it is impossible to transmit the human disease to cattle. On the other hand, he held that if human beings were ever infected from cattle it was a very rare occurrence, so rare indeed that it could practically be left out of consideration in formulating methods for the prevention and eradication of the disease.

**STUDY OF TUBERCLE BACILLI.** Study of cultures of the tubercle bacillus isolated from various types of tuberculosis in man and in animals has not yet shown differences which enable us readily to determine the origin of a given culture. The most marked and constant difference is the greater pathogenic power shown by the bovine bacillus for all experimental animals which have been used, with the possible exception of swine, which in my experience have proved so very susceptible to both races that it is hard to draw a distinction between them. Koch, however, includes swine among the animals which show a much greater susceptibility to bovine cultures than to those from human sources. The list of animals for which this greater susceptibility has been shown is a long one, including horses, cows, asses, goats, sheep, dogs, cats, rabbits, guinea pigs, and our nearest relative, the monkey. The result is the same by every method of inoculation tried. It would then be a most remarkable and anomalous circumstance for

man, who is one of the most susceptible of all animals, to be immune, or even strongly resistant, to the most virulent race of tubercle bacillus yet discovered. It has most certainly not been shown that man possesses this immunity, and no one has been able to discover any special means of defense in the human body against the bovine tubercle bacillus. Until this is done we are bound to believe that, in common with all other mammalia, he shares this susceptibility to its ravages.

**ACTION OF TUBERCULIN.** Further proof of the identity of the tubercle bacilli found in different species of animals is given in the fact that tuberculins made from these different cultures have the same effect on animals.

**IMMUNIZATION.** Within the last two years very conclusive proof of the identity of bovine and human tubercle bacilli has been given in the work of von Behring, Pearson and Gilliland, Thomassen, Nocard, Neufeld and others. It has been shown by these workers that it is possible to render cattle immune to bovine tuberculosis by injections of small doses of the human bacillus. All of our studies go to show that the production of immunity is specific in its character, that is to say, it is possible to immunize an animal against a certain disease only by a vaccine which is related closely to that disease. Hence it follows that it would be impossible to immunize cattle against bovine tuberculosis by inoculation with the human bacillus unless these two organisms were essentially the same.

**VARIATION OF VIRULENCE.** While it has been shown conclusively that a greater pathogenic power is the most marked distinguishing characteristic between the bovine and the human bacillus even this is not constant. You will recall, however, that Koch, in 1901, held that this difference in virulence gave us a sure method of diagnosis between the two races. If the culture had power to cause general infection in cattle it was then certainly of bovine origin, while failure to do this proved it to be human. Replying to this Prof. McFadyean said: "If a low degree of virulence for cattle is to be taken as the distinguishing feature of human bacilli there will be no difficulty in proving that the disease is sometimes transmitted to the lower animals."

Confirmation of this has recently come from the Tuberculosis Commission appointed by the Imperial Sanitary Office of Germany. Kossel, in his preliminary report says that among seven cultures examined by them, four of which were isolated from cattle and three from swine, one was found which caused only infiltration at the point of inoculation, with some caseous foci in the related prescapular gland, and in one mediastinal, but without the generalization usually seen following in-

oculations of bovine bacilli. He concludes, that "among bovine tubercle bacilli there can also occur differences with regard to virulence." Koch and his followers are very active in making discoveries which have been known elsewhere for a long time.

TRANSMISSION FROM MAN TO ANIMALS. In spite of Koch's denial of all possibility of infecting animals with human tuberculous material, this has been done by numerous workers. The first of these was Chauveau, who, in 1868, succeeded in infecting young cattle by ingestion by intravenous inoculation, and by subcutaneous inoculation. Tuberculin had not at that time been discovered, but Chauveau foresaw the objection that might be raised, namely, that his experimental animals were infected with tuberculosis at the time the experiment began, and to avoid this selected them from the Jura mountains, where tuberculosis was unknown. Bollinger, in 1879, was the next to succeed in infecting cattle with the human bacillus. Other successful experimenters, Crookshank, Kitt, Sidney Martin, Thomassen, Nocard, DeJong, Arloing, Westenhoffer, Max Wolff, Schottelius, Febiger and Jensen, Hamilton and Young, and at the laboratory of the State Live Stock Sanitary Board of Pennsylvania we have succeeded a number of times in the same thing. I will only mention one of these experiments, that of Hamilton and Young, which has been recently published. In their work 19 calves were inoculated by different methods with human material, and of these 15 developed tuberculosis, while four resisted. The diagnoses in the cases of these animals was made by macroscopic as well as microscopic examination, and also by re-inoculation of guinea pigs from the tissues.

PATHOGENIC ACTION OF THE BOVINE TUBERCLE BACILLUS FOR MAN. Accidental inoculations in the laboratory and in post-mortem work on cattle have given us some opportunity of observing the effects of the bovine tubercle bacillus on man. I have reported four such cases, all of which resulted in the formation of typical lesions which required excision before healing took place. In two of these cases the bacillus was isolated and studied, excluding the possibility of infection from human sources. In one instance the recovered organism was compared with the original culture. A number of similar cases are on record, among which are those reported by Krause, Spronk and Hofnagle, Lassar, Tscherning, Pfeiffer, Hartzell, Kurt Muller, DeJong, Joseph and Trautman, and Troje. A common feature of all of them is their resistance to treatment, final cure resulting only after radical excision. In the case recently reported by Troje, which seems to be free from the objections usually raised, infection extended up the arm, and two years after the

original injury had involved the glands of the axilla and sub-clavicular space. In a few instances general infection and death is reported to have followed these accidental inoculations, but the evidence is not entirely conclusive. A careful study of these wound infections, and comparison with similar infections with human tuberculous material, shows that the bovine bacillus grows well in the human body under the most unfavorable circumstances producing typical lesions, and that it shows for man at least as great pathogenic power as the human bacillus under identical circumstances. As the skin is known to be the most unfavourable tissue for the tubercle bacillus, we are justified in holding that organs and tissues which are known to be favourable soil for the growth of the human bacillus will prove equally favourable for the bovine organism.

CLINICAL OBSERVATION. Clinical studies have not given us a great deal of aid in the solution of the question before us. We have, however, some 38 cases on record in which the evidence is very strong and convincing, such as those recorded by Stang, Demme, Gosse, Ollivier, Law, Ebers, Bang, Klebs and Rievel, and von Ruck. All of them are open to the same criticism, as it is plain that all other sources of infection have not been excluded with certainty. This objection will always apply to clinical observation to a greater or less extent, but I do not consider that it is fair to exclude them on this account. With respect to other diseases such as typhoid fever, diphtheria and scarlet fever, we constantly accept without question evidence which is not nearly so strong as that which we are asked to reject when tuberculosis is concerned. Much of the evidence on which the general belief in the respiratory invasion of tuberculosis rests is lamentably weak. If we question the accuracy of these cases in which death has followed accidental inoculation, or those other cases where milk from tuberculous cows appears to have been the cause of the disease, for the reason that all other sources of infection have not been excluded, we should apply the same strict methods of examination to those cases in which infection appears to have taken place through the respiratory tract and by exposure to the human disease. This has not generally been done. In our clinics and hospitals it is the rule to question the patient as to his or her family history, and if the answers show exposure to another case of phthisis the source of infection is considered as demonstrated. No effort is made to exclude the use of tuberculous meat and milk, even if it were possible to get reliable data concerning these facts. In this way has the great mass of our statistics concerning infection in tuberculosis been collected. The belief generally held that dried and

pulverised sputum is the general infecting material is largely theory. It is supported by very little experimental evidence, and no exact clinical evidence that I am aware of. Do not understand me to say that I disbelieve these teachings, for I do not; but I protest that Koch and those who follow him in disregarding the importance of bovine tuberculosis in relation to the human disease set up a standard of accuracy for their scientific opponents which they themselves do not honour.

**PRIMARY INTESTINAL TUBERCULOSIS.** Those who doubt that tuberculous food products play any considerable part in the causation of human tuberculosis base their opinion mainly on the alleged rarity of primary intestinal tuberculosis. Koch says, "that a case of tuberculosis has been caused by aliments can be assumed with certainty only when the intestine suffers first, that is, when a so-called primary tuberculosis of the intestine is found." It requires but little thought to see how misleading this statement is. It leaves out of consideration infection through the tonsils and upper digestive tract, and recent experimental work proves that no such dogmatic statement can be made.

**PASSAGE OF TUBERCLE BACILLUS THROUGH HEALTHY INTESTINE.** As long ago as 1890, Dobrokionski, working under Cornil, showed that the tubercle bacillus can penetrate the wall of the intestine of some animals without causing any demonstrable lesion, and that it does not require long to do so.

The late Prof. Nocard observed that if he drew blood from horses at certain periods of digestion, the serum would become contaminated even if divided into small lots of 100 c.c. On the other hand if the bleeding was done during fasting, the serum would be preserved in litre flasks without loss. In seeking an explanation of this phenomenon, two of his students, Desoubry and Porcher, found that the chyle of dogs fed with soup containing considerable fat showed many colonies of bacteria when plated. When a plain bouillon without grease was given, the chyle was free from bacteria. Nicolas and Descos have shown that practically the same thing holds true for the tubercle bacillus when ingested with fat. During the winter of 1902-1903, I made similar experiments at the laboratory of the State Live Stock Sanitary Board of Pennsylvania. The method was as follows:—After keeping a dog under observation for some days to make sure that it was healthy, a purge of castor oil was given in order to rid the intestine of any substance which might injure the mucous membrane mechanically. At the end of this time a single meal consisting of equal parts of warm water and melted butter made into an emulsion, into which

tubercle bacilli were stirred, was given. The dog was killed after  $3\frac{1}{2}$  to 4 hours, during active digestion, and as much chyle as possible collected, together with the mesenteric glands. With this material guinea pigs were inoculated. In eight out of ten dogs it was found that tubercle bacilli had passed through the intestinal wall, and from the extent of the lesions found in the guinea pigs I feel justified in saying that the bacilli had penetrated in large numbers. In every case the entire intestinal tract of the dogs was carefully examined, and in two, microscopic sections were made from several portions of the gut. In no case was any lesion found. These experiments prove that tubercle bacilli can easily penetrate healthy mucous membrane without leaving any trace of their path.

When we remember how directly the chyle passes up the thoracic duct and is thrown into the venous circulation near the heart, from which it passes immediately to the lungs, it does not seem unreasonable to claim that an infection through the intestine may first show itself in the lung, or at least that the lesion in the lung will be so nearly contemporaneous with that of the intestine that it will be impossible to say which is primary.

I show here photographs of the intestines and lungs of two monkeys which were infected by feeding with pure cultures of tubercle bacillus in a series of experiments on the comparative virulence of the human and bovine organisms. In both the lungs are extensively diseased. We were unable to find any lesion whatever in the intestine of one and in the other (A 45007) there was only a slight lesion with caseation of three glands in relation to the upper portion of the tract. In this animal there was, however, enlargement and caseation of the cervical lymph glands, pointing to invasion through the tonsils or pharynx.

If these two specimens were shown without their history most pathologists would pronounce them cases of respiratory infection, yet they were kept under conditions which precluded this possibility, and were tested with tuberculin before the experiment began. May not these experiments explain many of those numerous cases seen in children in which pathologists are unable to decide the mode of invasion? In the series of autopsies reported by Northrup, in 34 out of 135 cases he could not determine the portal of entry.

**INFECTION THROUGH THE TONSILS.** The numerous observations made of late years leave no doubt that the tonsils sometimes act as the port of entry for the tubercle bacillus. As it is well put by Baup, "discussion is only possible as to the greater or less frequency of these lesions, and their pathological importance," a position sustained not only by

the work of other observers but by his own, in which he examined the tonsils from those cases only in which tuberculosis of the lungs was absent and other ports of entry could be excluded. Dieulafoy, by the inoculation of guinea pigs, found tuberculosis in fifteen of ninety-six cases. Latham, who was careful to employ only the interior portions of the tonsils, in forty-five consecutive cases of children from three months to thirteen years of age, seen at autopsy, found seven which were tuberculous. One of the most recent studies of this subject is that of Friedmann, who examined the tonsils obtained from ninety-one children at autopsy and fifty-four cases removed by operation, all but one of the latter under five years of age. Of the ninety-one cases, in three there was tuberculosis, probably not primary; in five there was tuberculosis, probably primary, with secondary involvement of lymphatic glands, intestine, and bone; in one, the tonsils showed many tubercles, giant cells, and tubercle bacilli, the rest of the body being free; in seven (two with and five without tuberculosis) no bacilli could be demonstrated; in three, giant cells attributed to other causes were found; in eleven, which showed extensive tuberculosis of other parts of the body, the tonsils were free, but showed scars; in four the tonsils were free, there being tuberculosis of the internal organs; in three, bacilli were demonstrated in smear proportions, though no tubercles were found. In the remaining fifty-four cases tuberculosis was not found in any part of the body. Only one of the operative cases showed primary tuberculosis.

**POSTMORTEM STATISTICS.** Postmortem statistics are of great value to us in showing the possibility of infection by tuberculous material used as food. In England only there is great uniformity in the results. Guthrie, at the Children's Hospital, Paddington, says that 24.6 per cent. of the cases examined by him showed the primary lesions in the intestine; Still at the Great Ormond Street Hospital for Children found 23.4 per cent. of primary intestinal tuberculosis, while Shennan at the Royal Hospital in Edinburgh found 26.1 per cent. Koch has told us that intestinal infection is very rare in Germany. Against his opinion Hueppe estimates that in children the primary lesion is in the intestine in from 25 to 30 per cent of all cases. Exhaustive statistics have been recently published by Hof of Kiel, who has collected the data of 15,000 autopsies done in that city. There were found 936 cases of tuberculosis in children. Among these 235 or 25.1 per cent. showed the primary lesion in the intestine, and 527 or 56.2 per cent. showed the primary lesion in the respiratory tract. This corresponds very closely with the figures given by almost all English observers. More surprising even is

the fact that of 2,697 cases of tuberculosis in adults 159 or 5.9 per cent. showed the primary lesion in the intestine. While statistics on this point are not uniform in the different countries of the world, or even in all parts of any given country, they show conclusively that tuberculous food plays a considerable role in the spread of tuberculosis in children, and possibly also in adults, although children are by far the most vulnerable to infection through this source.

**ISOLATION OF BOVINE TUBERCLE BACILLI FROM HUMAN LESIONS.** The most direct and positive proof that bovine tuberculosis is responsible for a certain amount of tuberculosis in man is given by the finding of the bovine bacillus in human lesions. With this object in view I began, in 1900, to look for cases of intestinal tuberculosis in children as those most likely to be caused by the bovine bacillus. In June, 1901, I succeeded in isolating from the mesenteric glands of a child sent to me by Dr. Alfred Hand, from the Children's Hospital in Philadelphia, a culture which has been designated BB. This culture showed a most intense virulence for cattle, killing two calves in 17 and 27 days respectively, and a six year old cow in 17 days. Excepting in the first generation, when some irregularity of staining was noticed, this culture has always shown every characteristic of the bovine tubercle bacillus, and must be regarded as having come directly from cattle. I have since isolated two other cultures from mesenteric glands of children which have unusual virulence. Culture U was considered an ordinary human culture until it was used in some feeding experiments on dogs, when it showed such unexpected virulence that I inoculated a calf with it. The animal was killed after 46 days, as it was moribund. The autopsy showed a general infection.

Recently I have obtained another culture which lies between BB and U, which I consider bovine. It produces general infection and death in rabbits on subcutaneous inoculation and killed a calf weighing 255 pounds in 35 days. The late Dr. De Schweinitz isolated the bovine tubercle bacillus twice from intestinal lesions in children, and Dr. Theobald Smith has found it once in such cases. In Europe, Febiger and Jensen report having found it three times, and Kossel speaking for the German Tuberculosis Commission, tells us that out of 16 children examined, four proved to have been infected by the bovine tubercle bacillus. Two of these four cases are described as "miliary tuberculosis," one starting from a bronchial adenopathy, and the other from a mesenteric adenopathy. The remaining two were intestinal tuberculosis. It appears from this that even those cases which show the primary lesion in the bronchial glands and are considered to be so cer-

tainly of respiratory origin, may be caused by the bovine tubercle bacillus.

When a Commission which is evidently doing its best to sustain Koch has to acknowledge that 35 per cent. of the children examined by it show lesions due to the bovine tubercle bacillus it seems time to abandon the doctrine that tuberculosis of cattle has little or no effect on human health.

It appears to me that the case might well rest on the positive evidence afforded already by the discovery of the bovine germ in children.

FREQUENCY OF BOVINE INFECTION. I will not attempt to say what proportion of children die of bovine infection. If I have sustained my contention that the two diseases are essentially the same and intercommunicable, it is evident that the number of children in any given locality who become infected from bovine sources will vary directly with the prevalence of tuberculosis in the cattle of that district and with the extent to which unsterilized milk is used as food.

In order to determine the percentage of children who derive their infection from cattle it would be necessary to isolate from a large number of those who died from tuberculosis the offending organism, and to determine its origin. The cost of this is prohibitive for private laboratories, and it must be undertaken at the public expense if done at all. The findings already published are too few in number to form the basis of an estimate, but they show conclusively that it is not a rare occurrence to find the bovine tubercle bacillus in the lesions of children. The German Commission found it in four out of sixteen cases examined; De Schweinitz twice in four cases; Theobald Smith once in five cases and at the laboratory of the State Live Stock Sanitary Board of Pennsylvania, I have found it in two out of five cases. Febiger and Jensen have found it in three instances.

EXTENT OF TUBERCULOSIS IN CATTLE. I will not weary you with an array of statistics showing the prevalence of bovine tuberculosis. It is well known to be a scourge, and to be especially prevalent in milch cows of the herds on the dairy farms near large cities,—at least this has been the case in the past, to a great extent. The introduction of certified milk has had a wide-spread educational effect, and has done much to better the condition of many herds, directly as well as indirectly.

I hold strongly to the opinion that it is not only the cow with tuberculosis of the udder that is dangerous, though this is no doubt an especially perilous condition. Dilution with the milk of healthy cows un-

doubtedly lessens the infectiousness of such milk but cannot make it safe. Dr. Theobald Smith showed, in 1893, that the tubercle bacillus could be found in the milk of tuberculous cows, when the udder was free from disease, so far as the naked eye could tell. In a series of experiments with the mixed milk of five cows which reacted to tuberculin, but were in good physical condition, I found it infectious for 15.8 per cent. of the guinea pigs inoculated. No attempt was made to concentrate the bacilli; on the contrary, the whole quantity of the milk was well shaken in order to imitate natural conditions. No lesion of the udders could be found during life or after death of the cows.

Rabinowitsch and Kempner found that ten out of fifteen cows, which reacted to tuberculin but showed no evidence of udder disease, gave milk containing tubercle bacilli. They conclude that "milk may contain tubercle bacilli; first, in beginning tuberculosis, without discoverable disease of the udder; and, second, in latent tuberculosis that can be detected only by the tuberculin reaction;" also, "milk from cows that react to tuberculin must be suspected of being infectious in every case."

**CONCLUSION.** At the present time the weight of the available evidence is in favour of the view that the chief source of infection in children, as well as in adults, is the human tubercle bacillus, and that the portal of entry is the respiratory tract. It has, however, been proven conclusively that the bovine tubercle bacillus is responsible for a certain proportion of the deaths from tuberculosis in children, and there is strong evidence at hand to show that the number of children infected from bovine sources is quite large. Whether the number be large or small, it is none the less our duty to guard against the use of milk from tuberculous cattle for food.

It is without question most important to build sanatoria for the treatment and cure of early cases of tuberculosis; to form societies which spread information concerning the disease and its prevention to the sick and well alike; to build hospitals for hopeless and dying cases, in order to remove them from their homes at the period of greatest danger to those around them; to pass laws against promiscuous spitting; to regulate ventilation and over-crowding of tenements and factories; to encourage good living amongst the masses in every way possible. All of these things are useful and necessary, but we will still fail in doing our whole duty, if we neglect to guard against food products from tuberculous animals and to make every effort for the eradication of tuberculosis from cattle.

# TUMOURS OF THE RIGHT ILIAC FOSSA.

BY

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The abdominal cavity, to my mind, is a deceitful surprise-box, and an interesting novel could be written dealing with the analysis of the varied emotions which this region of the human body causes every day to the surgeon. One thinks he has to deal with an ovarian cyst and comes upon tubercular peritonitis; we look for what we thought to be a biliary calculus and we find tumour of the pylorus; an abdominal section is made to remove a fibroid of the uterus and we are suddenly face to face with a foetus which stretches out its hand; we expected to find appendicitis, it is pyosalpinx or ectopic gestation.

And this interesting abdomen is not content with humiliating us in a general way; through the most refined cruelty it keeps set apart a small corner of predilection where the most Bonapartist clinician is bound sooner or later to find his Waterloo.

That little corner is the ileo-cecal region, contained in a triangular space whose extreme boundaries are, internally from the umbilicus to the symphysis and externally, Poupart's ligament and the anterior superior spine of the ileum.

We are consulted by a patient bearing a lump in the right iliac fossa; the lump may be hard or soft; at times accompanied with temperature, at other times entirely apyretic. In certain cases, it is a painful tumefaction, in other cases, the tumour is indolent. What is the origin, what is the nature of that lump? I know perfectly well that there are cases where the diagnosis is extremely difficult if not impossible, notwithstanding all the means brought into use to arrive at it, but still we must confess that frequently errors are committed owing to the carelessness exhibited by the physician in the research and the analysis of the symptoms.

In order to recognize the nature of a disease, it is not indeed sufficient to lend a more or less attentive ear to the very often inaccurate relation which the patient makes of his sufferings; it is absolutely necessary to control his tale of woe by a well directed interrogatory and a methodical interpretation of the facts which he brings to our knowledge. The objective examination should be carried out in a systematic manner and we must never hasten to jump too soon at a conclusion, always bearing in mind that exceptions to general rules are numerous. Symptoms apparently similar may belong to very different

affections, but their characters are never entirely identical and it is of the greatest importance that we should endeavour to discriminate the various shades of their signification. An epigastric pain does not always mean cancer of the stomach; constipation and vomiting are not in every case the signs of intestinal obstruction; and again, a patient coming to us with fever and a painful lump in the right iliac region may suffer from anything else than appendicitis or cancer of the intestine.

Very frequently it is only by the considerate attention paid to the complaints of the patient, the careful examination of the objective signs, the analysis of each symptom in particular and the study of the group to which they belong, and lastly, by the exclusion of other pathological conditions that we shall be enabled to protect ourselves against those errors, always prejudicial to the patient and oftentimes disastrous for the surgeon's reputation.

*Omnis homo mendax et errare humanum est.* This axiom should remain engraved in every one's memory to impose upon us the obligation to curb our pride, reminding us that there is a thing or two which we have yet to learn with regard to the diagnosis of diseases. But, the difficulties of the matter must not take away from our mind all hopes of arriving at the truth, provided we surround ourselves with necessary precautions, and, if physicians, in every instance, would use the circumspection dictated by their duty, errors indeed would be far less frequent, and, at any rate, we would certainly never hear, as recently came to my knowledge, of a senile gangrene of the foot being taken for an attack of gout.

However, in spite of all, there are unfortunately cases, in which we are bound to be led astray, and it is with this thought that I undertook the writing of this paper, which will demonstrate the difficulty at times in determining the nature of tumours situated in the right iliac fossa.

It seems that all the affections which constitute abdominal pathology have chosen as rendez-vous this privileged region of the human body. Let us, for instance, exclude inflammations of the appendix with all varieties and their complications, and also, in women, the diseases of the appendages, such as hydrosalpinx, pyosalpinx, ovarian tumours, ectopic gestation, that is, the affections of the organs which are really at home there and betray their sufferings by manifestations in the region we speak of. We might now be tempted to believe, I fancy, that there remains but very few diseases liable to produce a tumour in the right iliac fossa. Well, I will only cite some of them; stop me,

if you find the enumeration too long; psoas iliac abscess; abscess arising from the vertebral joint; abscess from the ilio-sacral joint; chronic interstitial myositis; prececal suppurating adenitis; retro-peritoneal, retro-colic suppurating adenitis; gangrenous or tubercular omentum; cancer of cœcum; cyst of the mesentery; enterolith of the cœcum; hypertrophic tuberculoma of the intestine; hypertrophic ileo-typhlitis due or not due to stenosis of the gut; ileo-colic intussusception; foreign body of the ileum; perityphlitic abscess with integrity of the appendix; tubercular peritonitis; cancerous peritonitis; cholelithiasis; ureteral calculus; perinephritic abscess; floating kidney; certain varieties of hernia; osteo-sarcoma of the iliac bone.

These facts, you know as well as I do, and I merely wish to recall them to your memory. Nor have I the intention of dwelling upon the symptoms proper to these varied pathological conditions which the teachings of text-books as well as your personal experience have rendered more or less familiar to you. I only wish to relate a certain number of observations, where the differential diagnosis offered particular difficulties, especially between appendicitis, cancer of the cœcum and other abdominal affections.

For the last few years, the medico-chirurgical atmosphere seems loaded with appendicitis, and a tumefaction no sooner appears in the region which is about to immortalize the name of McBurney, than the diagnosis of appendicitis is immediately proclaimed. The number of those who have been mistaken in this respect is incalculable, and if you open the *Annals of Surgery* of June, 1902, you shall find an interesting article written by Spellissy, in which this author has gathered 194 cases of affections situated in the right iliac fossa with lesions of twenty varieties of structure and 68 species of lesions, not one of the numbered cases of appendiceal origin, and all so mistaken.

If in certain cases, the error can be avoided, it is unquestionable that sometimes, special circumstances contribute to render the diagnosis extremely difficult.

I was one day called in consultation to see an unmarried lady aged 41. To this extended virginity, she could boast of being able to add that of no therapeutic treatment whatever: she had never been ill in her life. Tall, robust, admirably built, the utero-ovarian functions had always been absolutely normal. She never had any menstrual suppression; no metrorrhagia; no dysmenorrhœa; no leucorrhœa.

A few days previous to my visit, after an afternoon of shopping, she experienced quite a severe pain in the right iliac fossa, went to bed and suffered all night. The next day, the family physician was called

in and prescribed hot fomentations. In the evening, the temperature went up; pains, always severe, were paroxysmal. During the night, vomiting appeared and continued all next day. For five or six days, the symptoms remained the same; spontaneous pain was quite severe, the right side of the abdomen was tender on pressure, and the temperature reaching 102 in the evening. Eight or ten days after the onset of the disease, the physician noticed in the right iliac region, the presence of a semi-fluctuation tumour and, being naturally convinced that an abscess had developed about the appendix, the patient was brought to Ottawa for operation.

Examination:—At the outer extremity of a line drawn from the antero-superior spine to the umbilicus, a large bulging was seen, three or four inches in all its diameters; fluctuation was evident.

Although the characters of this abscess appeared to me somewhat unusual, owing to its dimensions and the rather high situation compared with that of purulent collections due to appendicitis, I lent little importance to these irregularities and I decided to operate.

Incision at the base of the tumour was made; the skin, muscles, fascia and finally the peritoneum were carefully divided. The dark brown wall of the collection appeared, the knife was plunged into it. Not a drop of pus followed, but a stream of limpid serous fluid squirted out; 18 ounces were withdrawn. It was a cyst. I immediately seized its wall with a clamp and proceeded to separate the adhesions, soft, recent, which united it to the peritoneum. I then looked for the pedicle, but the latter seemed to be so low down that I decided to make another incision in the median line, in order to be in a better position to see what I was doing. The abdomen rapidly opened, I made a new exploration. To my great surprise, I fell upon a multitude of fibroids with which the uterus was literally studded. The cyst proved to belong to the right ovary and was adherent to the intestines, the pelvic floor and the abdominal wall. The whole thing was removed; uterus and appendages, and this operation, begun for the mere opening of an abscess, terminated in an abdominal hysterectomy.

And the appendix? It is true, I forgot that. Well, it was entirely normal, not even a trace of the least emotion. I considered the risks which had just threatened its existence as a well deserved appeal to my clemency and I left it in the abdomen.

I humbly confess that, in this case, a thorough examination might have permitted me to avoid a mistake. A vaginal examination would surely have allowed me to detect the presence of the uterine tumours. However, without trying to minimize the extent of my error, I beg to

claim the benefit of extenuating circumstances. I always hesitate to examine the vagina of virgins. Besides, nothing in this case had caused me to suspect the existence of a neoplasm in a woman who never had any metrorrhagia, never had any pain previous to the present illness, never noticed any abdominal development, the length of the pedicle allowing the largest of the uterine tumours to treacherously conceal its presence under the promontory.

And again, why this elevation of temperature? I know perfectly well now that it was most likely due to partial peritonitis as shown by the adhesions found between the cyst and the peritoneum, but, adding this fever to the tumefaction in the iliac fossa as well as to the other symptoms, could I think of anything else than peri-appendiceal purulent collection?

Finally, that cyst, instead of remaining at home and simply satisfied with raising the abdominal wall, as ordinarily do honest tumours of that kind, through what whimsical fancy did it deem proper to cunningly crawl along the rectus, hiding its dulness under the distended intestinal coils? Merely to lead me astray and inflict on my pride the most cruel humiliation.

In short: towards the utero-ovarian organs, negative symptoms. Positive and classical symptoms towards the appendix, accompanied with a tumour in the iliac fossa; inevitable result: phenomenal error of diagnosis.

During the month of July, I was called outside of the city to see in consultation a small sized woman, aged 27. She had been married two years and had a living child twelve months old. She had always been in good health with the exception of a coxalgia which occurred during her infancy and left her with the right inferior limb shorter, the foot in adduction.

She was three months pregnant and, three days before, she had had diarrhœa during a whole night. Feeling better the next day, she ate at dinner a gigantic cucumber. Two or three hours after, she was taken with excruciating pains in the right side of the abdomen. She rejected a part of her meal, less the cucumber which persisted in remaining inside.

The pain and vomiting continued until the evening, when a physician called, administered hypodermic injections of morphine. The pains were not relieved, the patient took to bed and had been suffering ever since. Incessant nausea and frequent vomiting prevailed. An obstinate constipation supervened and yielded only to reiterated purgatives.

I asked the family physician to give me his opinion concerning the

case. "I thought at first," said he, "of indigestion, but, yesterday, I noticed quite a tumefaction in the right iliac region and I concluded that it must be a perityphlitis."

Outside of large centres, the fashionable appendicitis is still comparatively unknown; the people have remained faithful to the *inflammation of the bowels* of yore, which the rural physician, more learned, willingly calls typhlitis, peri-typhlitis and really, can we say that they are always wrong?

At any rate, the assertion of my confrere brought in a new support to the conviction already fixed in my mind. In fact, perfect health previously, sudden and persistent pain in the right iliac fossa, accompanied with vomiting and sluggishness of the bowels; finally, tumefaction and tenderness at McBurney's point we know what this means.

Had there been any fever? Here, I beg leave to make a short digression. There exist between practitioners two sorts of consultation. The first one, which most frequently occurs, is requested by the patient or those in his immediate surroundings. The physician is sure of his diagnosis and perfectly knows what to think of the whole matter, but, they have lost confidence; that cannot be helped. They get discouraged and, gossips helping, they insist in getting another doctor's opinion.

Beware—and here, I address myself to the younger men,—beware, and never commit the imprudence of refusing to acquiesce in the wishes of the family. Gracefully submit to the annoyance imposed upon you; after all, it may be nothing but a pardonable caprice. Consent with pleasant smiles to all they want; you have everything to gain by it. You shall be declared conciliating and charming, and the consulting physician, if he be neither jealous nor imbecile, will share your opinion in everything and this will add to your reputation. The patient will pay double fees and regain the confidence he had lost. Who knows? Perhaps this moral quietness might have a favourable therapeutic influence upon the subsequent evolution of the disease.

The other kind of consultation? This is another affair. An obscure point in the diagnosis; an abnormal and inexplicable feature in the cause of the symptoms; you belong to the privileged class of physicians who have studied enough to be convinced that there are in pathology a few things which one may ignore; you feel that it is your duty to seek the help of a friendly confrere whom you then choose *yourself* whose special knowledge in certain matters you are personally aware of; call him in consultation. But, pray! do facilitate his task which is often very difficult. If especially the question is to establish or confirm a

diagnosis, gather all the materials he may need; write down, if necessary, the detailed history of the case, mention all the symptoms you have observed and the puzzling points you desire to elucidate. In putting thus before the eyes of the consulting physician the complete picture of the disease, you will spare him the necessity of inflicting upon the patient always painful and frequently insufficient inquiries.

I hasten to add that the above remarks do not all apply to the case I am relating. Still, and although I do not attribute more importance than is necessary to the temperature in the diagnosis of appendicitis, I confess that I would have liked very much, all the same, to know whether there had been or not any fever since the onset of the disease. Unfortunately, the thermometer had not been used and all information in that respect was denied to me.

I found the patient all in tears and apparently a prey to the most excruciating pains. It was impossible to approach her, owing to the exquisite tenderness of the abdomen. She hardly allowed a mere inspection, which, however, permitted me to detect an evident tumefaction in the right lower quadrant of the abdomen. The left side could be palpated and was absolutely normal, but it was utterly useless to think of touching even with the tip of the fingers the other side of the abdomen, which she anxiously protected with both her hands against all sort of exploration.

She was immediately taken to the hospital where I decided to remove without delay that appendix which undoubtedly I would find perforated and perhaps gangrenous. I operated the same day. The abdomen was opened along the rectus; the omentum appeared in the wound; it was neither inflamed, thickened nor adherent. I pushed it back in the abdomen where a pad kept it in situ.

I soon fell on the appendix, hard, enormous, the size of the finger. Lying along the colon to which it was intimately adherent, it crossed obliquely the direction of the incision and was pointing north-west. Pursuing my investigation internally, I recognized the uterus, enlarged, soft, the fundus being situated two finger-breadths below the umbilicus. I then tried to ascertain the exact situation of the large intestine, taking for landmark the appendix, but the result of my investigation was not satisfactory. I decided to enlarge the incision in order to make a more perfect inspection of the battle field. I easily drew out of the wound the huge diseased appendix, which looked congested, bluish, almost black. Evidently, it was already gangrenous. I followed the organ with the finger, directing my exploration towards the free extremity which, instead of ending in a rounded, smooth surface, was uneven and shreddy. A closer attention made me suspect for the

first time that what I had taken for the appendix might well be the Fallopian tube. True enough, in plunging my hand into the pelvis, I readily reached its insertion on the right cornu of the uterus. Directing anew my exploration internally where I thought the appendix was adherent to the large intestine, I found out that this hard and elongated body seemed soldered to another, much larger and presenting the same dark blue coloration. I then discovered that, instead of being the bowels, it was a large fluctuating tumour, free from adhesions, and directed towards the umbilicus, posteriorly to the uterus.

The abdomen was at once opened in the median line and I then easily succeeded in exposing the neoplasm, which was nothing else than a dermoid cyst of the right ovary, twisted five times upon its pedicle, strangulated, and the size of a large turnip. I untwisted the pedicle and could then clearly see the tube offering a pink coloration near its uterine insertion, but almost black from the point of strangulation towards its fimbriated extremity.

This case, I fancy, is most interesting. Evidently, the cyst had been in the abdomen for a long time without betraying its existence by any signs whatever. Considering that it was utterly impossible to examine the abdomen owing to its extreme tenderness, I had to make the diagnosis exclusively through the information supplied by the history of the case. That sudden pain in the right iliac region, occurring after a meal in a woman until then apparently in perfect health; the vomiting, constipation, fever, tenderness at McBurney's point; the persistence of the symptoms in spite of rest in bed, hot fomentations, opium and purgatives; and above all, the tumour in the ileo-cecal region; the difficulty of ascertaining the conditions of the organs contained in the pelvis on account of pregnancy; nothing more was needed to believe in the existence of appendicitis. Even after the abdomen was opened, the situation and the characters of the Fallopian tube, appearing in the very region of the appendix, contributed to confirm the likeliness of the diagnosis.

Allow me now, please, to relate briefly two cases of tumour of the iliac fossa in which the diagnosis of appendicitis had been firmly and obstinately maintained by the physicians who brought their patients to me, and where operation proved in a striking manner how imprudent it is to be too affirmative, whenever we have to deal with abdominal diseases.

During the month of April, I received one morning from a physician practising in the vicinity of Ottawa, a message announcing that he was bringing in a patient suffering from suppurated appendicitis, praying at the same time, that everything should be prepared for immediate

operation, because he wished to be present and wanted to return by the next train.

Patient arrived at 11 o'clock and was sitting in the hall when I went into the hospital. He did not seem very ill. I learned that he had driven six miles to go and consult his physician who saw him for the first time that same morning. He was complaining of a pain in the right iliac fossa. The doctor examined him and found at once a lump situated in the ilco-cecal region. The tumour was quite tender and the temperature was 100. Peri-appendiccal abscess was immediately diagnosed and the patient brought down for operation.

The patient was unmarried, 30 years old, with the exception of an attack of pneumonia six years ago, and some intestinal trouble which kept him under the doctor's care for several weeks, he has always enjoyed good health. Temperate habits; no habitual constipation; no diarrhoea. Eight days before, he went to town and took a few glasses of porter. The next day, he complained of slight abdominal pains which he attributed to the porter. However, he never was bad enough to go to bed and even continued to plough on the farm as usual. The pain persisted all the week, situated in the right flank and radiating to the umbilical region. No nausea, no vomiting; appetite not impaired; bowels regular.

The night before, having suffered more than usual, he decided to go to the village with the result already stated. Temperature was normal; the pulse quiet, regular, below 100. General condition good. The abdomen was not distended; no muscular defense. In the right iliac fossa, a tumour, the size of a hen's egg was seen bulging under the integuments. It was quite tender on pressure, hard, not fluctuating, very slightly movable. The limits were ill-defined, and on percussion, a decided resonance showed that the intestine was situated in front of the tumour. The presence of that lump had never been noticed until the doctor attracted patient's attention upon it.

I declared to the physician that the diagnosis was far from being clear, but none of my arguments could succeed in shaking his conviction that we had to deal with suppurating appendicitis, and I, therefore, decided to open the abdomen immediately.

The peritoneum, considerably thickened was incised; no pus escaped, but the cœcum appeared at once, covering a huge tumour, hard, not fluctuating and apparently situated on the posterior surface of the gut. No adhesions internally and above; adhesions below and externally. A portion of the omentum was adherent to the internal side of the cœcum. The transverse colon was pulled down by adhesions to the ascending colon near its origin. The appendix could not be found, the

inferior part of the tumour being actually soldered to the thickened peritoneum below and externally.

The whole lump was freed everywhere. Two clamps armed with rubber tubing, were applied, one on the ascending colon and the other on the ilium near its termination and the mass was removed, the intestine being afterwards united by lateral anastomosis.

The tumour when examined, showed that there was no obstruction of the bowel, the neoplasm being situated in the posterior and lateral walls of the cœcum and a part of the ascending colon. A section made at the inferior part of the cœcum from Gerlach's valve right through the tumour, split the appendix in two longitudinal halves intimately set, as it were, in the solid tissues of the tumour, resembling old fossils found imbedded in stones. Microscopical examination showed the neoplasm to be composed of fairly young fibrous tissue, the processus having spread to the walls of the cœcum and caused the thickening.

Although no tubercle bacilli were found, I incline to believe that this was a case of hypertrophic tuberculoma of the cœcum, because the tumour offered the clinical characters of similar cases published by Dieulafoy in the October number of *La Semaine Médicale*, 1902; unless it belongs, perhaps, to the class of cases described by Marchand, Schwartz and others and constituted by the inflammatory hypertrophy of the ileo-cecal segment of the intestine.

The other case of tumour of the ileo-cecal region mistaken for peri-appendiceal abscess is that of a man, aged 57, brought in to me for operation. Here again, I was informed of the arrival of the patient by a message accompanied with the earnest request that I should perform the operation at once, so that the physician might go back the same day.

Gentlemen, I avail myself of this opportunity to declare that I am one of those who think that, unless there be extreme urgency it is, to say the least, imprudent to do any abdominal operation before the patient has been at least for a while under observation. The diagnosis of abdominal diseases is generally surrounded with such difficulties, that we are in duty bound to put all the chances on our side. We must endeavour to gather all the information we can, in order to enable us to acquire the most complete knowledge possible of the conditions liable to be encountered.

In this case, I refused to resort immediately to the operation because the symptoms, both objective and subjective, left too much doubt in my mind, concerning the existence of a purulent collection in the abdominal cavity and this, in spite of the peremptory conviction expressed by the family physician.

The patient looked comparatively well. The abdomen not distended,

seemed quite normal with the exception of a bulging readily seen in the right iliac fossa. The lump, pretty well defined, hard, movable, not fluctuating, moderately tender on pressure, filled a triangular space formed by a base extending from the spine of the ilium to two inches below the umbilicus, the right side of the triangle following the median line, the left parallel to Poupart's ligament and the apex reaching down to about the level of the internal abdominal ring. The mass, dull on percussion, was evidently situated in front of the intestine, being, in fact, superficial enough to make me think of its possibly being located in the deep parts of the abdominal walls. Temperature normal; pulse 76; bowels constipated.

Three weeks before, he had begun to suffer in the right lower quadrant of the abdomen, from a pain which he attributed to constipation, bowels not having moved for several days. No chill, no nausea, no vomiting. Constipation remaining obstinate in spite of purgatives, he left the shanty where he was working and drove down to Sudbury where a physician ordered purgative pills which succeeded in moving the intestines.

At the end of two or three days, the pain, although not entirely gone, was somewhat relieved and the patient went back to the shanty. Constipation soon returned, and the patient feeling miserable, decided to go home where the family physician was consulted. After examination, the physician attracted patient's attention to a tumour quite apparent in the right iliac region, which until then had never been noticed. Fomentations were applied, but conditions remaining practically the same, the patient was taken to Ottawa to be operated.

An incision was made along the rectus. The skin divided, the subjacent tissues appeared thickened, lardaceous. The abdominal muscles were fully two inches thick, the peritoneum so intimately adherent to them that it was almost impossible to find out the anatomical relations. No serosity, no pus in the abdomen. The transverse colon with its omentum appeared first in the wound. Following the upper end of the colon, I soon reached the termination of the ileum. Grasping then between my fingers, the internal lip of the incision, I clearly ascertained that the whole tumour was caused entirely by the inflammatory infiltration of the abdominal muscles.

The appendix was found literally imbedded in the peritoneum lining the internal surface of the abdominal wall, its tip directed south-east and so snugly adherent that I had to carve it out of its bed. It was thick, congested, but no pus, no fecal concretion were found in its cavity, the mucous membrane offering the normal lymphoid appearance.

If it frequently happens that tumour situated in the ileo-cecal region, are mistaken for appendicitis, on the other hand, suppuration due to appendiceal inflammation have, in several instances, been mistaken for other diseases, such as for example, cancerous or tubercular neoplasms.

In its classical forms, appendicitis is easily recognized; but, the disease at times presents in its course, its evolution, its behaviour, anomalies which produce a deceptive impression and readily mislead us. In the iliac fossa, a tumour, firm, hard, growing slowly; a progressive emaciation, a well marked cachexia cause the surgeon to suspect a malignant and inoperable tumour; and one day, a central softening seems apparent, the focus is incised and the tumour disappears. Such is the history of these cases of appendicitis, neoplastic in their form which not uncommonly lead to errors of diagnosis. In *La Revue de Gynécologie et de Chirurgie Abdominale* M. Vautrin relates the case of a woman aged 55, previously in good health who had been complaining for three months of severe pains in the right iliac region, where a lump had slowly developed. The physician pronounced it to be a tumour of the large intestine and Vautrin having corroborated the diagnosis, operated upon the patient. He found a retro-cecal purulent collection with a hard, sclerotic appendix adherent to the posterior surface of the cœcum.

Legueu and Bausserat also cite the case of a man aged 60, on whom the diagnosis of cancer of the cœcum had been made eighteen months previously by a surgeon who deemed all intervention utterly impossible. The tumour kept growing gradually, the patient becoming absolutely cachectic, and the family, informed of the incurability of the disease, expected early fatal termination, when a spontaneous opening supervened on a level with the umbilicus, giving issue to a large quantity of pus. Patient felt relieved, appetite returned, the emaciation disappeared. To-day, he is in perfect health.

The same authors again mention another case of that kind concerning a man, kept for a long time under observation in one of the large hospitals of Paris, in whom the resection of the cœcum had been decided upon. The patient was brought on the operating table and the abdomen opened. It was a case of suppurated appendicitis.

Finally, Pozzi, in March 1897, operated in Broca Hospital, on a patient whose observation is so interesting that I beg permission to relate it in a few words. A woman, 68 years old, had been complaining for several months of an unusual fatigue associated with a progressive emaciation, which nothing could explain, when, one day, she was suddenly seized with very severe pains, localized in the right side of the abdomen and very soon followed by tympanitis, nausea and vomiting. The latter symptoms soon abated, but weakness persisted,

appetite entirely disappeared, and excessive emaciation compelled the patient to keep to bed until the day when she entered the hospital.

Examination disclosed in the right iliac fossa the presence of a hard mass, dull on percussion, seemingly immovable and very tender on pressure. General condition very bad; fever with vesperal exacerbations. The diagnosis was uncertain, successively oscillating between appendicitis or degenerative affection either cancerous or tubercular of the cœcum.

The long evolution of the disease, the subacute course, the absence of fluctuation, the age of the patient, were very little in favour of appendicitis; but, on the other hand, the existence of fever with large vesperal oscillations, hardly agreed with the idea of neoplasm of the cœcum. Patient was examined under anesthesia, but then, the hardness of the tumour, its irregularities, its adhesions to the iliac bone brought out the diagnosis of osteo-sarcoma, and all idea of surgical intervention was given up.

The weakness, the emaciation increased every day; the complexion became earthy. However, very soon no doubt was entertained about the presence of suppuration in the iliac fossa and Pozzi operated. The skin and deep tissues being incised, he fell into a cavity containing three pints of pus with decided intestinal odour. Patient died the same evening. The autopsy showed that the collection was retro-cecal, due to a perforation of the appendix situated at the union of the appendix and the cœcum.

Mistakes of that kind, gentlemen, will become less and less common according as surgeons learn not to consider appendicitis as a disease always presenting a uniform clinical aspect. We must, therefore, constantly bear in mind that this affection often assumes the most deceptive appearance and quite liable to divert our attention elsewhere than to the real seat of the pathological lesions. I still recollect the perplexed situation in which I was placed by a woman who entered the hospital during the month of June last. She had a hard, moderately tender and perfectly well defined tumour in the iliac region. There was no fever; general condition was excellent. Six weeks previously, she had been admitted in the hospital, complaining of some abdominal pains and a sanguineous discharge by the vagina. She was kept three weeks under observation by the attending physician who prescribed hot vaginal douches. Becoming apparently well, she left the hospital but returned two days later, owing to severe abdominal pains with which she had been seized the night before. She did not seem to be at all aware of the tumour which I readily detected in the iliac region at my first examination. She was then complaining of very little pain, had

no fever and remained sitting up in the ward, feeling comparatively well until the day of the operation. Laparotomy revealed the existence of a large cavity filled with pus and at the bottom of it I found a perforated and gangrenous appendix.

May I be permitted to end this series of citations by the relation of a case of tumour of the iliac fossa, comparatively rare and certainly offering the greatest interest? About the middle of the summer, a woman, aged 33, was admitted to the hospital, complaining of occasional pains in the right iliac region where a tumour had been slowly growing for several years. She traced the beginning of the illness to seven years ago, when one day she experienced in the right lower abdomen a sharp pain which compelled her to remain in bed for almost a week. No constipation, no nausea, no vomiting. She said that ever since that time, she had been subject to similar attacks of pains, coming on suddenly at various times and gradually disappearing. At first, these attacks seemed to coincide with menstrual epochs, but lately they had showed no particular connection with monthly periods. She had lost considerable weight; the appetite was impaired. The lump which did not seem to have much increased in size of late, was moderately tender except during the paroxysms when it became very painful.

On the right side, midway between the umbilicus and the anterior spine of the ilium, a tumour was distinctly felt, hard, very slightly movable, the size of an orange, not lobulated and quite tender on pressure. During examination, gurgling noises were heard, produced by the displacement of intestinal gas. The abdomen was opened and the tumour appeared, situated at the union of the ileum and the cœcum, in the region of the ileo-cecal valve. The omentum, adherent to the upper part of the tumour pulled the neoplasm upwards, dragging at the same time the transverse colon downwards. Superiorly, the limits of the tumour were not clearly defined, the upper part was adherent to the meso-colon, forming a mass whose anatomical relations were difficult to ascertain. In trying to detach some of the adhesions I perceived that the gut was perforated. Introducing my finger in the perforation, I could feel inside of the bowel the rough surface of the tumour and thought for the first time of the possibility of its being a large enterolith. However, the bowel being perforated, I made the resection of the cœcum including the tumour, uniting afterwards by an end-to-end anastomosis the termination of the ileum to the ascending colon. Fully six inches of the bowel were removed.

The parts examined after operation showed the presence of a large globular mass, the size of an orange and composed of hardened feces. The mass perfectly smooth, was free in the cavity of the cœcum and

fell out of its site, which must have been almost entirely filled by the enterolith, and it is a wonder that the patient never offered any symptoms of intestinal obstruction.

This paper, which I have the honour of reading before you, has, I hope, contributed to a certain extent to demonstrate how varied and deceptive are the affections characterized by the presence of a tumour in the right iliac region. Thus, out of five personal cases, one was due to an ovarian cystoma; another, to a dermoid cyst with twisted pedicle; a third, to hypertrophic tuberculoma of the cœcum; a fourth, to interstitial myositis and finally, the last, to an enterolith of the large intestine.

The conclusions which we may draw from these varied observations are as follows:—

1. The extreme difficulty of making an accurate diagnosis in several cases.

2. The facility of mistaking for appendicitis, cases of entirely different origin and *vice versâ*.

3. In presence of an abdominal tumour, never to take the knife in hand without being prepared for any kind of emergency.

4. Whenever a case has not been personally observed from the beginning, always to reserve the diagnosis, whatever may be the ability or the cleverness of the physician by whom we are called in consultation.

5. Finally, that the abdomen is a mysterious region of the human body, concealing a great many obscure diseases in the surgical treatment of which many a patient loses his life, and the surgeon, quite frequently, a good deal of his self-complacency.

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## ON STOKES-ADAMS SYNDROME.

BY

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HIS, JR. Ein, in Fall von Adams-Stokes'scher Krankheit mit ungleichzeitigen Schlägen der Vorhöfe und Herzkammern. (Herzblock.)  
*Deutsches Archiv für Klinische Medicin. Band LXIV.*

A. HOFFMANN. Zur Kenntniss der Adams-Stokes'schen Krankheit.  
*Zeitschrift für Klinische Medicin. Band XLI.*

A. JACQUET. Ueber die Stokes-Adams'sche Krankheit. *Deutsches Archiv für Klinische Medicin. Band LXXII.*

This interesting phenomenon which has long been recognised clinically and studied by the English and French schools of medicine has only recently received special notice in the German literature. Grob, in 1888, in his article Ueber Bradycardia includes several cases presenting

the Stokes-Adams symptom complex yet they are not placed in this category, and the same may be said of Riegel who wrote on the same subject two years later.

In each of the above contributions the authors after reporting a case go on to analyse the special features each presented and make them the basis of a general study of the so-called Stokes-Adams Disease. This applies especially to the article by Jaquet.

These case reports briefly are as follows:—His, jr. Male, 54 years of age. Onset one year ago, after severe work with loss of consciousness. Similar attacks recurred till the patient came under observation. Physical examination revealed nothing abnormal in any system but the circulatory, with the exception of evidence of presence of emphysema.

The heart was slightly enlarged to the left. The apex pulsation was not visible nor impulse palpable. On auscultation at the apex the tones were heard only with difficulty and were not clearly distinguishable from each other. The same was noted over the tricuspid area and at the base of the heart no tones were audible. The peripheral vessels were thickened and hard. The pulse rate was 36-44 per minute. The urine contained a trace of albumin and hyaline casts.

The patient was under observation for a month and a half and during this time the pulse remained constantly slow. The attacks of loss of consciousness observed could be divided into three distinct types.

1. Complete absence of pulse followed by pallor, dyspnoea convulsions, dilatation of pupils, loss of consciousness.

2. Pulse remained regular or stopped but for a short time, the breathing, however, was irregular and consciousness lost.

3. The attack began with apnoea and later the pulse failed. During one of the attacks His observed pulsation of the cervical veins even when the arterial pulse could not be palpated, and later when it returned the venous pulsation was noted to be negative and one arterial beat corresponded to four of the venous.

The patient died three months after leaving the hospital. No post-mortem examination was obtained.

Hoffmann's patient was a female aged 23, who had an attack of loss of consciousness at the age of 21, but vertigo had been felt for over a year before this time. Rest and quiet had a very beneficial effect, but the following year the condition returned after the patient had attempted some severe work. The attacks now came on every week, but again disappeared as before. During the last month and a half before she came under observation, they were more frequent than ever.

The patient was a pale rather poorly nourished woman. The heart

was slightly enlarged to the left, the apex impulse not palpable. On auscultation at the apex the tones were weak but clear. The heart's action was irregular, being in series of two beats with a long intervening pause. At the pulmonary cartilage, during this pause, an unclear tone was heard. The pulse, 48 per minute, presented the character of the *pulsus bigeminus*. The arteries were soft and elastic. Haemoglobin, 55 per cent.

The attacks were always of the same character. The onset was sudden with complete loss of consciousness, no aura being present. There were no convulsive movements at any time. The breathing was irregular and the pulse rate slowed to 18 per minute, later increasing to 30. During the pause low unclear tones could be heard over the precordium. No visible pulsation was present over the vessels of the neck. The duration of the attacks varied from an hour to an hour and a half.

Jacquet's patient was a male 30 years of age, who eight years previously contracted a suspicious ulcer on his penis. For several years the patient had noticed that he tired easily from very slight exertion, but during the past year and a half this became much more pronounced. The first attack of loss of consciousness came on one year before coming under observation and during it the pulse rate was 17 per minute. The following day he had a second attack and then remained free till a few weeks before admission to the hospital. There were no convulsive movements during any of these attacks, but there was involuntary micturition. At times an aura preceded the onset.

The patient was very anæmic with regular slow pulse 24-32. The arteries were not thickened nor tortuous. The heart was enlarged to the left and to the right, the precordium showing heaving pulsation. At the apex the first sound was unclear followed by a soft systolic murmur; the second tone clear. In the pause occasionally one or two low tones were heard not accompanied by a perceptible pulsation. At the base the same was heard. The jugular veins pulsated two or three times more frequently than the arteries.

In an attack which occurred while the patient was under observation he lost consciousness, became very pale, the pulse was absent for a time and the heart sounds were very feeble. The pulse was irregular and unequal after the attack. The patient had quite recovered 10 minutes after onset.

Ten months later the patient died. Postmortem examination revealed the presence of fragmentation of the muscle of the left ventricle. The right ventricle was normal and nowhere was there any evidence of arterio-sclerosis. The medulla oblongata was normal throughout.

The authors recognise at the outset that the symptom-complex 'bradycardia with attacks of loss of consciousness of a syncopal, apoplec-tiform, or epileptiform character and accompanied by disturbances of respiration is by no means due to a single pathological lesion. In the heart may be found fatty degeneration fibroid myocarditis simply or associated with sclerosis of the cerebral vessels. Uræmic poisoning may be the cause, also different lesions of the medulla and vagus.

The bradycardia may be permanent or transitory. Jacquet draws attention to the obstinacy of this condition. The pulse rate is not influenced by change of posture, exertion or presence of fever. The observation made by both Jacquet and His of venous pulsation in the neck more frequent in rate than that of the pulse, has been noted also in many cases of this condition. Stokes observed the phenomenon in one of his patients. His regarded it as being an example of "heart block" as described by Gaskell. Jacquet, however, considered that he had to do with an example of the so-called *formes frustes* described by Huchard and considered two possibilities at work as causative factors. First, diminished irritability of the muscle of the ventricular wall, and second, impaired capability of the muscle to transmit stimuli originated in the auricle. Hoffmann considers these two factors as being the cause of the bradycardia and the allorhythmia present in his patient. The latter confirmed his impression by direct inspection of the cardiac movements by means of the Roentgen rays and the former arrived at his conclusion by a study of the curves obtained by the cardiograph and sphygmograph.

The vessels in patients presenting the Stokes-Adams syndrome are frequently thickened and tortuous, but this does not apply to all cases for in Jacquet's patient the postmortem examination revealed entire absence of any change in the vessel walls. In Hoffmann's patient also the peripheral vessels were soft and elastic.

Pallor is not infrequent. In Hoffmann's patient it was due to the condition of the blood. In many cases, however, the cause is regarded by Jacquet as being due to active vaso-constriction of the vessels in certain areas. The coldness of the extremities, paræsthesia numbness, itchiness and the feeling of dead fingers may be readily explained in this way. Stokes states that one of his patients could prevent an impending attack by sinking on his hands and knees and dropping his head downward.

The second cardinal symptom is of neurotic character; viz., the apoplec-tiform and epileptiform attacks. These may vary in degree from a slight attack of vertigo to deep coma or typical epileptiform convul-sions. His' patient presented different types as given above, that is

at one time the pulse was the first to fail, at another Cheyne-Stokes breathing with undisturbed heart action and again apnoea the pulse being affected later. His regards the heart as being the cause of the first type of attack, the second and third types being originated in the medulla from sclerosis of the vessels and irritative impulses originating there acted secondarily on the heart. Hoffmann regards all as being cerebral in origin. Certain attacks cannot be differentiated from true epilepsy. An aura may precede the convulsion. Others may simulate *petit mal*. Differences in the pupils have been observed also loss of memory and a deterioration of the mental condition.

The third cardinal symptom is the disturbance of respiration. This, however, may be absent. Cheyne-Stokes respiration, dyspnoea or irregular breathing may be present. In the intervals between the attacks there may be slight dyspnoea on exertion due to emphysema.

Digestive disturbances are frequently met with. The attack may come on after a heavy meal or there may be dyspeptic symptoms, epigastric distress, eructation, vomiting, diarrhoea or obstinate constipation.

Jacquet goes fully into the etiology of the condition. It was at one time regarded as being seen only in elderly individuals but its occurrence in persons under 30 years of age is being more and more frequently reported. Arterio-sclerosis is present in the majority of cases, but not infrequently all signs of this are absent. Syphilis appears to play a part in the etiology of Stokes-Adams disease. Whether the use of alcohol and tobacco have any bearing on the condition is not decided. Infectious diseases have, however, a definite relation to the condition. Several cases are cited as having occurred after pneumonia, acute rheumatism and during typhoid fever. Gastro-intestinal disturbances may have some influence, but other factors may be active at the same time. In Hoffmann's case a profound anæmia was the fundamental causative agent. Injury to the central nervous system and tumours may give rise to Stoke-Adams syndrome. In certain cases no cause whatever can be ascertained.

That the morbid changes must be varied follows directly from a consideration of the etiological factors. Extensive arterio-sclerosis especially calcareous degeneration of the coronary, and cerebral arteries and vessels of the medulla oblongata are found in some cases. In others, no arterial change is present, but fatty degeneration of the heart. Lesions of the cervical cord irritating the medulla may be the anatomical basis. Pathological examination may in some cases reveal no morbid change.

The pathology has been differently regarded by different observers.

Stokes and Adams both considered the cardiac lesions as the essential features leading secondarily to anæmia or hyperæmia of the brain. Charcot, from his observations, concluded that the medulla was the seat of the disease. The nervous symptoms were explained by lesions of this part of the nervous system and the bradycardia due to irritation transmitted by the vagus. Tumours of the medulla and traumatism of the upper cervical cord favoured this view. Huchard taking an intermediate position regarded as the pathogenic factor the sclerosis of the coronary arteries and of the cerebral vessels bringing about an insufficiency of the heart and nutritional disturbances of the brain. Neuritis of the vagus has given rise to the Stokes-Adams syndrome. Debio's researches in this respect to which Jacquet refers are very interesting. His opinion has been given above. Hoffmann considers the heart as the seat of the lesion and the cerebral anæmia secondary to it as the cause of the nervous symptoms. Jacquet considers it rather remarkable that previous observers have directed their attention only to the heart and medulla oblongata and have disregarded vaso-motor influences entirely. These play a very significant role as indicated by the extreme pallor which is present at the beginning of a seizure and which gives place to a diffuse blushing when consciousness is returning. Other arguments are also brought forward which support this view.<sup>2</sup>

The diagnosis is to be made when a patient with bradycardia has attacks of loss of consciousness or epileptiform seizures. Jacquet is rather inclined to exclude cases of transitory bradycardia.

The prognosis is in all cases grave, as the patient may die during an attack. In young people, however, when there is no thickening of the vessels permanent cure has taken place. Cases of 13-14 years duration are on record.

The treatment is in many cases very unsatisfactory. Digitalis has no beneficial effect. Huchard recommends amylnitrite and nitroglycerine. Hoffmann's patient was cured by inhalation of oxygen. If a history of syphilis is obtained specific treatment should be employed. Attention should be paid to the diet and purgatives used when necessary.

Dr. Osler's paper has not been referred to in this article as it has been reviewed in a recent number of this JOURNAL.

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<sup>1</sup> In the *Monatschrift für Kinderheilkunde*, Feb. 1903, is an article on Stokes-Adams syndrome in children.

<sup>2</sup> Ortner concurs in Jacquet's view in an article entitled *Zur Klinik der Angiosklerose der Darmarterien* Volkmann's Sammlung Klinischer Vorträge Nr 347.

# THE USE AND ABUSE OF SOAP

BY

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Montreal.

Mankind is divided into two classes, those who wash and those who do not wash and the advice given by gruff old Abernethy to the mother of the little boy who consulted him, that he should take a good bath, is still of general application.

Of making soap there is no end. Innumerable are the manufacturers of soap. Perhaps the oldest is that of Pears', which was originally recommended by the English dermatologists, the late Sir Erasmus Wilson and Tilbury Fox. Cleaver's soaps are excellent, Wright's Coal Tar Soap is much used, while the name of Colgate of New York is also well known. Packer's is increasing in popularity; Aichorst and Stiefel of Germany make an excellent medicated soap, and Midgeley and Allen and Hanbury of London do likewise.

What are the characteristics of a good soap?

- (1) It should be made of the purest materials.
- (2) It should act as an emollient to the skin.
- (3) It should be free from an excess of alkali.
- (4) It should act as a detergent, clearing and purifying the cutaneous surface.

(5) It should never irritate the skin.

A badly made soap may set up a dermatitis, eczema or erythema. Many of you, no doubt, have had patients come to consult you about an inflamed irritated skin, the result of the abuse of soap and water,—perchance a young lady, one anxious to have a clear fine complexion who has been too assiduous in the use of soap and water.

How are we to remedy the eczema or dermatitis set up by a bad soap? A solution of oatmeal water may be made (one tablespoonful of oatmeal to a pint of water) warmed and strained. The patient may wash the face with this, and may use olive oil, and avoid the use of soap and water. Or the patient may wash with olive oil, to this a few drops of carbolic acid may be added, and rubbed with a little corn-starch or orrisroot.

To overcome the disadvantages of using a soap, B. Merrill Richetts has devised a substance which he calls Saponaceous Cream. The two things most important are, the attainment of an absolutely neutral soap, containing neither alkali or acid, or one composed of fat or oil, not prone to decompose. To this is added the fresh albumin of egg, thoroughly incorporated by means of an egg-beater, a few drops of oil of roses, bergamot, bitter almonds being added to give it an agree-

able odour. With this may be incorporated medicinal agents of varying strengths; ichthyol, 5 per cent.; iodol, one per cent.; boracic acid, 5 per cent.; thymol sulphur, 5 per cent.; eucalyptol, 5 per cent.; hydr. bichlor.  $\frac{1}{2}$  per cent.; carbolic acid, 5 per cent.

Soaps have the power of softening the epidermic cells; this opens these cells more to treatment and it is for this object that medicated soaps are used. They have their chief action and sphere in cases where soap for the use as soap is used, and not as a vehicle for drugs.

Soaps may be applied in various ways: by simple washing, by rubbing in the lather and allowing it to dry on, by rubbing in thoroughly till dry, and by covering the lather with an impermeable material.

The Romans luxuriated in well kept much frequented marble slab baths, where the voluptuary remained for hours and after the bath he anointed himself with oil or ointment. In the previous ages soap was unknown.

Pliny says the Gauls were the first to make soap by mixing ashes and tallow. Chevreul, who died in 1899 at the age of 103, published his researches in 1813, and nothing definitely was known till then of the chemistry of soap. Soap is the result of the union of one or more acids obtained from fatty bodies, accomplished with an alkali and oxides, the process consisting in the substitution of the alkali for a radicle of the acid, the latter combining with the elements of water to form glycerine.

The chief adulterations of soap are, lime, gypsum heavy spar, stearates, pipe-clay, and Spanish blue. These can be detected by dissolving the soaps in water.

Saponification is due to the union of alkalies with animal fat or vegetable oil, by boiling the oils in a solution of the alkalies. Caustic soda makes the soft soap, and caustic potash the hard soap. The alkaline oleates, palmates, and stearates constitute ordinary soap. After chemically testing olive oil and soda, water is added, the result being saponification into a smooth gelatinous, opaque, odorous, and neutral mass. It has been determined that olive oil is the best to obtain such an end, while cocoa-nut oil and palm oil contain properties conducive to rancidity.

There are two classes of patients who use soap and water on their hands and faces: (1) those who are exposed to dust and dirt due to occupation or otherwise; (2) those who wash, and use powder and cosmetic.

For the first it is better to abstain from the use of soap and use olive oil on soft linen or silk. The second class should abandon the use of

cosmetics, and use olive oil with a little carbolic acid, and afterwards use rice powder.

The great Hebra has handed down to modern dermatologists an invaluable soap—spiritus saponis alkalinus. This makes an excellent shampoo, and is a good vehicle for removing scales, crusts, and is an excellent remedy in chronic eczema and psoriasis.

Soaps when added to other remedies will often increase their efficacy in psoriasis, in lupus erythemus, acne vulgaris, syphilitic scleroses, and in the dry scaly condition of syphilitic patients. Mercury may be administered in an unostentatious way in the Neapolitan soap.

One dram of oil of cade or of Rusci may be added to the spiritus saponis alkalinus, making it very effective in scaly and chronic infiltrated cases of eczema and psoriasis.

Soaps may be divided into: (1) Alkaline, (2) Neutral, (3) Superfatted, (4) Medicated.

For ordinary use neutral soaps are the best (Norman Walker). Alkaline soaps are less thorough in their action than more fatty ones, and require more water to be satisfactory.

Unna was the first to introduce superfatted soap, and W. Allen Jamieson is loud in praise of a superfatted soap in preference to an alkaline one. He claims that in winter while the cold easterly winds prevail, his hands invariably suffered from redness, roughness, and were painfully chapped, but this disappeared after using the superfatted soap.

Vinolia Soap is pure, superfatted, and well adapted for the nursery and for children. Calverts', the original makers of carbolic acid soap, are good of their kind. There is another soap of Canadian manufacture, manufactured by the Albert Toilet Company, which is a good superfatted soap.

The chief use of a superfatted soap is when the skin is very delicate, as on the face, and when there is a tendency to eczema. But it is inferior in cleansing purposes to a well made neutral soap. Crocker does not think much of the use of medicated soaps in derma-therapathy. He thinks their virtues have been exaggerated.

Medicated soaps are effective in that they largely promote absorption in opening and cleansing the pores of the skin. They are convenient and cleanly. They insure the absorption of topical remedies. The medicated soaps are de-odorizing and disinfecting. Soaps being salts of the fatty acids are essentially not irritant.

Acid boracic soap makes a good shampoo, is excellent to use for those who have a delicate skin.

Sublimate soap is useful in sycosis, syphilitic eruptions and erysipelas, phlegmon, furunculosis, impetigo, ecthyma.

Aristol soap is useful in all syphilitic eruptions, ulcerations, diseases of the scalp, and perspiring feet.

Balsam Peru soap, 5 per cent., is a good emollient and antiseptic soap.

Benzoic Acid soap, 5 per cent., is useful for children in persistent inflammatory infections of the skin, keeps the skin soft and fresh and prevents excessive perspiration.

Birch tar soap, 5 per cent., is useful in moist and dry skins, comedones, and seborrhœa sicca.

Birch tar and sulphur soap is useful in herpes, redness and seborrhœa sicca, freckles and miliaria papulosa.

Carbolic acid and sulphur soap is useful in eczema and parasitic skin diseases.

Chryso-robin soap, 5 per cent., is useful in chronic eczema, alopecia areata, parasitic skin diseases, tinea versicolor, ring-worm, favus, most obstinate nervous affections, anidrosis, and pruritus.

Creolin soap, 5 per cent., is useful for disinfecting hands.

Cucumber soap, 5 per cent., is useful in sunburn, lentigo, and for preserving the complexion.

Eucalyptol soap, 5 per cent., is useful for chapped hands and is a good deodorizer.

Napthol soap, 2½ per cent., sulphur precipitate, 10 per cent., is useful for removing tan and freckles.

Iodoform soap, 5 per cent., is used for chancre, in the syphlodermata, and hyperæmia of the skin, varicose ulcer, hyperidrosis, chilblains, urticaria, keratosis and ichthyosis.

Icthyol and tar soap is useful in eczema and troublesome cases of impetigo.

Iodoform soap, 5 per cent., is used for chancre, in the syphiloderma, and dermatitis of all kinds, useful in lupus, tubercular skin affections, in leprosy, actinomycosis.

Lysol soap is a disinfecting soap.

Marble dust soap is useful in removing hardened crusts, psoriasis, lichen planus.

Menthol and eucalyptol soap is useful in urticaria.

Napthol and glycerine soap is useful in chronic skin diseases, moist herpes, etc.

Napthol and sulphur soap is useful in freckles.

Petroleum and tar soap is useful for those having a delicate skin, and in eczema impetigo.

Frequent washing causes an excess in the exfoliation of the cuticle. The skin is rendered coarse and rough by the frequent use of cosmetics, soap and water. Less frequent bathing renders the skin softer,

smoother and less scaly. After a good soap bath Buckley highly recommends a dram and a half of carbolic acid added to four ounces of glycerin amyli.

To protect ladies from the alternations of temperature, dust, sun and wind, the following well known to every dermatologist but not so well known to the general practitioner, is useful:

R Acid boraci, half a dram, glycerin, half an ounce, gum tragacanth, half an ounce.

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## EXCISION OF THE CLAVICLE WITH RESTORATION OF PERFECT FUNCTION OF THE ARM.

BY

F. J. HACKETT, M.D.,

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The case presented is of interest, as being an example of a somewhat rare surgical operation, doubtless because the cases requiring the complete removal of the clavicle are not of frequent occurrence. The operation itself, which presented no unusual features, was easily performed. The main point of interest in the case is the result, and for that reason it is brought to the notice of the members of this Society. It affords an example of how a young man can get along without his bony clavicle, and of the small amount of deformity resulting in this instance.

The patient was seen for the first time on September 10th, 1903, complaining of an inflamed and painful swelling in the right clavicular region towards the middle line, caused by injury. The patient is 17 years of age; he has enjoyed good health, and the only clinical fact of importance which can be ascertained is that when about five years of age he was for nine months in a hospital for disease of the hip joint. It has not troubled him since that time nor is he lame at present.

The father died at the age of 40; he was accidentally killed, but had always enjoyed good health. The mother is alive and addicted to the use of alcohol. Two brothers are living, younger than patient, and in good health; one sister is 12 years of age and healthy. In the mother's family there is a strong alcoholic taint. The patient presents both mental and physical signs of degeneracy.

The patient was injured, September 1st, 1903, by the rough handling of a fellow-workman and in the scuffle he was thrown down a flight of stairs. He returned to his work two days later but had to stop on account of pain. He applied at the outdoor department of the Western Hospital for relief on September 10th.

On examination an acutely inflamed area was found in the right sub-

clavicular region radiating from the junction of the clavicle and sternum and extending over into the pectoral region, the point of greatest intensity; fluctuation was felt over the sterno-clavicular joint. The temperature was 101, the pulse 95; haggard appearance, with constitutional depression. The various systems presented nothing of importance bearing upon the present state excepting the osseous system.

The spine is quite straight and regular, the thoracic cage, however, is asymmetrical, the left side bulges anteriorly, the costal cartilages especially being arched forwards, the right side is depressed and flattened. There is no history of inflammatory disease of the lungs or pleuræ which might have caused this, it is probably associated with faulty bony development.

The diagnosis was Suppurative Arthritis of Sterno-clavicular joint.

An incision was made along the inner end of the clavicle and the articulation opened. A quantity of pus escaped and bare bone was felt and the sternal end of the clavicle was curetted away. The cavity was swabbed out with undiluted carbolic acid and packed with gauze. The wound was dressed at the outdoor department until September 29th, when through the sinus bare bone was again felt extending towards the outer end of the clavicle. The patient was admitted to the surgical ward for removal of dead bone comprising the entire clavicle if necessary.

On October 1st, under general anæsthesia, an incision was made over the clavicle down to the periosteum which was much thickened; it was cut through to the bone and this was found to be necrosed. The periosteum was pushed aside, the bone exposed, grasped with strong forceps and drawn outward, the periosteum was separated from the under surface and the clavicle lifted out. The periosteum was almost entirely left in the wound, only a small portion which is seen on the specimen being taken away; it formed a gutter-shaped cavity where the bone had been.

A counter opening was made at the acromial end posteriorly for drainage and the main incision closed. The operation was carried on sub-periosteally and there was very little hæmorrhage.

The patient was kept in bed for fourteen days and made an uneventful recovery leaving the hospital with a fairly resistant ridge extending from the sternum to the tip of the shoulder. He was able to use his arm, doing light work and carrying weights, such as a bucket of water, on the first of January, 1904, and is now at work in a machine shop doing ordinary manual labor without inconvenience. The periosteum left in the incision has grown and forms at present a stout, resistant bony ridge taking the place of the clavicle. The functions of the arm is perfect. The pathological report was that of Tuberculous Osteitis.

THE

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## MEDICAL EDUCATION IN AMERICA.

It is strange how, in this world of ours, the most unlikely and distant things become linked together. Who, for example, would imagine any but a metaphorical relationship between diamond digging and medical education? Yet such relationship has developed itself in the report that lies before us—the Report of the Mosely Educational Commission. How it developed itself is a suggestive piece of personal history.

It was in the early days at Kimberley some fifteen years ago. Diamonds had been found and miners and speculators had rushed to the scene; among them Mr. A. Mosely. But, though the diamonds were undoubtedly there, more gold was sunk into the blue clay than diamonds extracted. Few managed to make even moderate fortunes. To be remunerative, it was necessary that work should be on a large scale; this the financiers recognized, among them Cecil Rhodes. Incidentally we may mention that it was Mosely who interested Cecil

Rhodes in the diggings and sold to him the stock which now is to support the Rhodes Scholars at Oxford. But financiers may finance and success still be lacking. That success depends upon the managing heads of an undertaking. In this case, before all things, capable engineers were required. The larger concerns were essentially English—if, to a large extent, Anglo-Israelitish—and, naturally, one after another, English engineers were appointed as managers. They were, as a body, sound, solid, well-trained men; too solid perhaps, for, somehow, matters did not prosper. At this juncture Cecil Rhodes amalgamated the properties into the celebrated De Beers Company, and Gardner Williams, a California engineer, was called to assume control. The change in the state of affairs wrought by Williams and his second in command, Louis Seymour, another American, was marvellous. Alert and resourceful, understanding not merely how to cope with engineering difficulties, but, above all, how to deal with men, Williams and Seymour rapidly transformed the Kimberley mines into one of the greatest, if not the greatest, profit-making concern in the world.

No wonder that Mr. Mosely, who had known the dark days, was deeply impressed. The Americans had done it. But how? They were men of the same stock. What then gave them this commanding advantage? Pondering over the problem for many years he came to the conclusion that their success must be due to their early education. Thus it was that he determined, for the good of the old country, to send to America a commission composed of those interested in the different branches of education—in primary and secondary education, in business, technical and university education—to study American methods and to report for the instruction of Great Britain, upon what made it that “the United States could afford to pay half a dollar in service where we paid a shilling, and still compete with us in the markets of the world”?

The Report with the carefully considered judgments of its six and twenty experts is of the highest interest. Not one of its four hundred or so pages but contains material for reflection. Whether it will be quite satisfactory to Mr. Mosely is another matter. Rather, in reading it, we detect a savour of Balaamism. Mr. Mosely had expected that the Commission would demonstrate the superiority of American methods and show how it was all done. But it is not, the commissioners seem to say, one after the other, the education that is superior; it is different in many respects, and this or that method strikes us as well worthy of consideration; we in the old country afford in general as thorough, if not a more thorough, training. Only, would it seem, in “English” and scientific teaching and in the recognition of the close affinity which

these subjects bear to practical life and industries, are the American methods, according to the Warden of Bradfield College, far ahead of our own. But while acknowledging this, even he is far from assigning American industrial progress to this sole cause. One commissioner, Professor H. E. Armstrong, cordially damns the whole system or want of system. His hearty growl has a curiously familiar ring. But what clearly has impressed every member of the Commission is the enthusiasm for education—the individual scholar, even in the primary school, realizes that education is essential for material success, realizes its financial value and works with enthusiasm; the teachers, as a body, from the school “marm” to the university professor, are equally enthusiastic; the heads of industrial concerns, great and small, appreciate fully that the educated employée is a more profitable article than the half-educated; the millionaire lavishes his money upon educational institutions, holding it to be the best spent when spent thus. The *material* afforded to the scholar is often defective—too great a smattering of many things, too little thorough grounding in any one subject—the *spirit* in which it is received is beyond praise. It is the attitude towards education, not the education itself that is of importance. Nor will it be by any extensive change in the modes of teaching that Great Britain will win up to the States, but by a change of heart; by the individual and general realization of the material, monetary, value of higher education. Those in Great Britain may have read with a feeling of disdainful superiority R. L. Stevenson’s biting description of the Muskegon Commercial Academy where they had “tickers” in direct connection with the Chicago exchanges and the boys might elect for “wheat” or “hog products,” “industrials” or “railways”; where each week the parents were debited with so much paper advanced to their young hopefuls and the relative standing of the boys was determined by the amount of paper and chips they acquired from, or lost to each other, during the course of the term. Yet this picture is but the carrying to its logical conclusion of the more materialistic tendencies of American education. And the commissioners seem to find these laudable. “Better,” they would say, “love education as a means to an end than not at all. When a people is educated it will surely gain a higher outlook and come to love education for itself.”

The two commissioners deputed to report upon medical education were Dr. Gaskell of Cambridge and Dr. Rose Bradford of University College, London; Dr. Gaskell upon the teaching of primary subjects (anatomy and physiology). Dr. Bradford upon instruction in the final subjects. It is impossible for us to give their reports in detail. For

full abstracts we would refer to the British Medical Journal of April 23rd. "To my mind," says Gaskell, "two of the most striking points about the laboratory instruction of all kinds in the States is the energy and activity displayed by the teachers; their constant endeavour to do their utmost without sparing themselves, and the determination of the students to be taught. I do not think it is only because the practical work counts in the final examinations that they attend and work steadily, but because they want to get their money's worth. They have come to the university to be educated for the medical profession, and the stimulus of want of means spurs on a large number, with the net result that the class as a whole attends well, works well, and soon becomes thoroughly interested in what must interest everyone—the discoveries of science." And says Rose Bradford, in his final paragraph—"to sum up the general impression it may be said first, that the general enthusiasm of the teachers and the students was one of the most striking features of my visit."

With regard to the methods of education in anatomy and physiology, Gaskell points out that there is no common method, that this is a period of unrest and uncertainty, a period of transition; each school is experimenting, striving to work out its own salvation and to develop methods which shall be neither German nor Scotch, but American. Like Bradford, he points to the passing of the didactic lecture and, with him, doubts whether this is not, in large measure, a mistake; he cordially recommends the "unit system" as carried out at Harvard and now at Toronto; he cannot recommend the extreme "concentration" method of learning a subject, which Harvard has introduced, but would prefer to spread the courses in physiology and anatomy over two years. He believes in the conjoint course of six or seven years for the academic and medical degrees—the method, if we mistake not, first established by his own university of Cambridge—and he favours the taking into account, for determining the status of the student, of all the work done during the term.

A serious weakness throughout American schools, in his opinion, is that the democratic idea assumes an equality in the students and therefore the same instruction is given to all,—the same lectures, the same recitations, the same laboratory work; there are no "honours courses," properly so-called, for the more promising students and, we may add, the man who scrapes through on a minimum of knowledge, gains the same label from his university as does the head of his year; there are no "honours degrees." All are supposed to go the same pace, which cannot, therefore, be the pace of the quickest; so that if the system may mean, and he believes does result in, the levelling up

of the lowest class, it must at the same time mean the levelling down of the highest class.

Rose Bradford praises the wonderful laboratories and their equipment in the leading universities; the great development of practical teaching in non-clinical subjects; the admirable systematization of the instruction given; the scientific investigation of disease by the student in the clinical laboratories. As a pathologist, he approves the introduction of bacteriological teaching early in the course, together with the frequent custom of giving unknown sections and organisms to identify, and, as a teacher, regards the records carefully kept of the students' work during the term as thoroughly worthy of imitation.

We have given Dr. Gaskell's adverse criticism along with the favourable, for it applies to Canadian equally with American schools, and, to see ourself as others see us is useful; we give Bradford's because herein Canadian methods, following those in vogue in the old country, are, we hold, much superior to American.

The absence of the clerk and dresser system in the hospitals he views most adversely. "In most American medical schools there are no student clerks or dressers, and the work is done by 'internes,' who may be said to correspond to house physicians and house surgeons. The student may visit the wards with his chief for the so-called 'ward-walk' or else for systematic instruction under the charge of instructors and assistants of various orders; and all these periods are strictly limited to a certain but variable number of weeks. Apart from Canadian hospitals, the Johns Hopkins Hospital at Baltimore was the only one in the States where the system of clerks and dressers was in vogue.

"(The) two points—on the one hand the limited period of service of the visiting and teaching staff, and, on the other, the absence of the clerk and dresser system—were those that most impressed the English teacher as indicating the main points of difference in the relations of the hospitals to the teaching medical school.

"Many of the American teachers are alive to the advantages of clerks and dressers, but they point out that, under their system the students get the practical acquaintance with diseases subsequently, during their period of office as internes, at a time, moreover, when they are more fully capable of making use of the opportunities afforded them. In the English system the student becomes a clerk or dresser at a time when he knows little or nothing of medicine or surgery, and thus, they argue, the great opportunities afforded them are, to a considerable extent, wasted. \* \* \* All students cannot possibly become internes, and thus a number of men must start in practice without the advantage that the daily life in the wards in contact with disease

imparts. I was informed upon numerous occasions that about half the students in the leading medical schools become internes subsequent to graduation, either in hospitals attached to their own schools or in some other city and provincial hospitals (Surely this is a generous estimate!); so that at least fifty per cent. of the students not only graduate, but pass into practice without this invaluable experience."

It is only natural that in this review of the leading medical schools, the Canadian, being based largely upon the English model, receive little comment. Dr. Bradford notes with apparent approval that at McGill the chemistry for medical students is under the charge of a special professor of chemistry, who teaches the subject from the standpoint of medicine. As he is not only a chemist but also a graduate in medicine the objects of the medical student in studying chemistry are steadily kept in sight throughout the course. He notes similarly that in Toronto the Professor of Medicine compels each student in the course of his curriculum to make at least twenty examinations of sputum, blood, stomach contents, etc., and to record the results. Dr. Gaskell details the curriculum of the conjoint course at Toronto, and gives also the earlier established special combined course at McGill. Comparing them, the Toronto curriculum appears to us the better.

Concerning Canadian institutions, other than medical, Principal Reichel more particularly makes some interesting remarks. Thus of the Guelph Agricultural College he states that at other agricultural institutions throughout the States he was strongly urged not to leave without seeing it. More than one expert described it as the highest type of agricultural college upon the continent—"the Mecca of American agriculturists"—and his remarks upon its methods and courses are most laudatory. Of Queen's University at Kingston he says: "Its whole life and tone recall to me the Scottish academical ideal of plain living and high thinking. Of all the educational institutions I visited upon the American Continent, none left upon me so strong an impression of doing high class work with scanty resources." At McGill, the Science and Applied Science courses most impressed him and a list is given of graduates of the school of applied science who are now heads of great industrial concerns. "The whole institution leaves a strong impression of academic statesmanship and power of growth," and he quotes as the most remarkable instance met with by him of the appreciation by great industrial undertakings of university education, the department of railway engineering now being established in McGill by the Canadian Pacific, Grand Trunk and other lines running into Montreal.

## THE PRELIMINARY QUALIFICATION.

The wearying controversy about the requirements which shall be demanded of students about to begin the study of medicine is upon us again. Ten years ago we thought the thing was at an end, when the possession of a Bachelor of Art's degree was declared to be a sufficient qualification, and that conclusion was only arrived at after a struggle lasting over three years. Not twelve months ago the question was opened up again by a proposal, that nothing less than the *cours classique complet* should be accepted. That proposal originated within the council of the College of Physicians and Surgeons, but it was quickly though graciously abandoned, and all were duly thankful.

The controversy has now been transferred to the legislature, by Dr. Lacombe, who has introduced a measure intended to nullify all past enactments, and to compel all students, whether holders of degrees or not, to conform to one standard of examination. All parties to the discussion agree that the standard should be high; the higher it is, the better all will be pleased. The question turns upon the nature of that standard. Each section of the community has arrived at the conclusion that a certain system of education is the most suitable to its nature, temper and character, and it has arrived at that conclusion by a long series of events, which go far back in the history of the race to which it belongs.

French-Canadians believe that the thing for them is classics and philosophy. The English believe that the thing for them is literature at large and a keen perception of the facts of life. To their practical and experimental temper, classics is scholasticism and philosophy a mediæval survival. We do not undertake to say which is best, any more than we should attempt to decide which is better, a fish or a dog.

But we do undertake to say, that there is no power which shall compel us to adopt a view of education, which is alien to our habit of thought. We are equally resolute that we will not attempt to force upon others an acceptance of the views which we hold. That is the thing which the Legislature of Quebec is attempting to do, to compel our sons, if they would practice medicine in their own country, to engage in a course of preparation which we believe is not only useless but harmful.

It is not that we have any objection to that form of theological teaching, but we hold that education and theology are not by nature indissoluble the one from the other. Is it then the intention of our fellow-countrymen to enforce such a measure upon us? What would they think of the suggestion, that they should send their sons to a Wesleyan theological seminary, to the Diocesan or Presbyterian Theological College?

## BY GRACE OF LEGISLATURE.

At the time of the present writing, the bill introduced in the Legislative Assembly of Quebec, by M. Taschereau, to permit some two hundred and sixty young men to enter the medical profession without having complied with the requirements of the law, has not yet passed into effect. The more carefully the bill is examined the more scandalous does it appear. It aims to commit an act of injustice to the profession as a whole, and to break faith with the large body of students who have actually complied with the stringent regulations now in force. It throws all government into disorder, and brings contempt upon the Legislature itself, by creating the impression that legal enactments are of no higher value than a whim or fancy, which may be cast aside when the mood has passed.

A feature of the controversy which has not escaped notice is the ranging together on the one side of the French and English members of the profession. A majority of the students of Laval have memorialized the Premier against the bill. A meeting of the physicians of the district of Montreal, chiefly French, was held at Laval, and a resolution in the strongest terms was adopted condemnatory of the bill. The Medico-Chirurgical Society, chiefly English, pursued a similar course, and sent a deputation to Quebec jointly with La Société Médicale to oppose the provisions of the measure.

If this bill become law, the whole question of medical education will have to be taken up anew, and with all the forces of intelligence, French and English, upon one side, in opposition to the forces of ignorance, which have their seat of election in the legislature, it is easy to foresee what the result will be. It is intolerable in a civilized community, that a large profession, which has for its chief concern the welfare of the public, should have to devote so large a part of its energy in defending the people against the vagaries of their own legislators.

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Attention is again directed to the Second Congress of French-speaking Physicians, which will be held in Laval University on the 28th of June. The congress is open to physicians speaking other languages than French; indeed, they have been invited to share in the deliberations. The experiment is novel and sure to be interesting.

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Dr. J. T. Halsey, assistant professor of pharmacology in the Medical Faculty of McGill University, has resigned that position to join the faculty of Tulane University in New Orleans, his native city. Dr. Halsey came to McGill, well equipped for his work by foreign study and by natural aptitude. The experience he has had since and the success

he has met with will make him a valuable addition to this prosperous southern school.

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The Ontario Medical Library Association, the Clinical Association and several other medical organizations have decided to establish a club in Toronto for the use of the profession. The Thorne residence, 9 Queen's Park, has been secured, and will be turned into a clubhouse and library. It has been felt for some years that such a social club would be most desirable, and it is expected that the organization will have a large membership, resident and non-resident.

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The Provost, trustees and medical faculty of the University of Pennsylvania have issued invitations to the opening of the new medical laboratories for the 10th of June. The invitation is accompanied by a complete description of the noble building and equipment for the teaching of pathology, physiology and pharmacology. There is also a historical sketch of the teaching in the faculty since 1765, which well illustrates the progress of medical education in the two past centuries.

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The civic hospital for Protestant contagious diseases is not dead; it is only asleep. A site has been secured, a certain amount of money has been promised and plans are in course of preparation. That is something, and in two years it is probable that the institution will be open for the reception of patients. Two years is not a long time in the history of the race; it is very long in the life of a child suffering from scarlet fever or diphtheria. The hospital for French patients is doing better and construction is well under way.

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The Taschereau bill introduced into the Quebec legislature has been passed after severe amendment. As matters stand now, holders of university degrees in medicine will be permitted to give evidence of preliminary qualification at any time, either by presentation of diplomas, or by passing an examination. This, in short, abolishes the four years' interval between the time of passing the examination and receiving the license to practise. The bill introduced by Dr. Lacombe to destroy the value of the Bachelor of Arts' degree as a qualification has been dropped.

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The Royal College of Physicians and Surgeons of Kingston is to be revived, with Senator Sullivan, one of the charter members, as president. This corporation has a royal charter, issued in 1866. Since the Queen's Medical College resumed its relation with Queen's University the Royal College has been dormant. It is now proposed to

revive it and utilize its examining powers in granting fellowships and degrees. This degree can be secured on examination, and by a thesis by doctors of five years' standing. Since 1892 the Royal College has conferred one or two degrees, but now it is proposed to thoroughly reorganize it.

The Montreal League for the Prevention of Tuberculosis has issued through the Board of Health a series of five leaflets dealing with the various aspects of the disease. The subjects are: What is Tuberculosis; How to avoid contracting Tuberculosis; How persons suffering from Tuberculosis can avoid disseminating the disease; How employers of labour may assist in preventing the disease; The predisposing causes of Tuberculosis, and the regimen of life for those suffering from the condition. The whole ground is well covered, and the information is conveyed in temperate language. The League has also concluded arrangements with the Board of Health to disinfect every house in which a death from tuberculosis has occurred.

### Reviews and Notices of Books.

A SYSTEM OF PRACTICAL SURGERY. By Prof. E. von Bergmann, M.D., Berlin; Prof. P. von Bruns, M.D., Tübingen; Prof. J. von Mikulicz, M.D., of Breslau. Translated and edited by William T. Bull, M.D., Professor of Surgery, College of Physicians and Surgeons, Columbia University, New York, and Walton Martin, M.D., Instructor in Surgery, College of Physicians and Surgeons, Columbia University, New York. Vol I. Surgery of the Head. Lea Brothers & Co., New York and Philadelphia, 1904.

The first edition of this System of Surgery appeared in Germany during the years 1900 and 1901, and was at once recognized as a notable work. Its appearance was immediately followed by translations into Spanish and Italian, and its first edition was in such demand that the earlier volumes were out of print before the later ones came off the press. The edition is made up of four volumes, and it is the second edition, carefully revised and brought thoroughly up to date in regard to literature and new matter which forms the basis of the present translation. The work has been done by the collaborators with great fidelity and thoroughness. They have brought to their task keen enthusiasm and wide surgical experience, enabling them to add judicious references to the methods of practice which are preferred by English and American surgeons, and they have increased the number of illustrations by drawing on the material found in recent German literature.

This system places before English readers one of the most comprehensive and highly esteemed works on surgery yet published. The first volume deals with the head, face and jaws. The chapter devoted to injuries and diseases of the brain and cranial nerves is of very great importance, and contains an account of Kocher's valuable experimental work elucidating the complex subject of cerebral compression. This subject restricts the term concussion to those momentary periods of unconsciousness due to temporary anæmia; if the unconsciousness is at all prolonged, there has occurred either a minute or gross lesion of the surface and of the smaller vessels. The chapter on Cleft Palate, and the diseases of the jaws are well done, and the illustrations serve their purpose remarkably well.

All the articles are lengthy, but full of interest in the handling of details, and the work as a whole is deserving of the highest commendation.

Since the previous writing the second volume has come to hand. It deals with the surgery of the Neck, Thorax and Spinal Column. The contributors to it are v. Argerer, v. Bruns, Erhardt, v. Eiselsberg, Heule, Hofmeister, Jordan, Kummell and Riedinger. A careful examination of the book entirely confirms the favorable opinion which was formed by a reading of the first volume.

Clinical Lectures on Diseases of the Lungs and Heart. By J. A. Lindsay, M.D., F.R.C.P. (Lond.), M.A. London, Baillière, Tindall & Cox. Toronto, J. A. Carveth & Co., 1904.

Practical clinical lectures should, in order to justify their publication, be such as to supplement in one way or another the best text-books we have. They should deal with special problems not easily included in an ordinary work of a general character, and by their classifications of causes, symptoms and differential diagnoses, by their suggestions as to special lines of treatment and their broader considerations of prognosis, give valuable aid not alone to the student of medicine, but equally so to the practitioner. The book under review has carried out this plan in a most commendable manner, and we find various medical problems treated with care and thoughtfulness, and conclusions drawn which are based on a wide experience or at all events a due regard to the local statistics. The chapter on the interpretations of history in disease is perhaps more suited to the senior medical student, as are also the considerations of methods of physical examination. Many other subjects, however, cannot but be of great interest and usefulness to all practitioners and teachers of medical students, and we are indebted to the author for careful (even though perhaps not very detailed) classifications of causes and symptoms of thoracic disease. The prognosis of pulmonary phthisis is carefully and sanely considered and there is an interesting chapter on

some of the Rare Forms of Pulmonary Diseases. The author is guarded in his considerations of prognosis, which quite accords with the views of one of our greatest American authorities, who believes that "we know nothing whatsoever of the prognosis of pulmonary tuberculosis." In the treatment of heart lesions we would like to have seen more consideration for the value of venesection in treatment. The difficult question of prognosis in cardiac disease is treated with judgment and detail, and is a valuable *exposé* of the subject. We believe that all practitioners would do well to possess a volume which is so essentially practical in its object.

Physical Education by Muscular Exercise. By Luther Halsey Gulick, M.D., Director of Physical Training in the Public Schools of Greater New York. Philadelphia: P. Blakiston's Sons & Co. Toronto: Chandler & Massey.

This book is unique in the literature of Physical Education, in that it is a series of reflections on the various questions that go to make up this many-sided subject, a sort of "common-place book," in which the ideas are far from commonplace.

Beginning with such topics as exercise and evolution, city life and exercise, school life and other special occupations, the writer goes on to the physiology of exercise, basing his conclusions on the best work done recently on the subject.

The difference between automatic rhythmical exercise and that requiring concentrated attention is well shown, and throws much light on the vexed question of gymnastic drills to music versus Swedish gymnastics to command.

The physiology and chemistry of muscle and nerve fatigue are analysed, and specialization in training is discussed and its limits indicated. The general laws for prescribing exercise to a patient are formulated under the title of Dosage, while a chapter entitled *Materia Gymnastica*, reviews the resources of the gymnasium and the relative merits of the better known and more commonly practised games and sports in a way that will be of the utmost value to the medical practitioner whose advice is so often asked.

The German, Swedish, English and Delsarte systems are passed in review and the contributions to physical training by Dr. Dudley A. Sargent, C. W. Emerson, and the Y. M. C. A. training schools are described and discussed.

Altogether it would be hard to find a book of four times its bulk that would bring together and elucidate the present day knowledge on physical education in all its varied aspects with such thoroughness as has been done in the sixty pages of this little volume.

A Guide to the Clinical Examination of the Blood for Diagnostic Purposes. By Richard C. Cabot, M.D. Fifth revised edition. New York: William Wood & Co. Toronto: Chandler and Massey, 1904.

The new edition of this well-known text-book on blood examination contains much of interest to the clinician. During the past two or three years attempts have been made to obtain a rapid method of fixing blood films, so that stained specimens could be examined immediately. The older method of fixing by alcohol and ether required several hours' immersion in addition to the employment of heat and the use of special apparatus. Jenner introduced the use of methylic alcohol as both a solvent for the stains used and a means of fixing blood films. Leishman improved and simplified the method of using this stain and Wright's modification known as the "L. W." stain, is the one recommended by Cabot as giving better results in his hands than any of the older stains. The whole process does not require ten minutes, and according to the author this stain is the best, not only for the red and white cells, but also for the malarial plasmodium. Three excellent coloured plates are introduced depicting the colouring obtained by the use of this stain.

The plates in the former editions were done by Funke of Leipzig, those plates which are new in this edition are by Walker of Boston, and are even better. The description of the blood in the various diseases remains much as it was, though there are minor alterations worth noting.

In the classification of normal leucocytes Cabot makes only four instead of the usual six or more divisions. These are: polynuclear, lymphocytes (large or small, including transitional forms), eosinophiles, and mast cells. The work will be a standard for a long time.

A Text-Book of Physiology. By Isaac Ott, A.M., M.D., Professor of Physiology in the Medico-Chirurgical College of Philadelphia: 137 illustrations; Philadelphia: F. A. Davis Co., 1904.

The author of this work is known to the physiological world chiefly through his researches in animal heat, especially in the localization of the heat centres. He tells us in his preface that the book has been prepared at the solicitation of his students of some years past; and that his aim has been to write an elementary book suitable to the medical student. According to Dr. Ott certain subjects, as electro-physiology, deserve for such a class but a scant treatment, while laboratory technique should be wholly omitted. Herein lies the strength and the weakness of the work. A book prepared specially for a teacher's own students cannot

be expected to suit equally well those given a different training or even those hearing another lecturer.

This work has only 137 illustrations, while those with which it must compete run into several hundreds. On the other hand, many of these bear on laboratory technique, one of those subjects which Dr. Ott thinks it well to pass over.

About this there will be much difference of opinion; but we think a large number of simple diagrams would have served a good purpose.

The work is of moderate size, 550 pages, and the type rather large. Seeing how often medical writers and journalists sin against the eyes we feel like giving special praise to the author and the publishers for this much neglected hygienic consideration. The book is all it claims to be, and for a large class of students it will serve a good purpose; but that it either will or should supplant any of the well-known and much-used works on physiology seems doubtful.

The commoner diseases of the eye—how to detect and how to treat them. For students of medicine, by Casey A. Wood, C.M., D.C.L., Professor of clinical Ophthalmology in the University of Illinois; and Thomas A. Woodruff, M.D., C.M., L.R.C.P., Lon., Professor of Ophthalmology in the Post-Graduate School, Chicago. C. P. Engelhard & Co., Chicago, 1904.

Surely of the making of books there is no end, and most especially does this apply to the smaller works, mainly introductory in character, which are offered to the student of medicine, when he first approaches the subjects of his curriculum. With the vast mass of material which has accumulated in the various departments of the practice of medicine the necessity of these so-called "compendiums" has become apparent.

In order to produce a book of this nature at once clear and yet not too condensed, a very careful judgment and a thorough knowledge of the subject matter are necessary, and Dr. Wood and Dr. Woodruff are to be congratulated on the success they have met with.

This little work in a very succinct manner puts before the reader the salient points of ophthalmology, and only in a few particulars is clearness sacrificed to brevity, as in the article on colour blindness where the tests might have been a little more elaborated.

The latest advances in diagnosis, treatment, and bacteriology are touched on and very clearly. The illustrations are numerous and very useful, but it is hard to see why a full page should be wasted on a catalogue illustration of a case of test lenses. No book has yet appeared which has not had its faults, but this one really fulfils the modest claims of its authors.

J. W. STIRLING.

An Atlas of Illustrations of Clinical Medicine, Surgery, and Pathology, Compiled for the New Sydenham Society (a continuation of the Atlas of Pathology): Fasciculus xvii. (double fasciculus), being vi. and vii. of New Series: Xanthelasma and Xanthoma; Changes in the skin caused by arsenic; Pemphigus and its Variants; Fractures and Dislocations Miscellaneous: Plates, A. to O. and xviii. to cxvii.

Fasciculus xviii. (double fasciculus), being viii. and ix. of the Clinical Atlas. Eruptions, etc., caused by arsenic. Plates A. to G.; Urticaria pigmentosa; plates cxviii. and cxxi. (coloured), plates E. to H. (without colour), and Illustrations of the phenomena of leprosy, plates cxxii. to cxxv. (coloured), plates I. to Z. (without colour). London, H. K. Lewis, 136 Gower Street.

The officers of the New Sydenham Society, for the year 1903-1904, are William Osler, Jonathan Hutchinson and Henry Power; the list of vice-presidents includes the names of the most eminent men in the profession, and the council is composed of physicians and surgeons who are easily first in the various subjects. This publication, the scope of which is indicated above, is worthy of so distinguished a company. The coloured plates have a remarkable fidelity to the various conditions represented and the photographic reproductions have the beauty of pictures.

The Practical Medicine Series of Yearbooks: Comprising ten volumes, issued monthly. Edited by Gustavus P. Head, M.D. Vol. IV. Gynæcology. By E. C. Dudley, A.M., M.D., and William Healy, A.B., M.D., March, 1904. The Yearbook Publishers, 40 Dearborn Street, Chicago.

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## Medical News.

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### BISHOP'S COLLEGE.

The thirty-third Annual Convocation of the University of Bishop's College was held on the 27th of May, in the Synod Hall. The address for the Faculty was delivered by Dr. F. J. Hackett, and the Degree of Doctor of Medicine was conferred upon the following graduates:—R. F. Barrett, Geo. P. Briggs, H. Byers, C. F. Crutchlow, T. T. Donnelly, F. J. Garraty, D. A. McGregor, J. J. McGovern, T. E. Watier, A. E. Wilson.

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### McGILL MEDICAL FACULTY.

The Governors of the University, on recommendation of the Faculty of Medicine, have made the following appointments:—Lecturer in Anatomy, Dr. R. Tait McKenzie; Lecturer in Physiology, Dr. A. A.

Robertson; Lecturer in Ophthalmology and Otology, Dr. W. G. M. Byers; Lecturer in Pharmacology and Therapeutics, Dr. J. W. Scane; Lecturer in Chemistry, Mr. J. R. Roebuck; Assistant Professor of Physiology, Dr. W. S. Morrow; Assistant Professor of Pathology and Bacteriology, Dr. A. G. Nicholls.

The examinations in medicine are now being held in Molson Hall; the fourth year clinical examinations are finished, with the exception of those for the Quebec Board. All examinations will be finished by June 3rd, and the Convocation will be held in the Windsor Hall on June 10th. The address to the students on behalf of the Faculty will be given by Dr. J. T. Halsey, who is about to sever his connection with McGill. The Valedictorian for the graduating class is Mr. J. L. Robinson.

### MONTREAL GENERAL HOSPITAL.

The quarterly meeting of the Board of Governors of the Montreal General Hospital was held on May 17th. The treasurer's account showed the receipts for the quarter January, February and March, to be \$34,598, a decrease of \$5,237 from the corresponding quarter of last year; the expenditure has been \$26,478, an increase of \$135.

During the quarter 754 patients were treated to a conclusion. Of this number 69 died, making the mortality rate of ordinary hospital cases 6.6 per cent.

In the outdoor department there were 9,204 consultations, an increase of 244 over the corresponding quarter of 1903. The ambulance responded to 372 calls.

Dr. McCrae resigned as resident pathologist, and Dr. D. B. Gillies was appointed as acting pathologist. The term of Dr. W. G. Turner's engagement as medical superintendent expires June 1, and Dr. Roland P. Campbell has been appointed as his successor.

In March, eight nurses passed examinations and received diplomas, making a total of 222 that have passed through the training school.

### HOTEL DIEU.

During the month of April, 200 patients were admitted, and 193 discharged; 28 deaths were registered. In the outdoor department, 460 new patients were entered. In the eye, ear and nose dispensary, 970 patients were treated; 88 major operations were performed.

The vacancy created by the death of Dr. Chartrand was filled by the appointment of Dr. L. W. Delorme as professor of practical anatomy. Dr. Delorme has been connected with the dissecting room for the last fifteen years, as demonstrator.

### ROYAL VICTORIA HOSPITAL.

Monthly Report for April, 1904: Patients admitted, 273; discharged, 252; died, 18; medical, 87; surgical 119; ophthalmological, 27; gynæcological, 29; laryngological, 11; total, 273. Out-door department, medical, 806; surgical 419; eye and ear, 356; diseases of women, 110; nose and throat, 228; total, 1919. Ambulance calls 63.

### WESTERN GENERAL HOSPITAL.

During the month of April, 48 patients were admitted, 43 were discharged, and three died. In the out-door department there were 663 consultations, of which 232 were medical, 79 surgical, 138 gynæcological, 47 eye and ear, 90 nose and throat, 29 skin and 48 genito-urinary.

### NOTRE DAME HOSPITAL.

During the month of April, 152 patients were admitted, and 153 discharged. The patients at the out-door department were 1,591, and the ambulance calls 96.

Thirty-seven students have been granted the degree of Doctor of Medicine by Queen's Medical College: R. W. Bailey, M. E. Branscombe, B.A.; W. C. Brown, J. S. Carruthers, J. C. Caskey, A. K. Connolly, T. J. Costello, E. W. Delong, A. C. Driscoll, A. D. Falkener, L. A. Ferguson, A. A. Ferguson, J. V. Gallivan, W. Gibson, J. J. Gillespie, J. R. Goodfellow, J. A. Graham, T. J. Gray, L. W. Hoppins, E. C. Kinead, A. J. Lalonde, G. C. Leach, B.A.; R. A. Lee, A. T. Munro, F. C. McCullough, H. A. McDonald, M. McGonigle, N. I. Pennock, Miss Victoria Reid, B.A.; E. J. Robinson, S. H. Rutledge, A. H. Singleton, B.A.; N. Smith, H. Tandy, B.A.; E. J. F. Williams, B.A.; C. S. Vanness, J. M. Young, B.A.

The Toronto Western Hospital has purchased the site of four acres on Bathurst street which has been held for five years under lease, and plans are now completed for an addition to the present accommodation. The hospital has now over 100 patients, and will then have beds for 150.

The American Medico-Psychological Association will hold the sixtieth annual meeting in St. Louis on May 30th and 31st, and it will continue during the 1st, 2nd and 3rd of June. Amongst the contributors from Canada are Dr James Russell, of Hamilton.

The twenty-fourth annual meeting of the Ontario Medical Association will be held in Toronto, in the new Medical Buildings, Queen's Park, on the 14th, 15th and 16th of June.

A by-law to prevent spitting on sidewalks and in public buildings and street cars was passed by the Council of the Corporation of the City of Toronto on the 11th of April.

The American Pediatric Society held the sixteenth annual meeting at Detroit on May 30th and 31st and June 1st.

Lord Strathcona has contributed a thousand dollars towards the new Royal Jubilee Hospital at Rat Portage.

Dr. W. W. Wickham of Tignish, Prince Edward Island, died at St. Agathe on the 13th of May after a year's illness from phthisis.

Dr. J. P. Chartrand, of Montreal, Professor of Practical Anatomy, Laval University, died suddenly on the 26th of April, 1904, in the 43rd year of his age.

## Retrospect of Current Literature.

### SURGERY.

UNDER THE CHARGE OF GEORGE E. ARMSTRONG.

THOMAS S. CULLEN, M.D. "Tuberculous Stricture of the Ascending Colon with Sudden Total Obstruction of the Bowel; Perforation of the Intestine; Removal of the Cæcum and half the Ascending Colon; Recovery. *The American Journal of Medical Sciences*, March, 1904.

This interesting and unusual case shows the insidiousness of tuberculous disease, the rare, but possible, complication of a sudden total obstruction coming on without any previous symptoms of a definite lesion, and the practical impossibility of diagnosing the case from one of appendicitis. Though tuberculous ulceration of the intestine is relatively frequent, stricture of the lumen of the bowel is somewhat rare. In 1,000 autopsies on tuberculous patients intestinal lesions were found 566 times, but in only nine was there a more or less definite stricture. The stricture is usually single, and is situated at the ileo-cæcal valve, when multiple they are almost invariably found in the ileum. The chief points in the histology, clinical history, diagnosis, and treatment are briefly reviewed, followed by a description of the case.

As regards the diagnosis of a purulent condition, Charles E. Simon lays much stress upon the frequent absence of eosinophils where pus is accumulating, and thinks this sign is of more practical importance than the degree of leukocytosis. The writer claims very

gratifying results in cases where the pelvis has been filled with pus by loosely packing the pelvis with gauze so as to prevent the intestinal loops from dropping down and becoming adherent or kinked in the pelvis and so causing obstruction.

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JOSEPH H. BARNHAM, M.D. "Suture of the Omentum to the Parietal Peritoneum (Epiploxy) for Ascites. *Medical News*, March 5, 1904.

The history of cirrhosis of the liver with ascites is usually progressive with fatal termination in nearly all cases. In old cases of this disease adhesions are often formed between the omentum and parietal peritoneum containing many large veins which show an effort of nature to establish a collateral circulation and relieve the congested portal system. The writer's case presented the usual symptoms of a fairly well advanced case, and at the operation about 6½ gallons of a slightly blood-stained fluid were removed. She had never been tapped before. The peritoneum was greatly engorged, liver slightly nodular and about half its ordinary size, and the omentum adherent to the parietal peritoneum on each side, the adhesions being very vascular. The middle portion was sutured to the abdominal wall on each side of the incision, and a gauze drain inserted. Large quantities of fluid came away, and the edema of the feet and legs disappeared during the first two days. The general condition was always satisfactory and improvement marked. About one year later a pleural effusion formed and five quarts of bloody serum were withdrawn. Some observers think that the ascites of liver cirrhosis is due largely to blood changes secondary to the liver congestion. If this be so and the pleuritic effusion in the case was the result of such changes, the absence of a recurrent ascites speaks strongly for the operation. The possibilities of this operation are limited by the liver condition. In cases where the cells of this organ are so destroyed that its functions are lost, the result is fatal and the operation necessarily a failure. It is only in the less common cases where the destructive processes can be arrested that we can hope for a cure. In others, where the degenerative processes are slow the patients may be relieved. He is against curretting or irritating the surface of the liver and suturing it and other solid organs to the abdominal wall, and regards it as a more dangerous procedure, attended by a high mortality, and not likely to secure the desired effect. Simple suture of the omentum with gauze drainage gives the best results with the minimum amount of danger. The case shows the following points of especial interest. The presence of vascular adhesions showing the effort of nature to

form collateral circulation; the subsequent pleural effusion with no ascites points strongly to good collateral circulation for the portal system. The marked improvement in the patient's general condition shows better functioning of the liver and intestinal organs after the operation.

W. L. B.

DR. H. KÜMMELL. "The Newer Methods of Examination in Cases of Kidney Disease." *Arch. f. Klin. Chir.*, Bd. 72, Heft. 1.

In this subject Kümmell, of Hamburg, is probably the most experienced man in Germany, and his conclusions deserve attentive consideration. Needless to say, he is a firm believer in the value of the finer diagnostic methods—when used by the expert and with judgment. But it is the duty of the surgeon to become expert and to acquire judgment.

In brief, his conclusions, based on several hundreds of cases, are as follows: Renal calculi are demonstrable (by the X-rays) in all cases, if you only know how to do it. Careful posturing of the patient, a soft tube, the taking of a number of plates, in each of which a shadow is found at the same place, and the possession of a trained eye are essential. (For more detail the interested reader is referred to another article in *Beiträge zur Klin. Chir.*, Bd. 37, Heft 3.)

Catheterization of the ureters is the only absolutely certain way of getting "kidney urine," and it is used by Kümmell as a normal procedure. The various instruments for intravesical separation of the urine (Newmann, Down, Luys, Cathelin) are not perfectly reliable, but are useful in exceptional cases, where the other is impossible. To determine the degree of kidney function, Kümmell has used all the various methods lately advocated; methylene blue, phloridzin, electrical conductivity, and cryoscopy of the urine, but especially of the blood. The latter he regards as the best, and has used it most. He believes one is justified in laying down the law, "that with a normal molecular concentration of the blood, there cannot be present any disturbance of general kidney function; that the latter is, in the great majority of cases, the result of a bilateral kidney lesion; and that a heightened molecular concentration of the blood is a positive indication of bilateral disease.

The usefulness of this law in its application both to prognosis and to the determination for or against operation is demonstrated by Kümmell in a large number of cases. Where cryoscopy of the blood shows a heightened molecular concentration, nephrectomy is not permissible, for there is present disease of the other kidney. In a statistical table including 168 kidney operations of his own, 70 of which were not in-

vestigated according to these finer diagnostic methods, and 98 of which were, Kümmell demonstrates the practical value of these methods, in that the better selection of operable cases allowed has reduced the mortality of 28 per cent. in the 70 cases to 8 per cent. in the 98 cases. His nephrectomy mortality he has reduced to 4.8 per cent.

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GWILYM G. DAVIS, M.D., M.R.C.S., Eng. "The Operative Treatment of Trifacial Neuralgia. With report of Case of Removal of the Gasserian Ganglion for Recurrence following Intracranial Neurectomy of the Superior Maxillary Nerve." *University of Pennsylvania Medical Bulletin*, April, 1904.

The patient was a man aged forty-nine, in whom the disease had existed for seven years. The attacks were typical. Two and one-half years before intracranial neurectomy of the superior maxillary nerve was done, the infraorbital nerve had been excised and relief gained for a year. A similar operation was performed six months later, but with only a few days of relief. He then came under the writer's care, who decided to operate upon Meckel's ganglion by the Carnochan method. The previous operations on the infraorbital nerve made it impossible to utilize it as a guide to the ganglion and complete removal could not be accomplished. This operation gave relief for three or four months, and then the intracranial neurectomy was performed. This operation gave relief for a little over two years, when removal of the ganglion, after a modified Hartley-Krause method was performed. Eight months after this operation the patient was free from any return of the symptoms, but the eye had to be enucleated. There was temporary paralysis of the third and fourth nerves and persistent paralysis of the sixth.

Van Gehuchten, a translation of whose paper on this subject appears in the same issue, believes that the tearing out of the peripheral branches is a perfectly rational procedure for the permanent cure of the neuralgia, but in the case reported the superior maxillary nerve was thus removed and yet two years later was found to be completely regenerated and was removed with the ganglion. Reference is made to the favourable result obtained by Frazier and Spiller in their case as well as to five cases of Abbé's method which have remained cured for periods of six months to six years. The writer favours ligating the external carotid, but does not advocate removal of the zygoma, claiming sufficient room can be obtained without doing so, and the ganglion as readily removed by the use of properly designed elevators.

W. L. B.

## MEDICINE.

UNDER THE CHARGE OF JAMES STEWART, F. G. FINLEY H. A. LAFLEUR AND  
W. F. HAMILTON.

### TYPHOID FEVER.

Sir WILLIAM BROADBENT.—“Enteric or Typhoid Fever.”

Dr. F. M. SANDWITH.—“Enteric Fever, with special reference to Egypt.”

Dr. ANDREW DUNCAN.—“Enteric Fever in India.”

JAS. CANTLIE, M.B.—“Typhoid Fever in China.”

Dr. H. H. TOOTH.—“Some reflections on Enteric Fever infection in Camps.”

Dr. GEO. NEWMAN.—“Channels of Typhoid Infection in London.”

Dr. H. E. LEIGH-CANNEY.—“Ætiology and Prevention of Enteric Fever.”

Dr. CHAS. BOLTON.—“Rigors in Typhoid Fever apart from any recognisable complication.”

Dr. A. E. WRIGHT.—“Anti-typhoid Vaccination I.”

Dr. A. E. WRIGHT.—“Anti-typhoid Vaccination II.”

Sir JOHN W. MOORE.—“The Treatment of Enteric Fever.”

Dr. HERBERT P. HAWKINS.—“The Treatment of Enteric Fever.”

Dr. HECTOR MACKENZIE.—“On the importance of an early diagnosis of perforation in Typhoid Fever.”

Dr. THOS. MCCRAE.—“The Treatment of Typhoid Fever in Johns Hopkins Hospital.”

Dr. R. TANNER HEWLETT.—“Paratyphoid Fever.” *The Practitioner*, London, January, 1904.

Dr. CLAUDE B. KER.—“The Diagnosis of Typhoid Fever.” *The Practitioner*, March, 1904.

WELLS and SCOTT.—“The Pathological Anatomy of Paratyphoid Fever.” *The Journal of Infectious Diseases*, January, 1904.

From time to time we have welcomed the *special* numbers of *The Practitioner* devoted to a careful study of the more important diseases acceptable alike to students of medicine the world over. The January number is devoted to Typhoid Fever—a subject of universal interest and so broad as to require space for a few articles in the February and March issues, which are also before us. The introductory paper by Sir William Broadbent carries one in a general way over the subject matter of the various contributions, here and there comparing notes made by the different writers.

As we have seen from the list of papers, we are afforded a view of the characteristics of the disease under discussion, as it manifests itself in Egypt, India and China. Dr. Sandwith, while admitting that there

is apparently some immunity to typhoid fever in tropical and subtropical countries, clearly shows that the view that the adults are immune because most Egyptians suffered from the disease as children is erroneous. The evidence adduced upon this point is derived from seven hundred autopsies upon children under 5 years of age, from amongst the poorest of the Egyptians; from clinical evidence in several hospitals and from the serum test. There is found no support for this theory. Typhoid fever is seldom absent from the European hospitals in Egypt, while in the Egyptian Government hospitals it is rare indeed. Six cases in twelve years were recognized among 8,752 patients in the medical ward. In 1,935 autopsies not a case of enteric fever was met with. In the army, in contact with Europeans the young native recruit becomes liable to enteric. The view is expressed that Egyptian town dwellers suffer more from enteric fever than they did 15 or 20 years ago. In some respects the views concerning enteric fever in India are the same as those in Egypt. It was held, some years back, that enteric fever did not exist in India. It became increasingly prevalent, for obvious reasons, after Surgeon-General Sir Anthony Home "ordered that all cases of fever, in which at the necropsy ulceration of the intestines was found, were to be returned as enteric fever." The natives have typhoid, although previous to Ewart's writing in 1856 they were said to be free from it. Abundant proof of this statement has accumulated since that date.

The great and increasing prevalence of enteric fever in India is due:

- (1) To the constant arrival in that country of men (for the army) at an age most predisposed to the disease.
- (2) To the arrival of these men in a country whose soil must be everywhere impregnated with the poison of enteric fever.
- (3) To the multiple means of access of the poison to the men especially predisposed to it by their age and recent arrival.

In China the adult native is seldom attacked by typhoid. It is as elsewhere common amongst Europeans, dwelling or travelling in China. Accurate information is unavailable. Dr. Cantlie sees in the method of preparing food a protection against the disease. The water might readily bear the disease, but Chinese seldom drink cold *water*. They drink tea and congee water, i.e. the water rice is boiled in. The Chinaman does not drink milk. The Chinese children, if unable to nurse, are given congee water. Vegetables are also cooked before being eaten. It has been observed that while Europeans in China are more frequently victims of typhoid fever, the mortality among the natives attacked is very great: Chinese 57.45%; Europeans 12.08%. The system of direct fertilization of the land by sewage-material

might be considered as dangerous to the community. Dr. Cantlie shows that the fermentation which all excreta undergoes in cemented cess-pools before being used as fertilizers, renders the sewage practically innocuous.

The causes in these different countries are those which are active in the spread of this disease the world over:—Water, milk, ice cream, oysters, salads and uncooked vegetables, flies, sandstorms, dust, and insanitary houses. The course taken by disease in those in India and Egypt and China differs in some particulars from that familiar to us. In India there is marked prostration and hebetude with delirium. This is common with other diseases. The temperature chart is rarely typical either in native or European. The eruption is exceptional among the Chinese. The symptoms are less pronounced than among Europeans.

In discussing enteric fever infection in camp life, Dr. Tooth points out that in army life, sand storms and flies enter largely into the question of spread,—that the conditions of life in tents, accommodating twelve men or even more, may favour direct infection, especially as one of the twelve, for several nights, may be the subject of undeclared typhoid fever, and that diarrhoea from any cause, so common in camp, increases the susceptibility to the enteric bacillus.

Dr. Newman in considering the subject of Channels of Typhoid Infection in London, starts out by assuming the comparative improbability of typhoid fever being water borne in that City, and while granting that it is not asserted that water-borne infection never occurs in London, he suggests that it is by no means the commonest channel.

“Amongst a wonderful variety of suggested means of infection two emerge and, year by year, occupy a more prominent place in the records. The first is infection by contact, with persons or belongings of previous cases, and the second is infection by the conveyance of the virus in food, particularly shell fish.” A satisfactory amount of evidence is advanced in support of both these views as they apply to the world’s metropolis. And the prevailing conditions there are not widely different to those elsewhere in respect of the spread of disease.

From Dr. Canney’s comprehensive paper on the *Ætiology and Prevention of Typhoid Fever*, a portion of his summary must suffice. “The human body is the natural habitat of the bacillus in its virulent form. . . . . The chances of its disappearance from the community are very great if its wide diffusion in its human host in epidemic form is prevented by protection of the liquid avenues. . . . . from contamination.”

“The growth of the typhoid bacillus takes place in the body of the typhoid patient practically exclusively. It is discharged with the

intestinal and urinary excretions and gains access to another individual through the mouth and stomach. Entry through the air passages is quite exceptional.".....

"The theory that typhoid may result from the inhalation of putrid gases must be abandoned....."

Dr. Canney encourages the hope that in a reasonable time the disease may become totally extinct from the community, neighbouring communities and finally from the civilized world on the grounds, (1) that the growth, development and spread of the bacillus are practically limited to the human body; (2) that the saprophytic existence of the bacillus in various media, etc., is so short and precarious that with ordinary attempts at sanitation the incidence of the disease is enormously reduced, etc.; (3) the fact that when once a community is free from the disease for a short time it will, even in the presence of gross sanitary defects remain free indefinitely, or until such time as the bacillus is imported into the community.

Inoculation against typhoid is touched upon, but that part of our subject may be left until Dr. Wright's papers are taken up. The writer urges the most careful nursing of all cases of typhoid fever for the public good as well as for the patient's safety and recovery. If overcrowding, the case should be isolated.

Urotropine should be given towards the close of the illness and should be considered as essential for some days. A temperature normal for a fortnight, and urine free from typhoid bacilli, are the conditions in convalescents otherwise not requiring treatment, on which patients should be allowed out.

Dr. Bolton presents a case report of Typhoid Fever with rigors, and reviews the literature upon this subject. The patient, a nurse of 24 years of age, fell ill with the typical signs of a severe attack of enteric fever. On the nineteenth day of the fever, concurrent with an attack of diarrhoea and an intestinal hæmorrhage—blood in clots—she had an alarming chill, "the first of a series of twenty-one." The last occurred on the 63rd day of the disease, during what appeared to be an intercurrent relapse. The convalescence was uninterrupted. The patient left the hospital on the 115th day of the disease. The range of the temperature was from 97 2-5° to 107 4-5°. The only other associated condition, apart from hæmorrhage and diarrhoea, was a slight swelling of the legs and delirium. In his review of the literature, Dr. Bolton includes the various explanations, which clinicians have offered for this very exceptional feature in typhoid fever. They include intestinal irritation, toxic absorption occurring suddenly when the thermogenetic centres are impressionable; the substitution of rigors for delirium as

a convulsion may take the place of a rigor; thrombosis of branches of the mesenteric veins; pylephlebitis; malaria; mental shock; use of antipyretics, etc. All the writers insist that rigors do not affect materially the prognosis.

Along with the consideration of typhoid fever in a series of articles, such as these, must be included that now well recognized condition described under the term para-typhoid fever. The two articles devoted to the subject are comprehensive, and summarize practically all that is known of it. In a retrospect of medicine, written some eighteen months since, this subject was taken up, but, considering the comparative newness of the work and its importance, a resumé is justifiable.

“With refinements in the technique of the clinical application of the agglutination reactions, together with the more frequent application of cultural investigation of the blood in typhoid and other febrile diseases, has come the observation of a distinct set of cases of typhoid-like character, that are caused by organisms intermediate between the typhoid and the colon bacillus.” The process of differentiation which began with Sir William Jenner, who separated typhoid from typhus, has continued until we now consider typhus, and typhoid and Malta fever and para-typhoid as distinct diseases with different causes. The name para-typhoid appears to have been first used by Achard and Bensaude in 1896. The clinical features of cases of para-typhoid resemble those of typhoid so closely as to be indistinguishable without the Widal test. Doubtless the negative finding in cases clinically typhoid, together with the knowledge that an organism intermediate between the typhoid bacillus and the colon bacillus often infested the intestinal tract, led to the recognition of this new disease. The blood serum from such patients agglutinates both the A and B strains of paratyphoid. The disease in its occurrence is widespread, cases having been reported from England, France, Germany, Holland, United States, Canada, Philippine Islands and Cuba. It may be fatal and five cases such with anatomical findings have been reported. The summary of fatal cases as afforded by Wells and Scott, goes to show that paratyphoid infections are accompanied by changes quite different from those of typhoid, and there is but little to differentiate it anatomically from other septicaemias. The most constant change in the splenic enlargement similar to that in typhoid fever. Ulcers of the intestine have been found in only two cases, differing entirely from those of typhoid, and resembling those of dysentery. There was a practical absence of any alteration of Peyer's patches or of the solitary follicles. The mesenteric glands were almost unaltered. The liver in two cases showed typical focal necroses, differing from those of typhoid in not containing

endothelial cells. While the fatal cases, according to Hewlett, seem to have been all infections from the B bacillus, the organism isolated in a case of Wells and Scott belong to the A group.

Doctor Ker's contribution to the articles on typhoid fever, deals with the diagnosis, introducing the subject with the remark: "that it may be said with justice, that the only absolute proof of the existence of typhoid in a given case, is the isolation, in pure culture of the bacillus typhosus from the patient under consideration." The various general features considered under clinical diagnosis need not detain us. The value of the diazo reaction of Ehrlich, blood counts, isolation of the bacillus typhosus and the blood serum test are all carefully weighed. In respect of the diazo reaction, Dr. Ker remarks that its chief value is rather in its absence than in its presence. Excluding the eruptive fevers, miliary tuberculosis and pneumonia, a case giving the reaction is much more likely to be enteric than anything else.

The blood count has but little value although it is specially useful in the differential diagnosis from pneumonia. Yet it is to be borne in mind that in the early stages of the fever, there may be leucocytosis. The isolation of the bacillus typhosus is conclusive, but the technique required renders the application of the test impossible to the general practitioner. The conclusions drawn from the results of the serum test are briefly as follows:—

A positive reaction means that the patient has enteric fever at the moment, or has suffered from that disease recently. A negative reaction in the first fortnight of the fever means little or nothing. Should a negative reaction be still obtained after the third week is over, for practical purposes the idea of enteric may be dismissed.

The treatment of typhoid fever is discussed by representative men in Ireland, England and America. There is practically a uniformity of treatment in regard to the diet of these patients. The diet is regarded as of prime importance, and simplicity seems to characterize it. It should consist, according to these authorities, of milk, barley water, lime water, albumen water, whey and abundance of plain water. Dr. McCrae emphasizes two rules regarding feeding which may well be kept in mind: "Too little food rather than too much," and "more water."

In Dr. Osler's clinic the minimum of three litres of water per diem is the rule, and many patients take six or seven litres per day. The quantity of milk to be taken may be from 50 to 70 ounces for an adult, diluted with lime water, barley water or soda water.

*Intestinal antiseptics* finds its advocates among the Old Country writers, and it seems that turpentine is one of the best all round

remedies in typhoid fever. Those who advocate its use claim for it the actions of a diffusible stimulant, and of valuable antiseptic, relieving chest complications, controlling diarrhœa, checking meteorism, and staying intestinal hæmorrhage.

The salicylates of quinine and bismuth have been found useful. A note of warning is sounded against "routine and unreflecting purgation" at the beginning of the fever which seems so often to be followed by diarrhœa. The hydropathic treatment seems generally in favour as an antipyretic measure, but nowhere so highly advocated as in America. Dr. McCrae's claims for its use the saving of five lives in every hundred.

In enumerating the reasons for preferring the bath treatment, Dr. McCrae calls attention to the effects among others, upon the nervous system,—delirium lessens, muscular tremors diminish, the mental state clears. There is an increased excretion of toxins. The temperature is lowered, but this is not the main object of the baths. The pulse is better, the respiratory system is relieved of passive congestion, and the initial bronchitis is greatly benefited. In convalescence, seven to ten days of normal temperature elapse before the patient is allowed to sit up. Junket, custard, jelly and soft egg are given during the first few days of normal temperature in the first week, soft toast is added seventh to tenth day, scraped beef or sweetbread may be given. In view of the fact that the typhoid bacilli are excreted by the kidneys during the later stages of the disease, and even after the temperature is normal, urotropine is recommended two days in the week, for two or three weeks as a prophylactic measure.

There appears to be a growing objection to the routine use of alcoholic stimulants in typhoid fever. The complications of typhoid such as hæmorrhage, cholecystitis and tender toes have their appropriate treatments described in all the books. The success in dealing with intestinal perforation in typhoid depends upon the early recognition of the same, and prompt surgical interference, as well recognized in Dr. Mackenzie's article.

It seems only natural while much has been done with vaccination and serum therapy in other diseases that scientific men should seek to apply the same principles of treatment to typhoid fever, a disease so common in its incidence and so destructive in its results, especially among the armies in the field. The lack of space in this review forbid a lengthy discussion of immunity into which, among other aspects of the subject, Dr. Wright has fully gone.

An experience of six and a half years devoted to the careful study of typhoid inoculations has placed Dr. Wright in a position enabling him to speak with authority on this method of treatment. Recognizing

the fact that the vaccine employed for antityphoid inoculations must contain constituents of the bacterial protoplasm, he recognized at the same time the risk of disseminating the germ of the disease as well as the risk of communicating the disease in a serious form, should the practice of early preventive inoculations be adopted—cultures of living attenuated micro-organisms being employed.

It appears that the whole aspect of the question was altered by an observation of Professor R. Pfeiffer, who had in man obtained the specific agglutinative reaction to typhoid bacilli by the subcutaneous inoculation of a heated typhoid culture. Working upon the proposition that the typhoid culture preserves its vaccinating efficacy after exposure to a temperature of 60°C. its truth has been established experimentally, for according to Wright the inoculation of such cultures of or typhoid bacilli induce in the organism agglutinating, bactericidal, bacteriolytic, and antitoxic properties to the blood.

Some objection to the use of the vaccine is found in the pain at the site of injection and the constitutional reaction which may follow. With a synoptical table of statistical records and a critical commentary on these statistics the subject of antityphoid inoculation closes. Dr. Wright admits that the inoculations have been done in most instances under many disadvantages and that statistics are at the same time permeated with error. Yet making due allowance for all this it appears. 1. that a *great saving of life has already been effected*: 2. the incidence of typhoid fever has been diminished by at least one-half in the inoculated; 3. case mortality has diminished; 4. there is evidence pointing to the persistence of protective effects during the second year after inoculation.

W. F. H.

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W. S. THAYER. "On the Late Effects of Typhoid Fever on the Heart and Blood Vessels." *Am. Jour. Med. Sc.*, March, 1904.

This study was carried out on a series of patients who had previously been treated for typhoid in the Johns Hopkins Hospital, and the writer presents strong reasons for accepting the view that typhoid is frequently followed by changes in the heart and arteries.

Numerous observers have pointed out the frequency of fresh gelatinous and fatty sclerotic plaques in the aorta and larger vessels of individuals dead of acute infectious disease, and similar changes have been induced by injecting pathogenic organisms into the vessels. An examination of the arterial tension by the Riva-Rocci apparatus showed a distinct higher tension in old typhoids than in a series of healthy individuals taken under similar conditions, the result being clearly shown in a graphic chart.

The radial arteries were palpable in a large proportion of old typhoids; between the ages of 20 and 50 there were 46.8 per cent. in the typhoid series, as against 17.6 per cent. of normal cases, with palpable vessels. In addition to pulse changes, there was some evidence of cardiac enlargement in the old typhoids, when compared with the cardiac condition during the acute stage of the disease. As there is a tendency to cardiac dilatation during the acute stage, the enlargement following the disease is all the more significant. Well marked cardio-vascular changes were found in 10 of 182 cases following typhoid, and in these none of the usual causes were present for such a condition.

There is some evidence to show that patients in whom the pulse is rapid and irregular during the attack, or in whom a systolic apex murmur develops, are more liable to subsequent cardio-vascular changes. In such instance the subsequent blood pressure is higher than the usual post-typhoid blood pressure, and these cases were more frequently the subjects of subsequent cardiac disease.

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DR. FELIX HOMMEL. "Ueber Pubertätsalbuminurie." *Deut. Arch. Klin. Med.*, Bd. 78, 541.

The writer distinguishes physiological albuminuria from that occurring at puberty, and gives the results of examinations of large numbers of young workers in two well-known factories in Jena. In both establishments the hygienic arrangements are excellent, and the employees are obliged to present themselves twice a year for medical examination. The writer was thus enabled to examine 587 young people, and most of them were kept under observation for three or four years. Albuminuria occurred in 111 cases, or 18.9 per cent. of all examined. The albuminuria was, in most cases, decidedly intermittent in type, so that repeated examinations were frequently necessary for its detection. The quality of albumin was usually trifling, but occasionally showed as much as one-half to one per cent. Scanty hyaline casts and single fatty epithelial cells were sometimes found.

The cause of the albuminuria of puberty depends frequently on cardiac disease, especially on the juvenile cardiac hypertrophy of German-Séc.

Symptoms such as palpitation, a sense of pressure on the chest, shortness of breath on exertion, and objectively signs of enlargement both to right and left side, pulmonary accentuation and blowing systolic murmurs, were frequently noticed. Increased arterial tension and aortic accentuation also occurred. These signs, however, occur in a large proportion of cases without albuminuria, and the figures,

42.2 per cent., in which cardiac defects were associated with albuminuria, are not much greater than the 31.5 per cent. of cardiac defects without albuminuria.

Physical exertion plays an unimportant part in the albuminuria of puberty, as it is as likely to occur in the early morning as later in the day.

The differential diagnosis from organic renal disease is difficult, and can often only be made after careful and repeated examinations. Casts are regarded as in favour of organic disease, and also a quantity of albumin in excess of one per cent.

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JOSEPH LESPERANCE. "The Soluble Ferments of Cow's Milk." *New York Medical Record*, April 20th, 1904.

Dr. Lesperance discusses the seemingly paradoxical fact, that an artificial mixture of albumins, fats and sugars, in the same proportion as when contained in natural milk will not sustain life beyond a limited period. He cites the experiments of Lunin in demonstration, and puts forward the view "that the enzymes or unorganized soluble ferments in milk are absent from the artificial fluids, or are destroyed in the various manipulations to which milk is commonly subjected in the course of its adaptation for the feeding of infants.

Dr. Lesperance says:—"The constituents which are lacking in sterilized milk, or, more properly speaking, are destroyed when the temperature of the milk is raised to 176° Fahrenheit, are the enzymes, those mysterious ferments which govern the equilibrium of the protoplasm." The experimental evidence is given very fully to prove that "bacteriology, in discovering the secretions of the microbes, brought these same thinkers back to the study of the secretions of the organic cells, and demonstrated that the two are identical, and that there is no biological difference between the constituent cells of our organism, and those minute cellular individuals, the microbes."

In conclusion, the author states: "Summing up the various researches and discoveries made in connection with cow's milk, we find then, that this milk contains numerous ferments. We have determined definitely the presence of trypsin and of pepsin, of the lipasic and oxidizing ferments, and of the glycolytic ferment. There is, moreover, reason to expect further discoveries in this direction, and this is not improbable when the extremely complex nature of milk is taken into consideration."

It is understood that Dr. Lesperance is working at the problem of how to retain these enzymes in preparations of milk. If he succeeds it will be a notable achievement and of very great practical value.

## Society Proceedings.

### OTTAWA MEDICO-CHIRURGICAL SOCIETY.

*Final Meeting, May 6th, 1904.*

DR. H. B. SMALL, PRESIDENT, IN THE CHAIR.

The Ottawa Medico-Chirurgical Society closed its session for this year with a smoking concert held in the Grand Union Hotel, on Friday evening, May 6th. The president, Dr. H. B. Small, occupied the chair. A programme of speeches, recitations, songs and instrumental music was presented, among the contributors being Dr. A. J. Horsey, F. X. Valade, Thos. Gibson, J. E. Hanna, J. E. Klotz, H. W. Spence and — Robinson. Speeches were delivered by Sir James Grant, the Honorary President, by Drs. Valade, Parent, Lambert and Higgins.

In the course of his remarks Sir James Grant called attention to the fact that the originator of the Laryngoscope, Senor Garcia, had celebrated, on March 17th last, his hundredth birthday. A committee was nominated to draw up and forward to Senor Garcia a congratulatory resolution.

### SOCIETE MEDICALE DE MONTREAL.

*Meeting of 11th May, 1904.*

DR. OSCAR MERCIER, VICE-PRESIDENT, in the President's absence, occupied the Chair.

DR. FRANCOIS DEMARTIGNY presented two pathological specimens, the first a fibromatous uterus with a polypus attached to the fundus by a long pedicle; the second, an ovarian pregnancy. Having given the particulars of the cases he reported a case of Inguinal Hernia containing the appendix.

DR. HARWOOD noticed with pleasure that Dr. DeMartigny had a second case of ovarian pregnancy in six months. But such cases, he thought, were so uncommon that they should be corroborated by a microscopical examination. The case of fibroids with polypus was interesting, but cancerous degeneration was not so common as Dr. DeMartigny seemed to emphasize. Dr. Harwood had examined many a case of cancer of the uterus without fibroids and vice-versa. Hysterectomy was the only treatment capable of assuring a permanent cure in cases of multiple fibroids.

DR. OSCAR MERCIER recalled the case of a woman whom he operated upon for a large polypus, without interfering with the uterus, the patient being unable to undergo any further intervention. Two years later the patient died from a cancer of the uterus which had probably developed in a fibroid. A second case also came under his

observation, that of a polypus expelled through the vagina causing a compression necrosis of the vaginal walls. This patient has not been heard from since. Dr. Mercier also favoured hysterectomy in cases of fibroids on account of possible degeneration.

Dr. HARWOOD asked Dr. Mercier on what he based his opinion that the first patient had died of cancer developed in the degenerated fibroids.

Dr. MERCIER replied, that such was his impression, though there had been no post-mortem.

Dr. DEMARTIGNY thought Dr. Mercier's opinion the right one, for, as assistant of Drs. Pean and Delaunay, he had seen several cases of fibroids with a microscopical examination showing distinct cancerous degeneration. It was a rule in the International Hospital to have all specimens of uterus fibroids examined by the pathologist, and the report often was positive when the naked eye could detect nothing.

Dr. DECARY was of opinion that it was very difficult to reach a positive diagnosis even with the aid of a microscope.

Dr. DUBÉ asked what course should a physician follow, when in presence of a woman who had passed the "change of life," and suffered from fibroids which otherwise did not inconvenience her.

Dr. HARWOOD believed that if no trouble existed the patient should be left alone.

Dr. DEMARTIGNY said such cases were embarrassing, and that the tumour alone should not determine the procedure. The family history should be carefully examined, and if there existed any trace of cancer, an operation was necessary.

Dr. DUBÉ did not believe that heredity had much to do with fibroids, though the possible germ theory of cancer was daily making progress.

Dr. DEMARTIGNY added that even if cancer were an infection like tuberculosis, which was far from being proven, it was evident that patients born from cancerous or tuberculous patients were more prone to suffer from cancer or tuberculosis than others, and as future was most uncertain, it was better to be on the safe side.

Dr. BOUCHER then called the attention of the meeting to a regulation moved by Ald. Dagenais rendering obligatory the declaration of births at the City Hall, and compelling the physicians themselves, under penalty, to make such declarations. This was in contravention of professional dignity, and even in certain cases would be a violation of professional secrets.

After a lengthy discussion, in which took part Drs. De Cotret, Dubé, Décary, Le Cavalier, DeMartigny, Dagenais, Cormier, the principle of the regulation was approved, discussion of its several clauses being postponed.

DR. LE SAGE brought up the question of feeding milch cows with refuse from breweries.

DR. DAGENAIS said he saw no inconvenience following the practise.

DR. CORMIER detailed the several disadvantages of such feeding when the milk was to be used for infant feeding.

DR. LE SAGE moved that Dr. Cormier be chosen to preside over a commission with power to name as many members as required and report on the question at the next meeting, the report to be sent to the Alderman. This was carried.

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## MONTREAL MEDICO-CHIRURGICAL SOCIETY.

*Fifteenth Meeting, May 2nd, 1904.*

H. S. BIRKETT, M.D., PRESIDENT, IN THE CHAIR.

DR. T. P. SHAW and DR. J. A. SPRINGLE read a case report upon Acute Intestinal Obstruction following labour, caused by hæmorrhagic Ovarian Cyst. Dr. Shaw gave the clinical history of the case and, in the absence of Dr. Springle, the operative procedure after the patient entered hospital, and gave as Dr. Springle's conclusions; first, the rarity of the condition; second, that the torsion was limited to the veins and the arteries were pulsating, and third, that the probable cause of the condition was the laxity of the abdomen after confinement favoring the development of a small cyst, which became strangulated.

DR. EVANS: The condition is a rare one, and I think in view of the recovery of the case Drs. Shaw and Springle are to be congratulated. The complication of pregnancy with ovarian tumours of varying kinds leads to such instances as mentioned in this case. The previous history is that of an ovarian tumour evidently damaged at the time of delivery with resulting hæmorrhage and probably necrosis beginning in the capsule, which owing to pressure gives rise to toxæmic symptoms. The treatment is very unsatisfactory as authorities state that with laparotomy for this cause there is a mortality of 50 per cent. I recently saw a case of a similar nature belonging to one of my colleagues. The woman was a primipara and after an uneventful pregnancy he found a tumour in the posterior *cul-de-sac* and asked me to see the case. The tumour was of a cystic nature evidently having its origin on the right side and was diagnosed as being a probable ovarian cyst, but as the labour was advancing very rapidly, the head in the second stage, and the patient out of town, it became a question whether we could get her to town to hospital to do Cæsarean section in time to be of service. The idea was abandoned the child was delivered a short time afterwards and the whole course of the labour was absolutely un-

eventful. The patient had no idea that this tumour existed, no sudden pain or any symptom whatever. On examination after completion of the labour and before the placenta was removed, we could feel no evidence of the tumour. She was watched very carefully and on the third day a train of symptoms almost identical with those of Dr. Shaw's patient presented themselves. There was pain on the right side, no tumour mass could be felt, but there was evidence of threatened intestinal obstruction and she had vomiting, in fact, a slight peritonitis. Fortunately for us the condition resolved itself and under appropriate treatment the patient has made an uneventful recovery, but for 48 hours or so the conditions were rather stormy. The danger of all ovarian tumours is that they will lead to hæmorrhage, through damage at labour, contortion, necrosis and other results of that nature, and the history is nearly always that as Dr. Shaw has recorded, though the outcome is not so satisfactory as in his case.

DR. ENGLAND: I was present at the time of the operation and Drs. Shaw and Springle are to be congratulated on the early recognition of this condition. It seems to me that we are recognising more complications of this kind following labour than we did some years ago, and I think it is not uncommon now to find pain and obstruction occurring after labor. I have seen recorded a number of such cases during the past year which no doubt years ago were put down to some puerperal complication. Pain is a common symptom in these cases, and one would expect this with this twisted pedicles. I saw this tumor and it was absolutely filled with blood; there was much congestion and a good deal of inflammation and peritonitis in the region. It was an inflamed ovarian cyst, though there was not much distension and vomiting was not prominent. By taking this case early and in a healthy woman the termination was as satisfactory as one could expect. The early recognition of these cases is very important, and it teaches us to be on the alert for complications in the way of twists of the bowel, bands and tumours.

DR. SMITH: Both our colleagues are to be congratulated on the happy termination of their case. The moral of all this is that anyone leaving a woman go on to pregnancy, or any women for the matter of that no matter what her condition, with an ovarian tumor of any kind is responsible for that woman's life. All such tumours should be removed when first discovered, the earlier the better, and certainly before the pregnancy comes to a termination, for the danger of torsion of the pedicle is a well known danger and is just as likely to happen as not and if the torsion is complete, there is necrosis of the tumour and a very serious peritonitis.

DR. SHAW: Abdominal tumours are not rare in pregnancy, and we do find numerous reports of tumours, even obstruction occurring, but that is usually previous to confinement. But to find a case of sudden onset four days after confinement, in a woman who had fifteen or twenty minutes before felt perfectly well is unusual. The patient suddenly became very seriously ill, owing to the sudden enlarging of an ovarian cyst which must have been very, very small at the time of confinement, else I should have felt it. I cannot find a report of a similar case; there are other cases somewhat similar but not exactly parallel. No flatus had been passed from the time the patient became ill till after the operation; vomiting, though slight, was certainly present and she was bringing up flatus or gas by the mouth. On opening the abdomen the intestines were found distended with gas. That the positive symptoms of obstruction of the intestines for over three inches producing an inflammatory condition of the gut was proof positive that this tumour acted like a ball valve pressing on the soft elastic tube completely blocking it. The length of time after which nursing was resumed was nearly two weeks, the breasts in the interval were massaged each day and milk was secreted. The patient was extremely anxious to nurse her child, so this was allowed. It nursed once a day in hospital, and after the patient went home it nursed twice a day, the diet being supplemented with artificial food.

DR. HACKETT gave a report of excision of the clavicle, and showed the patient on whom the operation had been performed. He was seen to have a useful arm in every respect.

DR. GIRDWOOD: Dr. Hackett is to be congratulated on the result obtained. In 1854 one of my colleagues while in action had his humerus shattered, and at the operation some of the periosteum was left with the result that he recovered the use of the arm in the same way.

SIR WM. HINGSTON: The periosteal method was evidently the proper one, but we might meet with a dozen cases and not find one where it would be so easy to separate the bone from the periosteum. It would have been really criminal to have removed the periosteum in this case; it is nearly all there and has formed a very admirable clavicle. This operation is performed from time to time, but not often for disease; generally speaking, in ankylosis of the shoulder, removing the bone, in whole or in part, leaves a very much more useful arm. In this case, however, the indications were clear, and they were followed by very satisfactory results.

DR. HACKETT: What I did in this case was to simply take out the dead bone which came right away from the periosteum, only a little adhering.

DRS. GIRDWOOD and C. H. HIGGINS read a paper upon clinical observations on guinea pigs inoculated with tuberculosis and treated with currents of high frequency.

DR. ADAMI: The results which Dr. Girdwood has brought forward this evening are distinctly interesting and valuable, and we hope that such experiments will be continued and include the conditions found in man. We know that bovine tubercle bacilli are much more virulent to the guinea pig than human, and if the human was used it would show a more prolonged type of infection and more typical than the acute condition brought on by the injection of this virulent bacillus; then the application of the high frequency currents would apply more to the condition as it is found in man, and we trust that these experiments will be continued.

DR. RICHER: I have listened with a great deal of interest to this elaborate series of experiments, and I could not help being struck with the similarity between what is called high frequency currents from electric energy and the high frequency currents derived from solar energy. It seems to me that is one of the points that would naturally strike us as being easy of comparison; I think Dr. Adami will bear me out in this. Experiments were made some 10 years ago by Dr. Trudeau of Saranac Lake, who used rabbits and infected them with tuberculosis. One set he allowed to roam around in the sun and open air, the other he kept shut up in a damp unhygienic atmosphere with no sunlight at all. This experiment was carried on in a rather crude way at the time and I do not know that it has been repeated, but it served to show the influence of the solar energy on this condition. Such experiments would be worth while repeating in a thoroughly scientific way, taking smears and making examinations of temperature, and also comparing the high frequency electric currents and the high frequency current from solar energy. With regard to the rise of temperature I would like to make this remark that after exposure to the sun's rays it is frequently noted that there is some rise in temperature. However, this work just reported cannot help but further our knowledge and perhaps increase our interest in the subject of tuberculosis. It also compels me to make a statement in regard to another point and that is the antitoxic sera. Ravenel, in an address at the Henry Phipps Institute, last March, proved rather conclusively that we can hope for a potent antitoxic serum, and he also made the statement that we could look for a toxin similar to the vaccine that is used for small-pox. He has already conducted experiments with very satisfactory results. He has been able to estimate the agglutinating power of the cells and their

sera of the animals that are vaccinated. These are distinct advances in our knowledge of pathology and lead us to a better understanding of the work before us.

SIR WM. HINGSTON: One circumstance is of marked interest to me: the experiments of Dr. Trudeau alluded to, which are a repetition of experiments made in France by Cruveilhier, some three-quarters of a century ago. Cruveilhier's experiments were often quoted. A large number of rabbits were used. They were fed poorly and exposed to damp unhygienic conditions without fresh air or sunlight. At certain times they were put out into the fresh air and sunlight, when marked improvement in health occurred, those put out early enough regaining their normal condition. With regard to the question of electro-therapeutics, it is the department to which should be devoted all one's energy, as it appears to me that there is a tremendous future for this field of electro-therapeutics. In France, Germany, England and Scotland the advances made are very striking. They not only deal with a particular ray but they analyse and separate it, as the X or Roentgen, and this has given rise to any number of modifications in these electric currents; I think during the past year two more of these have been separated, and all apart from the rays of radium. I am glad Dr. Girdwood is bringing the energies of his well prepared mind to the consideration of these questions. In cancer there are inoperable cases which cannot be reached by the knife, and electricity may afford the only relief. So far it has been found that electricity is of great service where it can act directly upon the disease, as in epitheliomata and lupus, but when the rays have to traverse healthy tissue to reach disease beneath, it has been found to be of less value. But we have hope for the future even in that direction.

DR. HAMILTON: I would like to add my appreciation of the work accomplished by Drs. Girdwood and Higgins and I may say that I read the original article of Dr. Williams, mentioned by Dr. Girdwood, and was very skeptical. I am very glad now to see the results of these experiments in a clearer light being confirmed by Dr. Girdwood's experiments as reported to-night. I feel with Dr. Richer that nothing, so far brought forward, can be substituted for the solar energy.

*Sixteenth Meeting, 20th May, 1904.*

DR. H. S. BIRKETT, M.D., PRESIDENT, IN THE CHAIR.

DR. H. S. BIRKETT presented a case of Melanotic Sarcoma of the hard and soft Palate, and Dr. McKechnie read the case report.

DR. BIRKETT: The interesting point in this case is the comparative rarity of Melanotic Sarcoma in this region. I have seen one other case,

much more advanced than this, some twelve years ago, the condition involving the whole of the hard and soft palate to a very great extent; a sketch was made of the throat at the time, but it did not show at all accurately the involvement present. Nothing was done at the time and the patient was not seen again. The present case has been under treatment by X-rays for a short time, and you will see from the sketch made by Dr. Philimore, and from the patient at the present time, that there is already slight improvement. It would be very interesting to find the explanation of the occurrence of these melanotic sarcomata in these regions. In this case it is undoubtedly a primary lesion, as careful search was made all over the body for evidence of disease elsewhere. Only last month, before the Laryngological Society of London, Ball presented a similar case.

DR. ADAMI, with Dr. Birkett was greatly impressed by the long continued, slowly malignant course of the case—a course so at variance with that of the ordinary melanema. But he had to confess that microscopically the specimen was an undoubted spindle-celled melanotic sarcoma with little or no evidence of alveolar arrangement—and yet the history shows that without doubt the growth had been present for nine years. Without doubt also, with such a history it had to be concluded that the growth was primary in the epithelium of the palate, where presumably it originated in or just below the Malpighian layer. He knew no evidence that in the palate this region normally contained pigment cells.

We were, of course, familiar with the pigmented moles of the skin; a large proportion of those present probably possessed one or more examples of the same, and we know that for long years, or indeed throughout life, these may remain harmless. Had we here to deal with a primary pigmented mole of the palate with slow powers of extension? Dr. Adami agreed with a previous speaker regarding pigmented moles. Cases of apparent primary growth of melanotic sarcoma had been more than once explained as not truly primary but secondary to pigmented moles of the skin. Nay more, it was recognized that a sarcoma of the skin might itself be non-pigmented, its secondary growth pigmented—and some authorities, instead of speaking of melanotic sarcoma, prefer on this account to term the group chromatophoromata—tumours formed of cells *capable of carrying pigment*.

DR. SHEPHERD: Five or six years ago a man consulted me for a very similar condition, and it would seem that this had been present for a very long time. He was to come back and have a microscopical examination made, but he never turned up and was not seen again. It was an almost identical condition with that shown in this patient. The pigmented mole is very common, and it has always been my practice

whenever I have seen one to remove it. I have seen seven or eight cases of melanotic sarcoma of the skin, and all the patients succumbed in a short time from a recurrence.

DR. ARCHIBALD reported a peculiar case of Empyæma.

DR. SHEPHERD: I was very much interested in Dr. Archibald's case, but I do not see why it should not be secondary to the subphrenic abscess, as infection is upward, seldom downward. Still it is a rare case and it is very difficult to say where the origin of these abscesses may be.

DR. ARCHIBALD: The possibility of primary subphrenic abscess was duly discussed, but I excluded it from lack of any primary condition in the diaphragm. It was in the right side, therefore it could hardly be stomach, spleen or pancreas; there was nothing apparently wrong with the liver and nothing wrong with the appendix. Besides it was a very small abscess, whereas the pleural one was very large and the history showed that it had evidently begun as a pneumonia following Grippe, and on this ground was pleural. I therefore decided that the subphrenic abscess was a secondary condition. The recovery of such cases surely ought not to be rare. The statistics of Meindl embrace 179 cases, which consisted of the cases which had been published up to that time and necessarily a great many of them were post mortem cases.

DR. STARKEY read a paper entitled Observations relating to the etiology of Infantile Diarrhœa.

DR. EVANS: For some years past my attention has been directed to this subject. The areas mapped out by Dr. Starkey are interesting in that they tally with the districts which Alderman Ames noted in his book called *The City Below the Hill*, in which he pointed out the relation of the high mortality to the presence of cesspools, as has also been noted by Dr. Starkey. Another fact which strikes one from this paper is the depressed areas in these affected localities. In Dresden an observer drew attention to this fact some years ago. When high winds developed the level would drop to a lower grade; probably the high winds showed that the faulty ventilation of these districts has something to do with the prevalence of disease. Our mortality is a disgrace to any civilized city, and I think it would be of the deepest interest to take one of these districts mapped out, have it patrolled by practitioners, the parents taught how to feed and properly care for their children, to have the food superintended and supplied at a moderate cost with instructions as to its care, and then have the mortality in that district carefully noted, and after a certain period compared with the present statistics. Prof. Holt is carrying on work of this sort in certain districts in New York with great success. Of course I think, too, the

feeding is of secondary consideration, but with this and improved sanitary conditions great improvements could be brought about in the death rate. It seems to me that the poverty of the inhabitants is an important factor. In these low lying areas the moisture and drainage would naturally flow down from the higher levels and be composed of deleterious and fermentable matter, and the children playing in and around this would naturally be the sufferers. Aside from the irritation of dentition of the first year, there is an additional cause in the presence of these microbes. In the lower levels, where there is moisture, there is also more or less fog; the heat there evaporates the water from the soil, and chill, especially at night time, causes this fog to hang over the area. So here is still another feature, and by taking the exact dew point you will find that a degree more or less enables these microbes to grow. In the disinfection of railway cars it has been proved that formaldehyde is absolutely useless unless the atmosphere is saturated at about 75 per cent. You have to deal with the temperature and saturation of moisture which enables these microbes to grow. When the high winds blow through these localities this mist or moisture is blown away, and you have fresh air which has again to be saturated with that moisture before these microbes grow again.

DR. GIRDWOOD: I should like to ask, if the death rate is a just criterion of this disease. From the districts indicated it would seem that the inhabitants of these properties are people who cannot afford to go to any expense in connection with curative measures for their children. Might not this disease exist in the same proportion in those better situated, who can afford to take their children away for a short time?

DR. ADAMI: I must congratulate Dr. Starkey upon having taken up this subject. Judged from every point of view this remedying of our terrible mortality is of the highest importance to us as a community, and I think Alderman Ames, who has done so much for the sanitary condition of the city by studies of a somewhat similar though more general character, will be pleased with the results Dr. Starkey has brought out this evening. With regard to work on the summer diarrhœas of children, one of our Montreal workers, Dr. Charlton, working under Professor Escherich, has communicated to the recent meeting of the Association of American Physicians at Washington a very interesting paper upon cases in the Ste. Anna Spital in Vienna, in which he shows the clinical confusion between mild cases of dysentery and these summer diarrhœas. The Shiga type of dysentery he found the most severe. In the Flexner type there is not quite so much tenesmus. He has worked out 68 cases of severe diarrhœa with com-

plete bacteriology, showing a majority of colon and proteus types of summer diarrhoea and even streptococcus. The work is a good one. Now with the convergence of all these different methods of investigation, the bacteriological, hygiene, etc., one should acquire facts which will lead us surely to alter for the better the present condition of affairs.

DR. STARKEY: The fact of high winds is a very important one with reference to the ventilation of areas. It has been noted over and over again, that if you take these areas in which disease is prevalent, you will find that on a still warm day the dust hangs around there, and you get large numbers of bacteria from any culture media you may use; on windy days on the other hand these get blown away and there is no chance for them to settle down on food. The blind alleys prevent the winds from thoroughly ventilating these areas. I think that the feeding of infants amongst the poorer classes and their proper care would bring surprising results; it has already done much good. Time did not permit of my going into the bacteriology of this subject, but already here we have a good many facts before us. I think the death rate is a good criterion. The fact that the disease may be prevalent in another district and the cases recover hardly applies to the epidemic diarrhoeas noted, as it is so acute that there is not much time for infection from a distance.

### McGill Undergraduates Medical Society.

JOHN MARCA LANCISI—1654-1720.

BY

D. S. LIKELY.

John Marca Lancisi was a noted Italian physician and surgeon. He was born at Rome on the twenty-sixth of March, 1654, and died on January the twenty-first, 1720. After completing his earlier education in classics, he took a course in philosophy at the Roman College. For some time he devoted himself to the study of divinity, but later he gave this up for a medical career which was more in accordance with his tastes. He gave his attention especially to anatomy, chemistry, and botany, and he also studied geometry, which he thought might be of use to him.

In 1672, at the age of eighteen, he was made a doctor of philosophy and physic. To prepare himself for the practice of his profession he entered the Sancto Spirito Hospital at Rome, and spent three years in practical work. In 1675 he was appointed physician in ordinary to the Hospital of the Holy Ghost in Soffa, where he made many im-

provements and began the practice of writing the history of the different cases. He was admitted as a member to the College of St. Saviour in 1678, where he spent five years in reading the best authors upon physic. In 1684 he was appointed professor of anatomy in the College of Sapienza, and this office he held for thirteen years with great credit to himself.

Before Lancisi was thirty-four years old Pope Innocent XI. chose him for his physician and private chamberlain. Later he held the same position to two succeeding popes. The remainder of his life was spent in the practice of his profession and in writing books. During his life Lancisi had collected a splendid library of over twenty thousand volumes. Before his death he presented this library to the Hospital of the Holy Ghost for the use of the public, particularly the young surgeons and physicians who attended the patients in that hospital.

Lancisi was foremost in many branches of the science of medicine. He did much valuable preliminary work in founding a science of Hygiene, studying the exhalations from marshes. He also studied means of improving the unhealthy condition of the Roman Campagna. His name is also mentioned among the founders of Pathology. He investigated and gathered much information concerning the calcareous degeneration of the valves of the heart and concerning its dilatation and hypertrophy. He connected pulsation in the jugular veins with the dilatation of the right side of the heart resulting from incompetence of the tricuspid valves.

The distribution of the fibres in the corpus callosum was studied by Lancisi, and the longitudinal fibres bounding the median raphe have been named after him.

The principal of Lancisi's works were collected and published at Geneva in two volumes in 1718—entitled *John Marcæ Lancisii, Archiatri Pontificii; Opera Omnia in duos tomos distributa.*