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THE  
MONTREAL MEDICAL JOURNAL.

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Vol. XXVIII.

APRIL, 1899.

No. 4.

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Original Communications.

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YESTERDAY AND TO-DAY.

AN ADDRESS TO THE UNDERGRADUATES' MEDICAL SOCIETY, JUNE, 1898.

BY

FRANCIS J. SHEPHERD, M.D.,

Professor of Anatomy, McGill University ; Senior Surgeon to the Montreal General Hospital.

I have thought for some time about various subjects on which to address you this evening ; some dry and heavy, others light and airy ; and I concluded, after due consideration, that you had enough of sermons preached to you during your course, and enough advice to last you for some years after graduation. The more frivolous forms of address, I considered, were ill suited to the dignity and traditions of these college halls ; so, to make my address instructive as well as entertaining, I, decided to give you a short account of what the Medical Student saw twenty-five or more years ago, and to compare his opportunities and advantages with those so richly accorded to you, Medical Students of the last decade of the Nineteenth Century. I am not so sure, however, that you have so great an advantage over the men who were educated here twenty-five to thirty years ago. In the first place, they had not so much to learn and had more time for clinical work in the hospitals, for, outside of the dissecting-room, the hospitals were the only laboratories they possessed ; even practical chemistry, at that time, was not taught. Again, although you have many methods and instruments to aid in diagnosis, such as clinical thermometers and temperature records, cystoscopes, double barrelled stethoscopes, instruments and methods for estimating the proportion of white and red corpuscles in the blood, bivalve specula, urinometers, laryngoscopes, the typhoid reaction of blood, centrifugal machines, sphygmographs, fluoroscopes, X ray apparatus, and many other novelties which it would be wasting time to mention ; still, it seems to me, that the older men trusted less to mechanical means of as-

sistance, (instruments), and more to their own natural powers of observation; in surgery especially, diagnosis was a much more accurate accomplishment than at present. Now, the fashion, especially in abdominal disease, is to "get in and find out;" then, symptoms and conditions were observed more clearly. There were no temperature charts then, and the pulse was more depended on to indicate the condition of the patient, while great attention, also, was given to the expression of the face and the posture of the individual; the appearances of the excreta, too, were closely examined. As an instance of the exercise of these powers of observation I should like to read you an extract from the work of the celebrated Galen.\* (Quotation read). One no longer wonders at the great success of Galen when one sees to what good use he put his eyes and how easily he could deduce truths from very slight premises, though his methods were somewhat similar to those employed by the successful quack to-day.

Now, in regard to the pulse, the ancients thought that the arteries contained the vital spirits which were invisible air, for the arteries always appeared empty after death. Galen was the first to show, by tying the carotid in the horse in two places, that the intervening portion contained blood after death. Galen wrote a book on the pulse. He says, "First learn the natural pulse, then appreciate swiftness and slowness, hardness and softness of the coats of the arteries; then notice the intervals, observe equality and inequality." He then discusses the difference of the pulses of men and women, old and young, with the effects of sleep, of baths, of wine, of mental emotions, and of pain, concluding with a description of the pulse in various diseases. At this time and till long after the pulse was not counted; it is only within a hundred years that the second hand of a watch was used to count the pulse. In the 15th century the pulse was estimated by a water clock. Galileo tested the swing of the great lamp in the Cathedral at Pisa, (from which he got his idea of the pendulum) with his own pulse, which led to the isochronism of the pendulum being discovered. This led to the production of an instrument called the "pulsilogy", now long forgotten. It consisted of a scale of inches and a cord with a movable weight marked with a transverse line. The number of beats of the pulse corresponding to a given length was calculated by direct experiment depending on the isochronism of the pendulum. Thus a pulse would be spoken of, not by the number of beats, but of so many inches. (Lecture by Dr. Norman Morse, *Lancet*, Dec. 4, 1897.)

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\* The quotation, which was rather lengthy, described how Galen astonished his friend Glauco by making a diagnosis of an obscure disease merely by observing the surroundings of the patient and his appearance; and he not only told the patient, who was a physician, what he had, but also what he thought he had, and what medicine he had taken. Of course this was to illustrate the advantages of cultivating powers of observation and making deductions from these observations.

I fear I have wandered somewhat from my subject but I hope I have not been tedious. It is interesting to one like myself, who has watched the various changes in the practice of Medicine and Surgery brought about by the wonderful discoveries of the last twenty-five years, to observe in what a matter of fact way you accept the existing conditions, such as asepsis, anæsthesia, arrest of hæmorrhage, the knowledge of the various causes of septic infection, the action of antitoxins, etc., as if this knowledge had always existed, and look upon such things, not as great discoveries or novelties, but much in the way the laity regard the telephone and telegraph, and the electric light and steam engine. To one who has lived before these things it seems very marvellous. Why, when I was a student, it was a rare thing to see a patient recover after an amputation of the leg, rare to see recovery after compound fracture of the leg, unless the leg was quickly amputated, a rare thing to see a recovery after an operation for empyema, and then this operation consisted of the introduction of a trocar, rare to see a recovery after operation for strangulated hernia. Intentional opening of the abdomen was never even suggested except for the occasional operation on an ovarian tumour and then the patient nearly always died. Abdominal surgery was called by the great Ferguson, abominable surgery. Secondary hæmorrhage was common, because ligatures were never cut short but the ends were left hanging out of the wound and after a few days pulled at each visit of the surgeon to see if they would come away, and when they did very often a gush of blood came too and the wound had to be reopened and the artery secured for a second time. It was looked upon as a very serious matter if a vein was accidentally wounded; its closure was attempted by plugging the wound with muscle or fat, but pressure was what was most relied upon; a ligature was never placed upon a vein, this would have been looked upon as murder. The cause of pyæmia was not known and it was confounded with rheumatism. We spoke of "laudable" pus and expected to see it in every wound. Healing by first intention was looked upon as a miracle. We knew nothing then of germs or sepsis or antisepsis, but operated with dirty instruments and septic hands on septic parts and wore, as a rule, coats which had for years been baptized with the blood of the surgeon's victims. Some operations performed with celerity were very successful, such as removal of tumours in the neck, and of stone from the bladder. Our operations, in those days, consisted chiefly in the amputation of limbs and the ligation of arteries. Very little other operative work was done. Excision of joints was just coming in when I commenced to study, the late Professor Fenwick being the pioneer of that work on this continent. Cancers of the breast and other parts were not operated on until they were so evident that any one could tell what they were, and operative procedures, undertaken then, were

invariably of no use because too late. What a change now in our procedure.

Perhaps in surgery the most marvellous modern discovery after anaesthesia, which has rendered the extraordinary modern operations possible, is the knowledge that sepsis is due to the distinct and definite action of certain well-known micro-organisms, and when this action is suspended or these germs are killed or prevented from entering the wound, healing takes place without any difficulty. In medicine, the proved relationship of micro-organisms to some of the most virulent forms of infectious or contagious disease, has been well established and many methods have been devised for destroying these without in any way injuring the person in whose body they are multiplying. Another remarkable discovery, which is so recent that most of you remember its inception, is the rendering of the individual immune by the injection of some antitoxin. Not so many years ago our only hope in diphtheria was tracheotomy when the worst came to the worst, and this was only palliative. In most severe epidemics of diphtheria, 40 to 50 per cent. died. Now, under antitoxin the records at the Civic Hospital last year gave a death rate of only 8 per cent., and it would have been less had the cases been brought earlier. It is hoped the scope of these antitoxins before many years will be much extended; it is used successfully now in tetanus and rabies.

Another remarkable recent discovery which seems almost a fairy tale, is the knowledge of the influence of internal secretions of certain ductless glands, as the thyroid and thymus, suprarenal capsules and pituitary gland, upon metabolic processes. Any one who has seen an idiotic Cretin or a patient with Myxœdema restored to intelligence and health will have some idea of the scope of this method of treatment. The knowledge that a subject that has bled to death still has in his body enough blood to have supported life if it only could have circulated, has been known to us less than twenty years. What prevented the circulation of the blood was diminished blood pressure. Now, in consequence of this discovery, we do not inject blood, but fluid sufficient to raise the blood-pressure to its former height. Saline solution, a teaspoonful of salt in a pint of hot water, is the simple solution used, and the solution need not be injected even into the veins, but if it is injected in the subscapular or submammary cellular tissue, it does equally well. Woodridge has shown that when a patient recovered after transfusion of blood it meant that the transfusion had failed, the blood having escaped into the cellular tissue outside the circulation, whilst when transfusion was mechanically successful, it was fatal. Injection of saline has saved many lives even when injected into the rectum or left to be absorbed in the peritoneum. This knowledge of the efficacy of saline solution has come to us from the experiments of the physiologists.

Many other novelties and wonders are daily being made known, such as serum therapy, etc. What the future will bring forth one cannot say, but if the next twenty-five years are as rich in discoveries and the practical applications thereof, you will have much to interest you in your future careers. At the beginning of this century, medical men thought they had reached the end of their advancement, and, in fact, Boyer, after the French war, said "Surgery seems to have attained the highest degree of perfection of which it is capable." How false his estimate was, the record of advance since then has fully shown. Cordorocet at the end of the last century, when being hunted to death by a vindictive council was nearer the mark when he said that improvement in the practice of medicine must in the end put a period to transmissible or contagious diseases, and he goes on to say that death will be nothing more than the effect either of extraordinary accidents or of the slow and gradual decay of the vital powers. At the time this was written, small-pox devastated the nation, and there was hardly a person, high or low, not marked with the disease. Jenner's discovery has altered this, and on the same lines many other improvements have been introduced and the virulence of epidemics much abated. It has been prophesied that in the future there will be but little work for the surgeon except to attend to accidents, for the three conditions which call for surgical interference are, general sepsis, tubercle, and cancer; and it is asserted that in the near future a toxin will be discovered which will as surely destroy the micro-organisms of these affections as now those of diphtheria and tetanus are destroyed. If the future of surgery is so bright, what about the past? Before the discovery of anæsthesia, surgery had a very limited scope, but anæsthesia paved the way for the brilliant results achieved by modern aseptic surgery, which without anæsthesia would have been impossible. I have heard many of the surgeons, who practiced before the discovery of anæsthesia in 1847, tell of the horrors of the operating room; rapidity of operation was their one aim. Surgeons with ordinary bowels of compassion dreaded the coming operation as much as did the patient. Abernethy said he felt as if he were going to be hanged. Liston lay awake in mental anxiety the night before, and Cheselden turned sick at the thought of the pain he was going to inflict. Some one, speaking of the patient, said "his progress might be traced by frightful yellings, or, at least, by sobs of deep distress, and occasionally a number of stout assistants were scarcely sufficient to prevent a self effected rescue and escape." Nelson, when his arm was amputated after the action of Teneriffe, manifested his usual courage and firmness, yet so painfully did the coldness of the surgeon's knife affect him, that, when going into action at the famous battle of the Nile, he gave standing orders that the amputating knives should be left in hot water.

In the Dublin Hospital Reports for 1827, I came across the narrative of a case of excision of the knee by Mr. Crampton, afterwards Sir Philip Crampton and Surgeon-General of the Forces. He describes the patient, a girl, coming into the operating room with great fortitude and even cheerfulness, but, on the instant the knife was applied to the skin she became so ungovernable that four strong assistants could, with the utmost difficulty retain her upon the table. "The removal of the extremity of the femur was a work of great difficulty and danger as when the knife was passing between the bone and popliteal artery no entreaty could induce the poor girl, whom terror seemed to have deprived of her reason, to remain one moment at rest. She struggled so violently with both limbs that it was with a degree of labour and anxiety I had never before experienced that I at length succeeded in passing the edge of the knife round the condyles posteriorly thus detaching the divided end of the femur." It is interesting to know that the patient recovered and had a useful leg. "I could walk long distances without discomfort," she said, and a year after she was able to stand or walk the length of a day."

An interesting account is given of a medical friend of Sir James Y. Simpson who was so unfortunate as to lose a limb by amputation. Here is his pathetic description:—"The operation was a more tedious one than some which involve much greater mutilation. It necessitated cruel cutting through inflamed and morbidly sensitive parts, and could not be despatched by a few strokes of the knife. Of the agony it occasioned, I will say nothing. Suffering so great as I underwent cannot be expressed in words, and thus fortunately cannot be recalled. The particular pangs are now forgotten; but the blank whirlwind of emotion, the horror of great darkness, and the sense of desertion by God and man, bordering close upon despair, which swept through my mind and overwhelmed my heart, I can never forget however gladly I would do so. . . . . During the operation, in spite of the pain it occasioned, my senses were preternaturally acute, as I have been told they generally are in patients under such circumstances. I watched all that the surgeon did with fascinated intensity. I still recall with unwelcome vividness the spreading out of the instruments, the twisting of the tourniquet, the first incision, the fingering of the sawed bone, the sponge pressed on the flap, the tying of the blood-vessels, the stitching of the skin, and the bloody dismembered limb lying on the floor. Those are not pleasant remembrances. For a long time they haunted me, and even now they are easily resuscitated; and though they cannot bring back the suffering attending the events which gave them a place in my memory, they can occasion a suffering of their own, and be the cause of a disquiet which favours neither mental nor bodily

“health.” \* Of course all this occurred before my time, but it is only fifty years ago that such experiences were common.

The condition of our hospitals has much improved since my student days. The small, narrow, dark, and ill-smelling wards have given place to large, spacious, well-ventilated apartments, presided over by a young woman of pleasant appearance smartly dressed in washable garments, and assisted by two or three more like her, who take accurate observations of the temperature, pulse and respiration, and put them on a chart so that he who runs may read. In my day, age and frowsiness seemed the chief attributes of the nurse, who was ill-educated and was often made more unattractive by the vinous odour of her breath. Cleanliness was not a feature either of the nurse, the ward, or the patient, each one did as best pleased her, and her “langwidge” was “frequent and painful and free.” If the day-nurse was bad, the night-nurse was worse, and as a *solatium* to help her to bear the burthen of the night, the stimulants which were then freely prescribed for patients, to make up, perhaps, for the lessened tone due to purging and sepsis, often found their way down her throat. One nurse had charge of several wards on different flats, and if a patient was violent, or even delirious, he was strapped down to his bed. This has occurred since I was on the staff of the hospital, before the introduction of the modern training school for nurses. I remember on one occasion, having operated on a man for strangulated hernia, and, there being no one to restrain him, the patient got out of bed and sat out on the back gallery, then he helped himself to tap-water and drank milk which was at the bed-side of other patients and also ate bread. I found this out accidently from another patient and complained about it, so next night, when I went down, I found my patient gagged and strapped hand and foot to the bed to prevent him from misbehaving again. The man got a pneumonia of which he died. Armies of rats frequently disported themselves about the wards and picked up stray scraps left by the patients and sometimes attacked the patients themselves. This is all now changed, and the modern hospital is something to be proud of though it errs perhaps on the side of luxury. The beautiful rows of spotless beds, the shining dustless floor, the fresh air, the order and freedom from sadness, in fact, the universal cheerfulness (especially in surgical wards) of the patients, and last but not least, the nurses of whom I have already spoken. The operating rooms nowadays are palatial marble halls where formerly they were shambles, furnished with pulleys for reducing dislocations, reeking with odours and adorned with the blood-stained and blood-soaked table. In a celebrated hospital I saw in Dublin the operating room was built over a cess-pool. When I was in Vienna in 1874 and 1875, antiseptic surgery, which I had seen under Lister in Edinburgh, had not yet penetrated so far and the mor-

\* The Semi-Centennial of Anæsthesia, Boston, 1887.

tality was appalling. I never saw a case of strangulated hernia recover after operation. The great Billroth presided over the chief surgical clinic and his mortality was quite as great as his neighbours. In England there had always been more or less attention to cleanliness, and the results of English surgery were fairly good, so that they were on this account much slower to take up antiseptic surgery, feeling quite satisfied with their results. In Germany and Austria, the change from septic to antiseptic surgery worked a miracle, from being laggards in the surgical field, the Germans became leaders and many of the triumphs of modern surgery are due to the good work of the Germans. They were not satisfied with the modest little steam boiler of Lister, but went to extremes, and had a ten horse-power boiler in a special room adjoining the operating room, and from it poured out volumes of antiseptic spray till the operators, patient, and assistants were wet to the skin and the atmosphere was worse than a London fog. Soon men found out that quite as good results were obtained by irrigation so the cry was "*fort mit dem spray*", and the boilers became obsolete. Now there was a Niagara of antiseptic solutions, the operator and his assistants waded about the operating room in long rubber boots. Visitors who had no boots got on chairs and watched the deluge of antiseptic lotions which played continually on the patient and on the floor. Soon it was found that this was doing too much and Aseptic Surgery came in, deluging with antiseptics was abandoned, and dry dressings were adopted, with aseptic and sterilized materials and the patients did quite as well. The tendency to-day is to simplify methods and to abolish the elaborate antiseptic ritual which succeeded to the days of dirty surgery. What the next new fad will be, I cannot say, but owing to our increasing knowledge of bacteria and their influence on the tissues our methods are becoming much modified. As was said of Mrs Mapp, a celebrated quack, who flourished in the last century :—

"In physick as well as in fashion we find,"

"The newest has always the run with mankind."

Byron has said,

"Thus saith the preacher. Naught beneath the sun  
Is new, yet still from change to change, we run.  
What varied wonders tempt us as they pass,  
The cow-pox, tractors, galvanism, gas,  
In turn appear, to make the vulgar stare,  
Till the swollen bubble bursts, and all is air."

So far I have spoken only of the hospitals, our college teaching, except in the Practice of Medicine and Surgery was most elementary. Our anatomy was a farce. I never, as a student, dissected the pharynx, the thorax, or the abdomen. We used to toss up as to who should take out the intestines and the abdominal organs. The anatomy of hernia and lithotomy together with the arteries of the extremities comprised all the surgical anatomy. The anatomy of the convolutions of the brain was

unknown, and as for the course of the fibres in the brain and the spinal cord, they were a mystery. Physiology was not much better. The college possessed *one* microscope and I remember well waiting my turn for over an hour to see the circulation of the blood in the frog's foot. Sometimes, towards the end of the session, we had a day when we took turns to look at about a dozen imported microscopic slides of the various tissues.

In my student days and for some time afterwards, the cause and origin of phthisis created much dispute and acrimonious discussion. The discovery of the tubercle bacillus by Koch, followed by experiments with tuberculin soon cleared the atmosphere and settled the question of the origin of the disease and its contagiousness. Koch's discovery was followed by many others, and new fields of investigation were opened and much light thrown upon the cause of disease. Of course this phase went to extremes and everybody was discovering bacilli. One was discovered in old age, another in fracture of the leg and so on, but the knowledge of the bacillary origin of disease affords us some hope that in time to come remedies may be found which will abolish certain troubles which at present afflict the human animal and others. *Materia Medica* was of the most ancient character, though dragon's teeth, powdered skull and mummy were not in the list of drugs. Still we heard a good deal about musk and castoreum, antimony and ipecac, cassia and squills, tragacanth and gum acacia, coccus and Spanish fly. Now we have firms of manufacturing druggists who not only put up beautiful preparations of various drugs in a portable and palatable form, but they kindly tell us what to use them for, and how to use them. We shall soon have our drugs given in the streets perhaps from "penny-in-the-slot" machines. We had some very good bedside teaching from men like the late Dr. Howard who was a born clinical teacher. We spent considerable time in the hospitals picking up what crusts we could from the attending physicians, and making out the rest for ourselves. The clinical examinations, like the clinic, were conducted in the hospital, I admit, but certainly not at the bedside. Now, all this is changed, and any one who wishes practical instruction in any subject is able to get it in well equipped laboratories. Your opportunities are great, Gentlemen, and see that you take proper advantage of them. Much is in the womb of the future, great discoveries by which disease will be arrested, much diminished, or abolished altogether, are in the air. We are in a progressive age, and one which is teeming with interest. God grant that our brains will keep pace with what it is necessary to learn, so that we may not be left behind in the rapid march of science. I trust that this great University will retain its place in the van which it has gained by hard work and perseverance, and that it will never lag behind. In the hands of the younger generation, your hands, Gentlemen, is the lamp of scientific

progress. See that you keep it brightly burning and never let it run out of oil of research and careful observation.

Now as to medical education, I am a strong advocate of a five years course, but believe the fifth year should be devoted to practical work only, not to lectures. Owing to the faulty preliminary education of most students, much time is wasted at first in learning how to learn, and then owing to the fact that their powers of observation have never been cultivated, they have to learn how to observe for themselves and not through the medium of others. I find that many students do not know the meaning of words, and they have only a parrot knowledge of their subjects, a truly deplorable state of affairs. Learn less but learn that well. The fault of modern education is that it attempts too much. Numberless subjects are dipped into, not mastered, and all the new methods and subjects are much elaborated whilst the old are comparatively neglected. It is my opinion, that although every one should have a laboratory training, it is possible to have too much even of this; that the true laboratory of the medical student in his final years is the hospital, and hospital should be attended without the fear of a coming examination before one's eyes, and without the tediousness of always attending lectures. The performing of large and important operations in the public theatre is not profitable to the student, nor should didactic lectures be given in the operating theatre, with the patient in bed for a text, be considered clinical lectures. It is most difficult to teach, clinically, large classes, hence, these should be divided up, and a number of men appointed to give tutorial instruction at the bedside. In surgery, the students in rotation could be made actual helpers, should sew up wounds, tie ligatures, etc., under the direction of the chief or his assistants. The out-door service should be made use of. I hear now it is much neglected because of want of time. This should not be, for it is a most important service, and the knowledge gained there is of inestimable benefit to the young practitioner and furnishes the class of cases he is likely to see the most of. Besides, in the out-door clinics the instruction is truly clinical and practical. I think you are over examined and fear you consider examinations are the end of all things. Alas! When you have got through them, the first step only has been taken, and there are many more precipitous heights yet to climb. One will begin to make progress when he realises how very little he knows of any subject. To seek knowledge for its own sake and not merely to pass examinations or for what it will bring in dollars and cents, is one of the things to be expected at the coming millenium, but endeavour to do this as nearly as you can.

“Happy is the man that findeth wisdom and the man that getteth understanding, for the merchandise of it is better than the merchandise of silver and the gain thereof than pure gold.”

## SYPHILIS AND THE LIVER.\*

BY

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

Professor of Pathology, McGill University.

Without doubt the most important fact elucidated by a study of the hepatic lesions of Syphilis is that, from an anatomical and histological point of view, no distinction can be drawn between secondary and tertiary syphilis.

Clinically I admit that such a distinction is useful, nor do I wish it to be thought for a moment that I imagine it can be done away with, although even clinically—as seen in connection with the syphilodermiæ—the establishment of a hard and fast demarcation between what is secondary and what tertiary leads not infrequently to confusion. The most that can be laid down is that when syphilis is acquired in the ordinary way, by sexual intercourse, the extension of the disease in general follows a definite course, the tissues tending to be affected in definite order. Or perhaps it is more correct to say that in syphilis as in other zymotic diseases—I use the term zymotic in its strict sense—there is a local or tissue predisposition, so that certain tissues are apt to be more extensively and more markedly affected than others, the virus multiplying more readily, so that in them as a consequence, there is an earlier and more pronounced reaction.

But while this is the case, the reaction in a given tissue is of like order, be the period of local infection early or late: at most there may be histological differences caused by variation in the interaction between virus and tissue. If the virus be strong or the tissue be possessed of feeble reactive powers, the histological appearances differ to a greater or less extent from what is seen when the virus is weak or the tissue possesses originally or has acquired strong reactive power. And as a corollary to this, it may be said that where the virus is powerful and there is rapid proliferation there, in such diseases as syphilis and tuberculosis, the course of the disease is modified so that we have to deal not solely or not in the main with the local disturbances caused by focal growth of the virus, but see well marked other anatomical changes brought about by diffusion of the toxins. In other words, where the tissues are susceptible and the virus relatively powerful there may be generalised tissue disturbances apart from the granulomatous developments directly caused by the focal proliferation of the germs. For at the start, it must be laid

\* Being a contribution to the discussion upon Syphilis at the New York Academy of Medicine, March 9th, 1899.

down that although as yet we are uncertain as to the exact causative germ of the disease, syphilis is a disease of microbic origin. The more one studies, the more is one convinced that the analogy between tuberculosis and syphilis is complete—only in the one, we have isolated and studied the germ, in the other, we have not.

### THE LESIONS OF CONGENITAL SYPHILIS.

For what do we find with regard to the hepatic manifestations of syphilis? Let us first take those of the congenital disease. There are many reasons why these should be considered first: (1) These were the first hepatic manifestations of the disease to be studied and clearly recognized; (2) they are much more frequent and more extensive than are hepatic lesions in the disease of post-natal acquirement, and (3) death occurring very frequently within a month or two after birth there is less uncertainty as to the period of development and duration of the lesions than there can be in the disease of adult life.

That the liver should be so frequently affected in this form of Syphilis is easily understood if we remember that the specific syphilitic lesions of the new born are congenital and not inherited, that the infection is through the placenta and that, as a consequence, the infected blood coming from the placenta passes through the liver before it reaches the heart or any of the other tissues of the foetal organism. Chiari's well known observation may here be repeated, namely, that in 144 cases of infantile syphilis, he found the liver affected, and that extensively, in 123, or nearly nine-tenths. In the adult on the other hand both brain and testicle are more frequently the seat of extensive lesions, and when it is remembered how relatively common is tertiary syphilis and how relatively uncommon specific disturbances of any one of these three organs, the contrast between the frequency of congenital and acquired hepatic disturbances becomes most manifest. At the same time I am not prepared to accept Fournier's statistics as perfectly reliable: careful observation of 3429 cases of tertiary syphilis would surely reveal clinical evidence of more than 9 cases of hepatic implication.

This is not the place for me to point out the vulgar fallacy of speaking of inherited instead of congenital syphilis—suffice it to say that Gærtner's *reductio ad absurdum* of the inheritance, so-called, of tuberculosis,\* must hold equally for syphilis. Indeed, were it possible for the bacillus or germ of syphilis to be present in the ovum at the moment of fertilization, to lie latent during the embryonic period and only to cause reaction during foetal life, that is to say, after the different organs have assumed the form and structure which will pertain to them through

\* Zeitschr. f. Hygiene, XIII., 1893, p. 101.

post-natal existence, even then, such presence of the germ would not be true inheritance: it would be an epiphenomenon; for true inheritance demands the carrying over of features peculiar to the germ plasm of the parents. The accidental inclusion of a microbe in the ovum is not a matter of inheritance.

The different lesions due to syphilis to be met with in the infant's liver are, I think, included in the following list:

I. Well-defined gummata.

II. Miliary gummata with generalised fibroid change affecting circumscribed areas of the liver.

III. Admixture of miliary gummata and generalised fibrosis affecting the whole organ, which is, in consequence, enlarged.

IV. Generalised atrophic cirrhosis without much evidence of gummata but associated with icterus, œdema, etc., the organ being very granular and contracted.\*

Time forbids that I should quote examples of these different conditions. Quite the commonest is the second form in which there are no well developed gummata as generally understood, but on section through the affected areas, numerous minute focal collections of small round cells are to be made out, invisible or only just visible to the naked eye, and in their neighbourhood extensive pericellular fibrosis, so that the organ presents a patchy appearance, paler areas of large size standing out against the darker red or liver-colored background of the unaffected tissue. Here we have to deal with a relatively early and progressive stage of disease, in which there is little or no necrobiosis and development of gummy matter.

There are, however, fairly frequent cases on record of the development of true gummata, easily seen by the naked eye, some as large as an almond, and showing signs of contraction, recognised, not, I believe, in children born dead but in those dying as early as two weeks after birth (Canton.)†

The relationship between these miliary gummata and the gross gummata of the liver is that between miliary tubercles and isolated caseous tubercles of the same organ. We never think of suggesting that the two latter forms of tubercle indicate different periods of the tuberculous process. At most, we regard the first as of more acute, the second as of more chronic development. We know full well that miliary tuberculosis of the liver may develop at any stage of the disease, either soon after the primary infection or only as a terminal event after long years

\* To this list I find must be added the (very rare) appearance of tumour-like masses, the result of centrifugal necrosis and fibroid change, with peripheral over-growth of the liver tissue to which I refer later in discussing the syphilis of the adult.

† Trans. Path. Soc., Lond., XII., 1862, p. 113.

of slow and, it may be, intermittent extension of the disease elsewhere. The fact that both gross and miliary gummata may occur in the liver of the newly born is an absolute proof that the two forms are not characteristic of two different stages or periods of the disease. 'Absolute', that is to say, unless we are prepared to admit that while certain tissues such as the skin, present well marked secondary lesions, others may present either secondary or tertiary changes. Such an admission would make the terms 'secondary' and 'tertiary' valueless. For it must be kept clearly in mind that while the livers of these syphilitic infants show extensive fibrosis and indications which usually are recognised as of tertiary type, the cutaneous eruptions are secondary manifestations.

Over and above the granulomatous changes in the infant's liver it is most noticeable that a more generalised affection is peculiarly frequent, namely, fibrosis affecting either the whole organ or larger or smaller areas. Such fibrosis might be due to various causes; indeed, our knowledge of the etiology of cirrhotic changes in the liver, as in the kidney, and our knowledge of fibrosis in general is not sufficiently advanced to permit us to make positive statements. And, yet, since 1896 when, in this very room, although not before your Society, it was my privilege to deliver the Middleton-Goldsmith Lectures and I discussed the pathology of fibrosis in general, some little advance has been made in our conception of the process. For, on the one hand, Flexner\* has shown that toxic substances (the blood serum of another animal), may lead to the development of cirrhosis, and, on the other, Weaver,† of Chicago, within the last few weeks, working (I think I may say) along lines suggested by certain publications of mine,‡ has demonstrated that bacteria exist which directly induce hepatic cirrhosis. Thus it would seem that whether in the process of excretion of toxic substances by the liver cells, or by the taking up of certain bacteria, and the influence of their toxins when so taken up, the liver cells may undergo a parenchymatous degeneration so intense that death ensues and, following thereupon, a replacement fibrosis occurs, more or less pure and unaccompanied by acute inflammatory change according as to whether the parenchymatous disturbance is unaccompanied by interstitial irritation or not. Where many miliary gummata are present, there eventually, much fibroid change is brought about by the tissue changes in their immediate neighbourhood.

We are not as yet in a position to state whether the fibroid change of this type in the liver of the syphilitic child is a consequence of the attempted removal of the syphilitic germs from the portal circulation by the agency of the endothelium of the hepatic blood vessels and by the liver cells, or whether it is the circulating toxins of the disease that

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\* Flexner, Trans. Path. Soc., Philadelphia, 1896.

† Weaver, Philadelphia Med. Jour., Feb. 4, 1899, p. 231.

‡ MONTREAL MEDICAL JOURNAL, July, 1898; British Med. Journal Oct. 22, 1898.

cause the disturbance. To me, it would seem that one or other of these causes must be at work. The pericellular character of the cirrhosis is against the change being in the main a fibrosis following upon rounded and miliary gummatous infiltration, while the fact that the change may affect the whole organ, as again the very extent of the areas affected when the whole organ is not involved, is quite opposed to the view that we have to deal with primary focal necroses such as are to be met with in Typhoid and other acute infective diseases, or with infarctous disturbance.\*

If Marchand's cases of atrophic granular cirrhosis, occurring in fœtuses born dead are, as he holds, of syphilitic origin, they afford evidence of the extreme results of such fibrosis following upon generalised syphilitic parenchymatous hepatitis.

Thus, to sum up the broad features characterising the syphilitic manifestations in the infant's liver:—

(1.) Syphilis may lead either to granulomatous deposits in the organ or to interstitial fibroid changes.

(2.) The specific granulomata may be present either in the form of minute multiple miliary gummata, or of isolated larger gummata such as in general are regarded as being of tertiary nature.

(3.) It is not possible to regard the one form as secondary, the other as tertiary, for either may co-exist with cutaneous disturbances of the secondary type.

(4.) By analogy, the interstitial fibroid change, so common in infantile syphilis, would appear in the main to be secondary to a degeneration and necrosis of the hepatic parenchyma induced by the action of the toxins of the syphilitic virus upon the individual liver cells. In part it is developed in direct association with the development of miliary gummata.

#### THE LESIONS OF ACQUIRED SYPHILIS.

Passing now to the hepatic disturbances in syphilis, of post-natal acquirement, we find it more difficult to determine the age and duration of the lesions found, a difficulty due to the fact that syphilis is not in itself a cause of death during the months which immediately follow infection. I know of no adequate study upon the livers of those who, suffering from well marked secondary symptoms, have succumbed to intercurrent disease. A thorough investigation of the visceral changes occurring in the secondary period, remains as much a desideratum to-day as it was in the seventies when Jonathan Hutchinson called attention to this gap in our knowledge. It is however probable that in the vast majority of cases, the liver is not gravely affected during the secondary stages of the disease, for otherwise, it is most unlikely that with the vast number

\* Dr. Jacobi informs me that he has met with one of these cases and could only conclude that it was of syphilitic origin.

of autopsies made annually, a fair number of instances of death during this stage, should not have been investigated, so that any marked departures from the normal in the condition of the organ, should by now have gained recognition. It is equally true, that there might be a certain amount of disturbance—the existence of miliary gummata or again a moderate extent of parenchymatous degeneration—which might easily escape detection, or be ascribed to other causes.

Some few cases are on record of extensive hepatic derangement during the secondary state. Thus, Hilton Fagge\* reports the case of a female of 23 in whom there was a history of syphilitic rash with loss of hair and macular syphilides; jaundice supervened and the patient became drowsy and comatose. At the autopsy, the liver, which weighed 46 ounces, was of an opaque, bright yellow color and of dense consistence. The surface was mottled, the left lobe resembling very closely that of the infantile syphilitic liver;—on section, the organ appeared pale and semi-pellucid, and microscopically, the parenchyma was seen to be replaced by connective tissue. Unfortunately the description given does not extend to full details. But clearly here is a case of generalised cirrhotic change in secondary syphilis not unlike that found in the infantile disease.

There are on record some few other cases of like nature. To my regret during the last few months I have been away from laboratories and libraries, but in the course of an afternoon's search through the literature, I have come across quite a series of cases. One of the clearest examples is that recorded by Neumann,† in his admirable article upon syphilis, the case of a man of 20 years ill for about 8 months, who apparently was infected in June 1893 and in March 1898. a papular eruption was seen upon the external genitalia and mucosa of mouth together with slight icterus. The icterus increased and there was great abdominal pain, while ecchymoses appeared on various parts of the body. The liver diminished in size and 19 days later the patient died with uræmic appearances. The autopsy was performed by Kolisko who found a condition of catarrhal icterus with cholæmia together with the very interesting condition of "regeneration of the hepatic parenchyma in the form of adenomatous growths following upon acute atrophy. Kratz‡ records a similar case. Neumann quotes several cases of acute parenchymatous hepatitis in the secondary stage of the disease and holds it not improbable that there may be a relationship between the syphilis and acute atrophy of the organ.

Dittrich from a study of 46 cases has concluded that acute syphilitic hepatitis in general occurs during the secondary period. Engel- Rei-

\* Hilton Fagge, *Trans. Path. Soc. London*, XVIII., 1867.

† Nothnagel's *Specielle Pathologie*, Vol. 23, p. 409.

‡ 66 *Versamml d. Naturfor und Ærtze.*, Vienna, 1894.

mers,\* on the other hand is inclined to believe that the acute yellow atrophy seen in recent syphilis is secondary to obstruction of the bile ducts, for in three cases he found enlarged glands compressing the ductus communis choledochus. I must, however, confess that it is difficult to follow his explanation; mere obstruction will not lead to acute yellow atrophy.

It will be noticed that in several of the above cases jaundice manifested itself. Now jaundice is a not uncommon event in secondary syphilis. Attention has frequently been called to its existence from the time of Ricord and Gubler onwards; Lancereaux alone collected twenty one cases, Lasch, † forty-nine. Within the last two years, Neumann, Joseph and Uhlmann have redirected attention to its prevalence. I cannot but think that this jaundice must afford another indication of what I have already dwelt upon in connection with infantile syphilis, namely, that the liver, being a great excretory organ, may in certain cases be so injured by the action of syphilitic toxins, that parenchymatous and it may be catarrhal hepatitis is set up and the jaundice be an indication of the functional disturbances due to this cause. This view appears to be more probable than either of the other suggested explanations, to wit, that the jaundice is obstructive and due either to specific growths in the bile ducts or to the pressure of enlarged lymph glands at the hilus of the liver upon the larger bile passages.

We thus, even in the early stages of the disease of postnatal acquirement, obtain evidence pointing to the existence of generalised effects of syphilis upon the liver. As I have pointed out elsewhere ‡ a fairly extensive fibrosis, apparently independent of the gummatous developments, is not infrequently to be met with in cases where there is active progressive syphilis long years after primary infection.

Turning now to the more generally recognised evidence of syphilis affecting the liver in the tertiary stage, namely the gummata, and discussing first the large gummata, which are the most characteristic lesions of acquired syphilis, it must be clearly borne in mind that two distinct conditions are popularly confounded together and both regarded as tertiary manifestations, namely :—the fibroid pittings and cicatrices which are the final indications of gummatous deposits in the liver, which remain after complete absorption of the original gummatous mass. We not infrequently come across these disfigurements and distortions of the liver in the bodies of those who for years have presented no indications of active syphilis, and they must, I hold, be regarded as obsolete gummata. Indeed, in one case upon making microscopic sections through a

\* Monatschrift f. prakt. Dermat., 1892, quoted by Neumann.

† Lasch, Berlin Klin. Wochenschr., 1894.

‡ MONTREAL MEDICAL JOURNAL, June, 1898, p. 401.

most characteristic puckering, I found scarce any fibroid tissue left : that also had undergone absorption. On the other hand,, we have to recognise gummata with cheesy or gummy contents surrounded by fibrous tissue, which are latent or obsolescent. and others again presenting like characters,—but surrounded by hepatic tissue which under the microscope presents infiltration with small round cells and evidence of progressive syphilis. It is these latent and active gummata which alone are of any importance, for both indicate that the disease, to say the least, has not been eradicated from the system.

The important point to notice is that in one liver we at times meet with all three forms above mentioned. I have come across cases at autopsy showing well marked cicatrices and puckerings of practically obsolete gummata, large well defined gummata with necrosed centres, and upon studying the sections of the liver from the neighbourhood of the latter, I have there seen the irregular minute collections of small round cells which in an infant's liver, we would have had no hesitation in describing as miliary gummata. These appearances I have seen in the liver of a man dying apparently only between two and three years after primary infection, as again in the liver of another infected 14 years before death.

The evidence before us all points to the fact that in the adult as in the infant's liver gummatus development may occur at any period after the disease has become generalised throughout the body.

From what has already been stated it follows that the same lesions are to be met with in the adult liver as are recognisable in the organ affected by ante-natal disease. There may be :

- I. Large well formed gummata.
- II. Miliary gummata.
- III. Jaundice and acute parenchymatous hepatitis.
- IV. Syphilitic cirrhosis.

But, clearly, the element of time introduces frequently a difference and appearance not seen in the infantile organ. Thus we encounter in addition:

V. Obsolescent gummata, large gummata undergoing involution and absorption with surrounding and limiting fibroid change and contracture. This is the lesion most frequently met with and most typical of the syphilitic liver of the adult\* and,

VI. Obsolete gummata represented by puckering of the organ and a relatively small amount of fibroid growth radiating from the seat of the previous gummatus formation—and by nothing else.

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\* What is the causation of the coarse bands of fibrous tissue radiating from these obsolescent gummata, I must leave an open question. It has been suggested that they indicate a tendency for the fibroid change to be developed along the course of the main lymphatic vessels leading from the gummatus focus.

VII. A further lesion which must be referred to, one not seen in the infant\* is the development of tumour-like outgrowths, so sharply defined and so large as not unfrequently to lead to the false diagnosis of malignancy. The structure of these masses affords some ground for believing them to be the outcome of a slow progressive centrifugal infection of the liver tissue from an original isolated gummatous focus (or small collection of neighbouring specific tubercles), with associated reactive hyperplasia of the liver tissue at the periphery—progressive immutation of the newly formed liver tissue by miliary gummata and eventual replacement of these by fibrous connective tissue, so that, microscopically, these tumour-like out-growths present an outer layer of liver tissue infiltrated by collections of small cells, enclosing a dense mass of fibroid tissue with more or less evidence of 'gummy' degeneration.

Time, therefore, is an element causing difference in the appearance of the adult and infantile lesions. But this is not the only one. The other, and yet more distinctive, is the predominance of generalised fibrosis in congenital syphilis, of focal granulomatous changes in the syphilis of adults. The explanation of this difference would seem to be that the young liver cells are more susceptible and less resistant to the injuries inflicted by toxic substances. They are more prone to degenerate, and, if the view here enunciated be correct (namely that the fibrosis is largely of the 'replacement' type), we have in this feebleness of the young liver cells a sufficient explanation why fibrosis predominates. With the adult cell it is different. Inasmuch as a main function of the liver is to eliminate toxic substances from the circulating blood, its cells, with advancing life, become capable of withstanding toxins to a relatively very considerable extent. It is, indeed, remarkable to observe what extreme degenerative changes of the cloudy and even of the fatty type may be observed in the liver cells of an adult rabbit, for example, a few hours after intravenous inoculation of 1 ccm. of a culture of such a form as the colon bacillus, and yet in the course of a few days (as determined in other rabbits similarly treated), the liver cells may have completely recovered show no sign of the intense disturbance set up by flooding the system with the bacilli and their toxins.

Thus in the adult (as distinguished from the senile), there is not the tendency for extensive fibroid change to manifest itself under the action of irritants, which in the young, lead to the production of the same.

It may be asked why the liver in newly born infants more than other organs is susceptible to these degenerative changes. There are, it seems

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\* In this, as already stated, I am mistaken. I owe to Dr. Jacobi (verbal communication), a reference to a case by Cohn of one of these tumour-like formations in the infant presenting all the features here described, and Prévost (*Ctes. Rendus de la Soc. de Biol.*, 1866-67, 4th series, III., p. 92), would seem to have encountered yet another case of this type.

to me, two main reasons: (1) the liver is especially concerned in the elimination of toxic substances and its cells bear the brunt of intoxication by the syphilitic virus. (2) Placed as it is, between the placenta and the general circulation of the foetus, its cells tend to eliminate toxic materials brought by the umbilical vein; in this way, again, they bear the brunt of intoxication, and at the same time reduce the amount of toxic material capable of acting deleteriously on the other organs. But it must be remembered that other foetal organs may also show extensive fibroid change.

There is one other factor in the production of specific lesions which, so far, I have not touched upon, one which, judging from studies made more especially upon the syphilitic heart and brain, may very possibly be of signal importance. I refer to arterial change, endarteritis and periarteritis. We know however, practically nothing concerning the part played by this in hepatic lesions; I can therefore, but mention it and pass it by.

Hence, to sum up; while the changes seen in the adult and infantile syphilitic livers are etiologically and anatomically identical, they tend to present differences due, in part, to their relative duration, in part to the reactive powers of the hepatic parenchyma at different life periods.

# THE TREATMENT OF DIPHTHERIA BY THE USE OF ANTI-DIPHTHERITIC SERUM.\*

BY

J. E. LABERGE, M.D.,

Physician to the Civic Hospital for Infectious Diseases, Montreal.

Formerly, the science of therapeutics borrowed its means of action from the vegetable and from the mineral kingdoms. To-day, we must add to those sources the animal kingdom, which owes its admission into the therapeutic art, to the discoveries of the illustrious Pasteur. Inspired by the principles thus engendered, Lister created antiseptic surgery which completely changed the method of operating and the manner of treating surgical patients. Then, Behring and Roux endowed medicine with serotherapy, which is tending to revolutionize therapeutics.

If nearly all surgeons are fervent advocates of antiseptic surgery, unfortunately many physicians have no faith in serotherapy, notwithstanding the fact that this method of treatment has shown its efficacy by lowering the mortality from diphtheria two-thirds or even more. To-day, every medical man should have a sincere faith in this remedy, an energetic faith. For, it is not only a question of applying the principle of serotherapy; but, further, a matter of applying it without delay. Negligent and tardy action compromises the value of the remedy and consequently the life of the patient.

It is true that oftentimes the parents are the cause of the delay in the administration of the treatment. But, it is our duty to convince them that serotherapy is the only efficacious treatment in cases of diphtheria and that it is effective only in so far as it is applied in the earliest stage of the disease. Who amongst us is there who cannot allege innumerable instances, instances of daily occurrence, both in private and in hospital practice, in which a pseudo-membranous condition of the throat has existed for several days without having been treated by injections of serum? Whether the fault be that of the parents or whether it be that of the attending physician, the consequence is the same, the compromising the cure of the case which can only be affected by the prompt and judicious use of serotherapy. Roux and Martin incessantly proclaim that prompt antidiphtheritic treatment is the first requirement to insure success.

We must not be surprised, however, if serotherapy has not yet finished with the labors of birth. Are there not, to-day, surgeons who obstinately refuse to avail themselves of rigorous antiseptic precautions; and

\* Read before the Montreal Medico-Chirurgical Society, March 6th, 1899.

who would deny or even doubt the excellence of the Listerian method which has placed its author in the first rank of the men of this century?

Antidiphtheritic serotherapy is, truly, definitely a conquest in modern therapeutics, it has proudly established the proofs of its scientific value, despite the accidents which have occurred, and which may occur in the future. This treatment is undoubtedly the surest, the most efficacious and the most prompt in its results. The clinical documents accumulated since this method of treatment has been applied are the proofs of this allegation. In Germany, in France, in England, in the United-States, in fine, in all civilized countries, the treatment of diphtheria by serotherapy has given unhoped-for results.

In Germany, Schubert reduced to 18 per cent., and Canon to 20 per cent., the mortality which before the use of antidiphtheritic serum had been beyond 50 per cent. Koste in a series of 121 patients treated by injections of serum had a mortality of 33 per cent., while at the same time among 106 patients not treated by this method the mortality was 53 per cent. Aronson, Rats, and Baginsky had a mortality of only 13 per cent. among their patients.

In France, in 1894, Roux, Martin and Chailloux lowered to 26 per cent. the mortality that had hitherto been 51 per cent; and at the same time at the Trousseau Hospital where the serum was not employed, the mortality reached 60 per cent. Leberton placed the mortality at the "Hôpital des enfants malades" to 12 per cent. Sevestre gives a death rate of 10 per cent.

In Vienna, Monti had a mortality of 18.4 per cent. amongst his patients. In the United-States, Biggs showed that the mortality was 10.4 per cent. in New York and 24 per cent. in the Willard Parker Hospital.

In England, Raw with the serum reduced the mortality to 12.5 per cent. when it had been originally 47.4 per cent.

"The Medical Annual and Practitioners Index" gives the statistics of 11,100 cases treated by the serum, showing that the mortality was 15.4 per cent. Since I have been physician at the Civic Hospital 691 patients affected with diphtheria have been received. Of this number 93 died; 34 within 24 hours after their admission. This gives a death rate of 13.5 per cent., and should I deduct the 34 patients who died before having had time to benefit by the anti-diphtheritic treatment, I should have had a mortality of only 9 per cent. It must not be forgotten, too, that almost all the patients are weak children reduced to a state of anæmia by all sorts of privations, having lived in the midst of the most deplorable hygienic conditions. These are facts which speak loudly in favour of the anti-diphtheritic treatment. Allow me now to give the results of the experiments that have been made, and the marvellous results obtained by the serum treatment, as a preventive against diphtheria. Of 12,426 persons in contact with patients suffering from diphthe-

ria and who were injected with the serum as a preventative measure, 53 only contracted the disease. Is it not to be desired, in the presence of such facts, that every time a case of diphtheria occurs in a family, the children should be immunized by injections of the serum; and the more so as such injections are without danger?

Roux gives the following figures; 128 children suspected of diphtheritic sore throat were injected at an interval of 24 hours with 40 cc of serum, and upon bacteriological examination were found to be non-diphtheritic. These children, who had received a quantity of serum eight times greater than was necessary to immunize healthy subjects, suffered from no untoward results, apart from slight fever, an eruption, and articular pains.

Since diphtheritic patients have been treated with serum, many things have been said against this system of medication: but all the objections to the employment of this method of treatment may be reduced to three principal accusations, which we shall now examine.

1st. The serum does not infallibly cure all cases of diphtheria. Unhappily this is true; but it is the exception, the very rare exception. The physician who cites an isolated case of failure and makes of it a plea against this method of treatment, should take into account the point of intoxication at which his patient was when the injection of serum was made. He should take into account the dose injected and the previous state of health of the child; and almost always he will find the cause of his want of success, in delay in administering the treatment and the insufficiency of the dose injected. Antitoxin acts upon the agents which protect the organism by stimulating them. But, if these agents are so weakened that they are no longer able to receive any impression, naturally the medication will have no effect. It must not be forgotten that antitoxin, while having the power to arrest infection at the point that it has already reached, remains inert against diphtheritic toxin.

2nd. Accidents result from the use of the serum. This reproach is true, but let us review these accidents and ascertain their gravity. Among the most common are cutaneous eruptions appearing about the first day after the initiation of the treatment. Such eruptions are exanthems with or without fever, and often accompanied by articular symptoms. They, as a rule, last about 48 hours and disappear rapidly without leaving any traces. This accident is not peculiar to antidiphtheritic serum. It is common to all serums, and it is not the only therapeutic agent which produces untoward effects of this kind. Yet, is there a single physician who would refuse to employ when necessary the bromide or the iodide of potassium, because they also produce a skin eruption?

Again, the serum has been accused of being the cause of albuminuria in diphtheria. In all diseases of microbic origin there is the production of toxin and therefore elimination of toxin. This toxin, in passing

through the kidney, irritates, inflames, and affects it more or less profoundly. In typhoid fever, in scarlatina, in variola, in all the contagious diseases, we often meet with albuminuria although injections of serum are not given in those diseases. Nephritis, when present in diphtheria, is not the effect of the serum, it is due to the microbial toxin; and to-day if we find, more often than hitherto, albumen in the urine of diphtheritic subjects, it is because we now cure our patients, while formerly they died before albumin could be found in their urine. Only the slight cases recovered before the use of the antidiphtheritic serum.

3rd. The serum has been accused of having caused death. This is a grave statement, and, if well founded, would to a certain extent justify those who object to this treatment. But we must not conclude *post hoc ergo propter hoc*. Facts must be shown, and facts to the point of absolute evidence to convince one that a treatment, which has reduced the mortality of diphtheria to 15 per cent. or even 10 per cent., could be a dangerous treatment that ought not to be employed. A few exceptional cases have been brought to the notice of different medical societies. Moizard, Ausset, Langerhaus, and Variot have reported unfortunate accidents which they unjustly attribute to the serum. I say unjustly because their observations only show one thing, that is that those fatal accidents occurred after the administration of a dose of serum. But that is all that they prove. Allow me to bring to your notice one of these observations and then judge for yourselves the value of the conclusions. Twelve days after having received 20cc of Roux's serum, which cured the little patient of diphtheria, there appeared a general erythema with albuminuria and extreme prostration. To these symptoms was added bronchopneumonia which carried off the child in 11 days. The serum is accused in this case of having put the subject in a condition of lowered resistance, which resulted in his contracting bronchopneumonia followed by death. But why accuse the serum of being the cause of this misfortune? Is it not more reasonable to accuse the diphtheria, which the child had a few days previously, of having caused this lowered condition of the organism? I cannot cite all the reported disastrous results imputed to the use of the serum although they are not very numerous, but none that I have read of give absolute proof that the serum has been the cause of death. Those who rely upon such isolated facts should be asked to give something more than mere affirmation; we demand demonstration, and even though this allegation should be true, should it be considered a reason for abandoning recourse, when necessary, to a treatment that has given such splendid results? It would be quite the same as the abandoning of the use of chloroform, which although it has rendered the greatest benefit to humanity, nevertheless causes death in some cases. Some medical men, unfortunately, hold ul-

tra radical opinions and have thrown discredit upon this method of treatment which has, at least, fairly well established its character for efficacy.

Permit me to close this paper by submitting to you the rule which guides me in the administration of this treatment to the patients confided to my care.

I employ by preference the serum prepared at the Pasteur Institute in Paris, which has given me the best results. When I have before me a patient affected with diphtheria I inject immediately 20cc of serum and 24 hours after this first injection, if the temperature has not fallen and still more particularly if it has risen, I inject another dose of 10cc or 20cc according to the case. If the case is a specially serious one, 12 hours after the first injection I inject another dose of 10cc or even 20cc. I invariably take as a guide in the administration of a new dose the general condition of my patient, his pulse, and specially his temperature. The local condition gives me no important indication. Thus, if the temperature after the first injection should rise and remain high or else remain stationary instead of falling within 24 hours, I inject every 12 hours or every 24 hours doses of either 10cc. or 20cc. according to the age of the patient and the gravity of the case.

As to local treatment, it amounts to very little. Abundant irrigation with a solution of boric acid every two hours, has a very soothing effect and a marked antiphlogistic action which I consider to be its principal advantage. After each irrigation the patient has a certain period of repose. Peroxide of hydrogen, which I used for a time, did not give so much satisfaction. It irritates and dries up the throat; and besides the apparatus to be used as atomizer is often a cause of annoyance. When the false membrane extends to the nose I sometimes irrigate with slight pressure; but, if the irrigation should cause bleeding, I discontinue it, and replace it by an ointment of boric acid and menthol applied to the nostrils every 2 hours. I prescribe stimulants, citrate of iron quinine and strychnine; milk diet; intestinal disinfection; rest in bed until the pulse has become normal. The urine is examined daily.

Such is the treatment followed in the Civic Hospital. If the patients were received into the hospital within 24 hours after the onset of the disease I have such confidence in serotherapy that I believe I may say that almost all the cases could be saved.

One other and a final word. Do you not believe with me that the city of Montreal should have a depot for serum to be distributed gratuitously to the poor upon a physician's certificate, that in fine we should do for cases of diphtheria what we are doing for smallpox? I believe that by adopting such a system a large number of patients would receive the benefit of the treatment in opportune time and preventive injections could be made, which would greatly diminish the number of victims to diphtheria.

# A BRIEF CONSIDERATION OF EMPYEMA OF THE ACCESSORY CAVITIES OF THE NOSE.

BY

ROBERT H. CRAIG, M.D.,

Assistant Laryngologist to the Montreal Dispensary.

The subject of diseases of the accessory cavities of the nose has been considered in medical literature for over two hundred years, but it is only within this last decade that the pathological anatomy has been thoroughly worked out by Zuckerkandl, Grünwald, Hajek, and other continental teachers, who have thus established a firm foundation and enabled the surgeon to form an accurate diagnosis in such cases.

I do not propose to go deeply into the subject this evening but simply to refer to some of the more important features. When pus is found in but one side of the nose, and after excluding syphilis, tubercular ulceration of the nasal mucosa, and the presence of foreign bodies, the probability is that one or more of the accessory cavities is diseased. Parosmia is a very frequent subjective symptom, the objectionable odour so frequently complained of by such individuals may only be subjective or it may cause offence to others this being dependent upon the amount of destruction present. On examination of the nose, if the antrum of Highmore, the frontal cavity, or anterior ethmoidal cells are affected, pus is usually found in the anterior third of the middle meatus in the region of the hiatus semilunaris and if an accessory opening exists in the inferior meatus, pus will be found in this situation. It will be readily understood if one will only bear in mind the normal openings of these three cavities why pus should appear in this situation, for the aperture of the maxillary antrum is situated in the posterior part of the hiatus semilunaris under the anterior end of the middle turbinal. The most constant opening of the anterior ethmoidal cells is situated between the ethmoidal bulla and the anterior insertion of the middle turbinal, that of the frontal cavity in its most dependent part, and leads into the nasofrontal duct which opens into the uppermost part of the hiatus semilunaris. The diagram below shows clearly the respective openings of the frontal, anterior ethmoidal, and the antrum of Highmore:

The opening of the posterior ethmoidal cells is in the sphenoid-ethmoidal recess and that of the sphenoidal cavity in its anterior wall. The size of the latter opening varies but is always situated in the anterior wall, the distance of the aperture from the anterior nasal spine being

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\* Read before the Montreal Medico-Chirurgical Society, February 6, 1890.

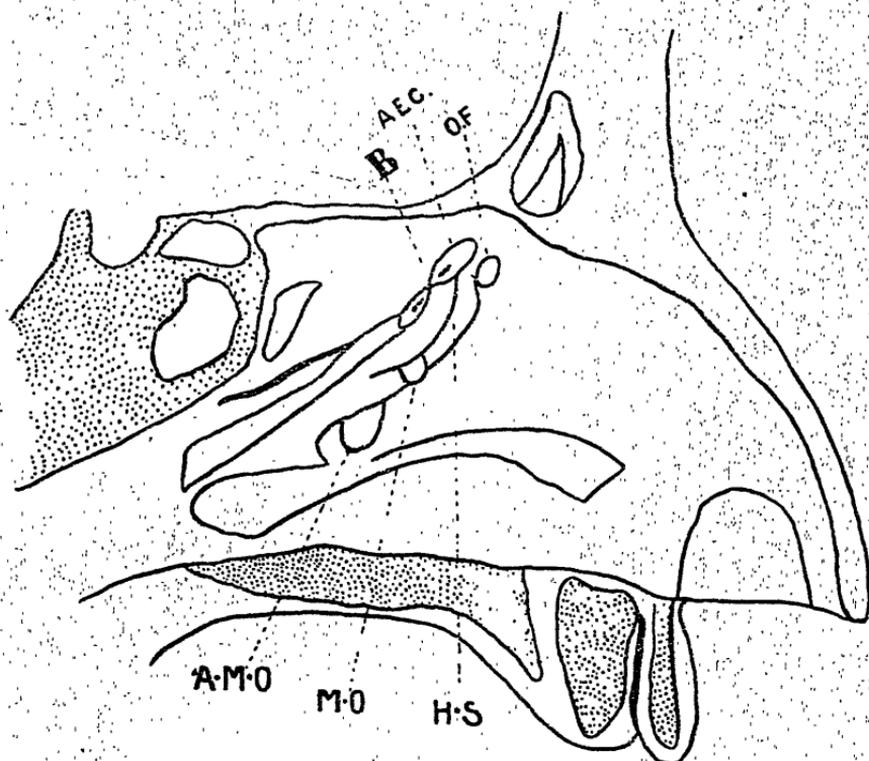


Diagram showing the left lateral nasal wall after resection of the inferior and middle turbinal.—(From Zuckerkandl's *Anatomie des Nasenhöle.*)

- O. F. Inferior opening into naso-frontal duct.
- A. E. C. Opening into the anterior ethmoidal cells.
- B. The ethoidal bulla.
- H. S. The hiatus semilunaris.
- M. O. The maxillary opening into Highmore.
- A. M. O. The accessory maxillary opening.

from 8 1-2 to 10 centimetres in the male and 7 1-2 to 8 1-2 in the female.

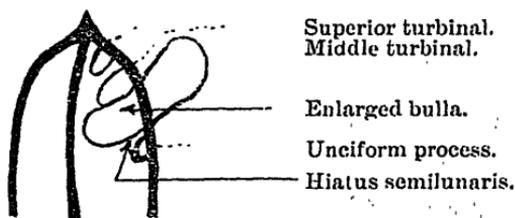
Pus originating from either of the above cavities appears between the posterior third of the middle turbinal and septum, or in the choanal or vault of the pharynx, frequently appearing in the form of dry crusts in the last named situation.

Empyema of the nasal cavities is often accompanied by swelling of the nasal mucous membrane particularly that portion which covers the hiatus semilunaris, the unciform process, and the inferior and outer surface of the middle turbinal. Grünwald considers that a polypoid condition of the middle turbinal is always indicative of empyema of one or more cavities, but Schmidt's, Chiari's and E. Frankel's observations do not confirm Grünwald's assertion.

The frequent symptoms of referred pain in the so-called cases of facial

neuralgia, is often caused by pressure of the secretion in the antrum upon the branches of the trigeminus; and in closed empyema, as the result of the accumulation of secretion, distention of the walls of the cavity often occurs. The cavity of the antrum in such cases becomes round in form, and if the tension is not relieved, bulging of the inner or anterior wall is noticed, or there may be bulging over the hard palate, recognised by the presence of a soft fluctuating tumour situated at the roof of the mouth. Further observations must prove whether the cases described by Weichselbaum, Grünwald, Manchot and others, in which peritonitis and perichondritis of the thyroid cartilage were associated with empyema of the antrum of Highmore, were caused by a direct infection from the latter cavity; or whether these localized inflammatory areas were local manifestations of a general infection.

On examination of the nose in cases of closed empyema of the ethmoidal labyrinth one frequently finds dilatation of the ethmoidal bulla and atrophy of the middle turbinal due to pressure upon it by the enlarged bulla as shown roughly in the accompanying diagram.



Superior turbinal.  
Middle turbinal.

Enlarged bulla.

Unciform process.

Hiatus semilunaris.

The bulla is sometimes congenitally dilated, but in such cases both bullae participate in the enlargement. Again, the middle turbinal may become enlarged and present a bowl-shaped appearance. Such enlargement must be differentiated from the condition first described by P. Heyman, in which an isolated ethmoidal cell, frequently found in the anterior third of the middle turbinal, becomes dilated owing to occlusion of its duct. And, finally, when the whole ethmoidal labyrinth is diseased complete dilatation of the inner wall may occur. In such cases a tumour will be found which fills up the olfactory portion of the nose causing deviation of the septum to the opposite side and with its resulting symptoms.

A very suggestive external symptom of distention of this cavity is displacement of the eye downwards and outwards, due to pressure of the paper plate upon the tissues of the orbit, or rupture of the plate and evacuation of the contents of the cavity into the orbit. The possibility of the infection of the meninges by the blood current or by rupture of the cribriform plate must not be overlooked. When there is occlusion of the naso-frontal duct with accumulation of secretion within the frontal cavity, dilatation, if it occurs, usually appears at the inner angle

of the eye or upwards and outwards at the base of the nose. Dr. Carl Theodor of Bayern, Germany, reported a case in which the bulging appeared at the inner angle of the eye and was of a hard ivory-like consistence, and it was not until after operation that empyema of the cavity was recognised. Meningitis is not an infrequent sequela of closed empyema of this cavity.

Very little is known regarding the symptoms of distention of the walls of the sphenoidal cavity, but pressure on the optic nerves, which lie on either side of the cavity, may be followed by atrophy and consequent limitation of the field of vision. It is also possible for perforation to take place through the vault of the pharynx in such cases.

One could enumerate many other evil effects caused by empyema of the nasal cavities but those mentioned will suffice to impress upon the practitioner the importance of an early diagnosis.

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## Clinical Lecture.

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### TUBERCULOUS DISEASE OF THE SPINE, COMMONLY CALLED CARIES OF THE SPINE, ANGULAR CURVATURE, OR POTT'S DISEASE.

BY

G. E. ARMSTRONG, M.D.,

Associate Professor of Clinical Surgery, McGill University; Surgeon to the Montreal General Hospital and Attending Surgeon to the Western Hospital; Consulting Surgeon to the Protestant Hospital for the Insane, Verdun.

GENTLEMEN :—The disease which I have to discuss to-day is called "Pott's Disease" because it was first accurately described by Percival Pott of St. Bartholemew's Hospital, in 1779.

My first illustration is an adult, whom I have selected because she is not nervous and will lie quietly without making any disturbance. In her, you see a fairly good example of Pott's disease of the lower dorsal region, involving the last dorsal and the first two lumbar vertebræ. These three vertebræ stand out quite prominently, particularly the middle one. This is a good example of angular curvature.

The *age* at which Pott's disease is found is, usually, up to the tenth year,—you may find it from the third to the tenth;—a few cases have been seen earlier than that. Mr. Howard Marsh has reported a case at the tenth month, and other cases at a year and under. On the other hand, you find illustrations of Pott's disease at the opposite extreme of life, and cases are reported at sixty, sixty-one, and sixty-four years. It is well to bear in mind the occurrence of the disease at the extremes in age, in order that the symptoms may not be allowed to pass unrecognised when appearing in infants or old people. The great majority of cases, however, occur from the third to the tenth year.

In the matter of *sex*, in this period of life the sexes are about equally represented. You know that boys and girls, up to about ten years of age, enjoy about the same amusements, romp and play, climb fences, and get tumbles, about equally; and there is not much difference in the frequency of the disease in the two sexes at that time of life.

With regard to the *etiology* of the disease. Pott's disease is always tubercular. There are, however, other pathological processes occurring in the vertebræ. Angular curvature may be due to traumatism alone, or there may be curvature due to osteitis, and softening from pathogenic organisms, not tubercular. These cases are generally rapidly cured.

Then again, it may be due to syphilis, either hereditary or acquired. This disease is more frequently observed in the upper cervical region, is rapid, occurs later in life than tuberculosis, and is more easily cured. And lastly, it may be due to malignant disease of the bones of the spine. These possible conditions should be remembered as checks to help in a correct diagnosis. When we speak, however, of Pott's disease or angular curvature, we always mean tuberculous disease of the spine.

In the majority of cases the disease is located in the dorsal region. Parker gives the following figures:—cervical, 9; dorsal, 82; dorso-lumbar, 21; lumbar or lumbo-sacral, 37; out of 149 cases.

The part of the vertebra first attacked is, as a rule, the anterior part of the body. In children, each vertebra has an epiphyseal plate on its upper and lower surface, and in many cases the disease begins as a juxta-epiphysitis. So far as I know, there are no cases reported as occurring in the articular processes, these are very firm and hard, but occasionally the spinous processes are involved. Then, the disease may begin near the posterior surface of the body, and the extrusion of bone may press backwards on the membranes of the cord. A statement is sometimes found in the text-books that the disease may begin in the inter-vertebral substance. Close observers, writing with considerable experience in the autopsy room and with large museums to inspect, say, that it must be considered very doubtful if the disease ever does begin in the inter-vertebral substance.

The *course of the disease* varies a good deal with the circumstances of the case and the resisting power of the patient. It may go on to form a tubercular osteitis with more or less breaking down of the bone and absorption of the inflammatory material as fast as it is produced; a variety known as *caries sicca* and ending without the formation of an abscess. The same thing occurs in the hip joint and knee joint. In this variety, too, there is sometimes more than the usual amount of pain.

In a considerable percentage of cases the formation of large or small *abscesses* occurs, their size and future course depending upon the amount of the disease, the resisting power of the patient, and the treatment adopted. The direction taken by an abscess arising from caries of the vertebræ is determined by the contiguous fasciæ. In the neck, for instance, the cervical fascia passes from the spinous processes, investing the trapezius, to the posterior border of the sterno-mastoid muscle where it splits and unites again in front. A cervical abscess may get in front of this fascia and pass into the mediastinum or form a post-pharyngeal abscess. In the dorsal region, an abscess may pass into the pleura, occasionally perforate the lungs, or pass between the posterior ends of the ribs and between the transverse processes, and, following up the posterior branches of the intercostal arteries, appear on the back. In the lower

dorsal region the abscess, instead of passing back between the ribs, occasionally goes down the spinal column, and passes beneath the ligamentum arcuatum internum into the psoas sheath. Occasionally, it passes down behind the anterior common ligament and pierces the diaphragm. In the lumbar region, the abscess may pass down right on the bone, and then down behind the vessels and beneath the iliac fascia and form an iliac abscess; or, it may pass into the pelvis and appear at the sciatic notch. The sheath of the psoas is attached to the vertebrae internally, and in front is continuous with the ligamentum arcuatum internum above and the iliac fascia below, and behind is continuous with the anterior lamella of the lumbar fascia. The lumbar fascia consists of three layers, the posterior arising from the spinous processes and the two anterior layers from the transverse processes. The quadratus lumborum lies between the anterior two layers. The middle layer gives origin to the internal oblique and transversalis muscles. The anterior layer is very thin and is frequently perforated by abscess. Again, behind the posterior border of the external oblique is a weak point called the triangle of Petit, bounded in front by the posterior border of the external oblique and below by the crest of the ilium. A lumbar abscess sometimes points in this situation.

Now, the *symptoms and diagnosis* of this condition are the next points to be considered. The result of spinal caries is deformity, and deformity is sometimes the first thing you are consulted for by the parents. It is well shown here in this case before you, but in every case it may not be so easily recognised at first. The deformity depends on the collapse of the bodies of the vertebrae which are diseased and soft and give way beneath the weight of the head and shoulders. When the deformity occurs high up there may be a displacement of the viscera, from the alteration in the shape of the cavities, due to the bending of the spinal column. If it is in the dorsal region, the chest may be encroached upon, the lungs depressed, and the abdominal viscera pushed down. Sometimes the head is thrown back, the back is raised, and the apex of the heart is found in the third space.

The next symptom we have to deal with is compression paraplegia. You might think at first that this compression paraplegia would be due to bone pressure on the cord. That, however, is not often the case; the paraplegia is as a rule due to granulation tissue and pachymeningitis. The disease extends back from the body of the vertebra into the vertebral canal, granulation tissue forming and being pushed back through, and pachymeningitis develops. Occasionally the disease may extend through the thickness of the bodies and the granulation tissue be pushed back when they begin to collapse from the superincumbent weight. On

the other hand, the tubercular disease may soften the bones and enlarge the vertebral canal and that is why we do not have paraplegia occurring more often; under these circumstances there is more space for the cord than normally exists.

We may also have an abscess or a spicule of bone or sequestrum pressing back against the cord; and occasionally the pressure may be due to hæmorrhage. In the latter two alternatives the onset of the paralysis would be sudden, as a rule, however, it is due to granulation tissue, and the onset is gradual. Compression paraplegia is generally complete and bilateral. In one case, which is pretty well cured now and which I will show you, there is still paresis. In a man discharged recently there was a complete paraplegia both motor and sensory; yet he is cured of the paraplegia and is pretty well and went off the other day in very good form. In compression paraplegia the muscles generally waste. The reflexes in the earliest stages are sometimes greatly increased, but when the paraplegia becomes complete, the reflexes, both superficial and deep, are abolished. The circulation is poor and often the limbs are cold and the skin is covered with a profuse sweat. In syphilitic disease and cancer of the spine, or in the case of a spicule of bone as the cause of compression, one side only may be involved.

These cases occur particularly in children and very infrequently do we have an opportunity of making a diagnosis at the very earliest stage. Too often, when the child is brought to us, the diagnosis is only too easily made. The earlier symptoms should be borne in mind and each case should be examined thoroughly. The first thing that the mother will say, as a rule, is that the child is easily tired, and perhaps is awkward. The child trips and stumbles about and is not active on its feet, is easily tired and irritable and sometimes may complain of pain. In cervical disease, we occasionally have neuralgic pain extending up the back of the head, pain which is referred to the region of the sternum, or pain simulating an intercostal neuralgia. In dorsal, there will occur colic and, perhaps, signs of gastric crisis, or the pain will run down the legs, involving the nerves of the lumbar or sacral plexus.

When these symptoms and the feeling of being easily tired are present, you should strip the child and examine it thoroughly and methodically, as in a case of hip disease. You should put a skirt upon the hips so that you can get the whole body and chest exposed for examination. In the first place make a thoroughly careful inspection. See if the spines of the vertebræ are all straight in line and if any one of the vertebræ stands out more prominently than it should, remembering the normal prominent spine. Put your hand on the spine. In bending, it yields regularly and evenly and equally, beneath the hand; then, when the

child straightens, the bones come gradually and proportionately into place. A good way is to ask the child to pick up something. (The only child I could use for this purpose to-day is so fretful I cannot bring it in.) If you drop a cent on the floor the child that has spinal disease will bend first the hip and then the knees, in reaching for it, and then get up again in the same way. This is characteristic of what Sayer used to call a muscular splint already applied to the diseased spine. This rigidity can also be demonstrated by taking the child across one's knees and letting the head fall one way and the legs the other. By approaching the knees and thereby increasing the deformity there may be, in severe cases, apparent difficulty in breathing, and pain, both being relieved by separating the knees and straightening the child's back.

Next, examine for irregularities and tender points: Often you will get a history of traumatism in these cases combined with the tubercular disease. Rickets should not give much trouble in diagnosis. Rickets does not cause angular curvature but more of an arch, which straightens out when you lift the child up, while the other is permanent. This simple test is generally enough to enable you to eliminate rickets.

The hysterical spine in young ladies is sometimes troublesome and you have to be a little guarded in your opinion. I think Paget's description of it is unsurpassed. In the first place, there may be, and very often are, several tender points instead of one. Secondly, the pain is exaggerated. Thirdly, if you only touch the skin the patient will complain more loudly than if you put your hand firmly upon it. This is a pretty good test. Then, again, if you distract the patient's attention you can press quite hard, unless she happens to remember what you are doing, without causing much pain. The absence of deformity will help you. The patient will bend her back and turn over, which she could not do if she had tubercular disease. With attention to these points you will generally be able to diagnose correctly.

What is the the *prognosis*, in the first place as to life, and in the second place as to deformity? Now, in making a prognosis bring all your wisdom into play. You cannot learn a rule of prognosis the way you learn a rule in arithmetic. You have to consider, first and foremost perhaps, the situation of the disease, its extent, the number of vertebrae involved, and the length of time the disease has been going on. Then, take into serious consideration the personnel of your patient. We have always two forces at work, the enemy, which is the disease due to a bacillus: and we have the patient,—we have the resisting recuperative power to meet that attacking germ. And in estimating that you have to consider the family history and the social condition. I suppose in very considerably over half the cases, 68 per cent., it is estimated at, there is a family history of tuberculosis. If it is a strong history it will make

you form a graver prognosis than if there was no tuberculous disease in the family. Then, if the patient is in a condition to procure fresh air, careful nursing, and braces and jackets when required, the prognosis will be very much better than if the patient, from poverty and the carelessness and indifference of parents, is not likely to get proper care. As a rule, with a fairly good family history and the means and disposition to get good treatment, the prognosis is very good for life; and, with careful treatment, I think it is very good as regards the deformity. Sometimes the deformity can be somewhat lessened only; but, if you are careful and circumstances are fairly well on your side, you can prevent the increase of the deformity to any great extent. (This patient required treatment for a good while.) How long it will take, you cannot say, but you are generally safe in assuming about three years; sometimes a little shorter and sometimes a good deal longer, depending on the complications and other circumstances.

The *cause of death* in these cases varies. It may be suppuration, abscess, infective abscess leading on to septicæmia and pyæmia; or lardaceous disease of the liver and kidneys. Very often it is general tuberculosis, tuberculosis of serous membranes, or tuberculous meningitis. The resisting powers being lowered, the patients frequently succumb to a pneumonia or other intercurrent disease.

With regard to the *treatment* of which there is a good deal of difference of opinion and a great many different methods. I will tell you what I think about the treatment of these cases. In the first place, of course, I will assume that you put these patients under the best hygienic surroundings possible, and that you give them the most nutritious and suitable diet. If you can, give them mountain or sea air, etc. I am very strongly in favour of the recumbent position in the early stage of both spinal disease and hip disease, and every year, although I have sometimes tried to get on the other side, I find myself more and more confirmed in this idea. The success attainable by treatment with apparatus will depend a great deal on where the disease is situated. Often, it is situated low down, and here, perhaps, you can do more in the way of holding the patient up with apparatus; but I say, with all due deference to other people's opinion, that I am not yet convinced that it is possible to apply an apparatus which will carry the upper part of the body and relieve it from pressing on the diseased area. And that is where the mistake is made, that is, that even the best apparatus only brings the weight back on to the lateral masses. I will bring a child in here to whom a plaster jacket was applied two or three days ago. Many of you here saw it put on. Now, you can put your hand inside that jacket, and it is evident that it does not carry the patient's weight, it only keeps it from coming forward. One cannot carry patients in this manner. One cannot

put crutches under their arms that will carry them without excoriation and pain. In the cervical region one cannot put on a harness that will hold the head up. Apparatus will prevent the vertebræ from collapsing and coming forward, and in that way throw the weight on the lateral masses which are very seldom affected by tubercular disease. That point is being brought out more and more every year. Noble Smith has written a book to expound that very principle and has figured what he calls his splint for pressing forward the back, holding back the shoulders, and throwing the weight on the lateral masses; and I think it is a very important point in the treatment.

I believe, in the early stages, in putting the patient in bed. By so doing perfect rest is obtained and the best means afforded of preventing the increase of the deformity and limiting the extent of the disease. If you can get a bright sunshiny room you can put a child in bed for nine months or a year, and it will get fatter and fatter every day. You can take the child out on the lawn in summer and under the trees, and give him all the change necessary. Rest in bed alone is not sufficient, as it permits turning about and twisting. A fixation apparatus is required in addition; a Thomas' splint, or one of these frames of gas-tubing filled in with canvas, answers very well. Extension may be applied, if required, to either the head or the legs or to both. The child is placed on the frame with a band over the chest and one over the pelvis. It can then be moved from one room to another or carried out to the lawn without disturbing the position. Or, the child may be put in a plaster jacket, head, shoulders, body, and both limbs. Keep them quiet by one or other of these means for eight or nine months, or until the disease has ceased to be progressive and the pain is gone. Then, when the diseased spine seems to be more fixed, less pliable, and less movable, begin to take more liberty, and finally adopt the ambulatory treatment. This consists in the application of plaster in the manner you saw the other day; the man has now left the hospital. A very nice easy way of applying plaster to children is by stretching them out on a hammock in the horizontal position as was done in this case. (Child shown.) A better way still is to take a plaster cast like this one, remove it and send it to the instrument maker. He will make a mould from the cast and over that mould will fit one of these jackets. (Shown). This one is made of paper and, I understand, is patented. It is very light, and Mr. Chapman tells me, only weighs 14 ounces. Or, it may be made of leather and then will weigh a little more. The great objection to these is their expense, the leather ones costing \$35.00, a sum of small moment to some people but beyond the reach of the majority of our patients.

Dr. Hadra, of Chicago, has recently advocated immobilization of the vertebræ by wiring the spinous processes together. He cuts down and

exposes the processes and wires from two or three above to two or three below the point of disease. He described his method in a paper read before the American Orthopedic Association and published in their last annual volume, but, in the discussion which followed, serious objections were raised against it. In the first place, a considerable wound is made, and in the second place, the wire would probably cause erosion and possibly necrosis.

The latest method of treatment is that, introduced by Calot, of immediate forcible straightening. You are all familiar with it I suppose. Dr. Wilson has been carrying it out here in a considerable number of cases, generally under ether. Parker, and Goldthwaite of Boston, have done it without ether. The straightening should be preceded by a pretty thorough purgation to facilitate the manipulation by the hand placed on the abdomen. With one hand placed over the spine behind and the other in front the curvature is straightened by pressure. After straightening the part, one at once immobilizes with plaster of Paris. This may be done in many cases without ether, and of course, very easily under ether. The method is very new and also very old. Hippocrates, writing 500 years before Christ, describes the same treatment carried out in a rough manner by letting the patient drop, from a ladder. He wrote that he did not think much of it himself and never practised it. Enough cases have been done in France, England, the United States, and here in our own clinic, to satisfy every one, I think, that it can be done with impunity. No harm comes from it; these children do not get meningitis, they do not get abscess, they do not get general tuberculosis, they do not get hæmorrhage, or fever, or paralysis. Paralysis, if present, is relieved by the operation, and the parents are delighted with it. It is, at first, thoroughly satisfactory, of course in selected cases. I do not think it would be advisable to attempt Calot's method in these cases, because the curvature is considerable, several vertebræ are involved, and the gap left would be too great and probably never fill in. The whole question is how to fill up the gap. Tubercular disease of bone is very slowly repaired, but a little more rapidly in the vertebræ than in other joints. Here, I can get rid of the lump and deformity by rapidly straightening it out and it will be just the same to-morrow as to-day, but I should create a gap and how to fill this in and secure bony ankylosis is the whole problem. I think years must elapse before we can pronounce finally on this very radical method and learn what cases are suitable for it. Let us hope, for the sake of the patients and ourselves that the results will justify the advocacy of the treatment. In case, however, you should be too enthusiastic about it, I will simply refer to two autopsies reported by Mr. Murray, of Liverpool. The first was a boy four years of age who was brought to him with disease in the lower dorsal region of three

years standing. There was no abscess and no paralysis. He straightened the disease under ether. In ten days the child went home seemingly in first rate condition. Two months later he died from pneumonia, and at the autopsy there was no evidence of repair,—in fact there seemed to be a sort of false joint formed at the point of the disease. The pneumonia was not thought to be due in any way to the straightening of the diseased spine. The second case was a girl three and a-half years of age, who had had the disease for two years in the upper dorsal region. Mr. Murray straightened it and the child went home in ten days in good condition. It died three months later of meningitis and general tuberculosis. The family history was not good, and Mr. Murray does not think that the operation contributed to the general tuberculosis or meningitis. But, at the autopsy, there was no evidence of repair and the spine was freely movable, not firm nor fixed. That, perhaps, was not a good example and not a good patient, but I think, in putting the subject before you, that it is only right to present both good and bad results and to show that it is not yet proven that the gap is filled in. Calot's treatment, however, may be found to be followed by satisfactory results when applied early, before there is much deformity, but time alone will demonstrate how far this procedure will contribute to a more successful issue in this form of tubercular disease. I have dwelt so fully on previous occasions, upon the treatment of abscess in Pott's disease, that I need not discuss that question again to-day.

## Case Reports.

### TUBERCULAR MENINGITIS.—LUMBAR PUNCTURE.

#### TUBERCLE BACILLI IN THE FLUID REMOVED.—PUNCTURE FLUID INOCULATED INTO GUINEA-PIG PRODUCING GENERAL MILIARY TUBERCULOSIS.

BY

H. A. LAFLEUR, B.A., M.D.

Assistant Professor of Medicine and Associate Professor of Clinical Medicine, McGill University ; Physician to the Montreal General Hospital.

E. B., female, 10 years of age, entered the Montreal General Hospital on May 28th, 1898. She had been out of sorts for three weeks, and though by nature a bright vivacious child had since that date become listless and lost her usual appetite. There had been at first some numbness of the fingers and lips, and in a day or two vomiting and headache. About the fifth day of her indisposition she had a series of general convulsions, recurring during two days and two nights. The bowels were obstinately constipated and moved only by purgatives. Her parents said that after the convulsions she had been delirious for a week, and had then become quite drowsy, had cried out occasionally during her sleep and had become very thin. There was no history of tuberculosis in the family.

Note made on admission:—

Very much emaciated; lies upon her side with the legs drawn up; there is marked retraction of the head, the abdomen is scaphoid, and the *tache cérébrales* is easily produced. The lids are half closed, the right pupil is dilated, but there is no strabismus. The child is stuporose, takes no notice of its surroundings and cries peevishly when roused to take nourishment. She mutters a good deal but there is no cry. There is retention of urine. Pulse, 108; Respirations, 28; Temperature, 100° F. The lymphatic glands are not enlarged. There is no evidence of tuberculous disease of the bones or joints.

*Respiratory system*:—The lungs are clear on percussion and auscultation.

*Circulatory system*:—The cardiac dulness is within the natural limits and there are no murmurs. The pulse is rapid and small and shows considerable irregularity in rhythm.

*Digestive system*:—The tongue is moist and coated. Beyond the re-

tracted condition of the abdomen, there is nothing specially noteworthy in the abdomen. The spleen and the mesenteric glands are not palpable.

May, 30th :—The temperature ranges from 98.4° F. to 101° F., the pulse is 140, the respirations 32. Both pupils are widely dilated. No gross changes in the fundi. Lumbar puncture was performed about 1 p. m. and 20 cc. of an almost perfectly clear straw-yellow fluid were obtained. The whole of the fluid removed by puncture was injected subcutaneously into a guinea-pig. The child appeared to be quieter after the puncture. At 5 p. m., she became suddenly cyanosed and remained so for an hour.

May 31st :—A second puncture was made this afternoon between the third and fourth lumbar vertebræ, and 10 cc. of a similar fluid were obtained. This was centrifugated and the sediment was examined microscopically. There were no pus cells found, but a few blood corpuscles and a number of cells resembling lymphocytes, i. e., with large, round, deeply-staining nuclei and very little protoplasm. Cover-slip preparations were made, stained with carbol-fuchsin and decolorized with Gabber's blue. In three slides five typical tubercle bacilli were found. One hour after the puncture the child became cyanosed, but this passed off as before.

June 1st :—The patient is quite unconscious. Death occurred at 5.15 p. m. An autopsy could not be obtained.

The guinea-pig, into which the cerebrospinal fluid from the first puncture had been injected on May 30th, began to get thin and to show signs of weakness two weeks after the inoculation. It was killed on June 30th, and the post mortem showed an acute miliary tuberculosis. Tubercle bacilli were found in all the organs.

# RETROSPECT OF CURRENT LITERATURE.

## Medicine.

UNDER THE CHARGE OF JAMES STEWART.

### Treatment of Cardiac Dropsy.

BORGHERINI "Die Mechanische Behandlung der Oedeme be Herzkrankheiten."—*Deut. Arch. Klin. Med.*, Bd. 61, 624.

The treatment of high degrees of dropsy in cardiac disease not yielding to ordinary measures is beset with considerable difficulties. Various mechanical appliances have been employed and are certainly efficacious in removing fluid from the legs. The best known is perhaps Southey's tubes, but simple puncture is also efficacious. The great drawback to such plans of treatment is the danger of septic infection leading to diffuse cellulitis, and suppuration of the subcutaneous tissues. Experience shows that such accidents are but too apt to follow the introduction of metallic tubes and their retention in cedematous tissues, even when strict antiseptic precautions are adopted.

Borgherini has modified an old method of dealing with the cases in question which promises to be of considerable value. After carefully cleansing the legs as if for a surgical operation, four incisions are made in each limb, one at each side of the malleoli and two in the calf. Each incision is two or three centimetres long and reaches the subcutaneous tissues. The wounds are covered with aseptic gauze and a thick layer of absorbent cotton, and over this a sheet of rubber and bandage. The rubber is applied so that a small part of the heel is uncovered. The patient sits on the edge of the bed or on a chair with the feet down, and the fluid drains away into a basin under the uncovered part of the heel. The dressings on the limb are changed every twenty-four hours. The duration of the treatment varied from twelve to eighteen days, and after the fluid had drained off the wounds healed readily. A remarkably large quantity of fluid sometimes escapes and the method is applicable for renal as well as cardiac dropsy.

By this method an excellent result was obtained in a case of heart dis-

case with anasarca of the legs and abdomen and gangrenous erysipelas of the legs, the result of a cantharides plaster. There was also fever, diminished urine, and congestion of the liver and lungs. As the usual remedies, including purgatives, proved of no avail, and as the erysipelas was spreading, incisions were made as described above. In three days the erysipelas was arrested, œdema and ascities diminished, the urine increased, the pulse improved, and the dyspnœa diminished. Unfortunately suppuration set in about a finger nail, the cardiac conditions became aggravated, and death ultimately occurred. In three other cases improvement resulted from a similar method of treatment. Untoward effects seldom occur and are not of much moment. This plan of treatment is naturally not one to be used indiscriminately and it is unnecessary unless the usual methods have failed.

Borgherini regards the œdema of heart disease, not only as a mechanical obstacle obstructing the peripheral circulation, but also as acting as a reservoir for toxic substances which collect in the system owing to the lessened activity of the kidneys and which exert a deleterious action on the heart. Although no evidence in favour of this view is adduced, we are reminded of Eichhorst's observations in which somnolence and delirium with other nervous manifestations appeared during the rapid disappearance of dropsy, and which he believes result from an auto-intoxication occurring during the passage of the dropsical fluid through the blood.

This method of treatment may thus be regarded as a distinct therapeutic measure for removing toxic substances from the system as well as for alleviating the distress and mechanical obstruction resulting from the collection of large quantities of fluid in the tissues and serous sacs.

#### **Thyroid Extract in Obesity.**

EBSTEIN. "Bemerkungen über die Behandlung der Fettleibigkeit mit Schilddrüsenpräparaten."—*Deut. Med. Woch.*, 1899, 1, 2.

In this article Ebstein discusses the use of thyroid extract in the treatment of obesity. A reference to the more important contributions to the subject indicates a considerable diversity of opinion as to the effects of the remedy. Yorke-Davies found the body weight in obesity decreased much more rapidly when thyroid was used with a restricted diet, than when a dietetic plan was exclusively followed. This opinion is in the main confirmed by Lichenstein and by Wrudelstadt. Both these observers found a remarkable decrease in weight especially in anæmic obesity with the use of thyroid alone. In a few instances toxic symptoms were observed consisting in pains in the back and extremities, loss of appetite, palpitation and tremor.

Ebstein details his personal observations in seven cases. In two, the remedy had no effect in decreasing the weight, and two cases were un-

suitable. In the remaining three, when thyroid was prescribed, a decided decrease took place amounting to six pounds in a week in one case, with a decrease of one and a-half pounds in the following week and an increase of half a pound in the third. Further dosage produced no definite results although subsequent dietetic treatment proved more effectual. In the other two cases the loss of weight with thyroid was less marked.

Admitting that a loss of weight results in certain cases of obesity from the use of thyroid, it by no means follows that this remedy is a suitable one in such cases. It must be shown that the loss of weight results from the loss of fat and not of albuminous substances. According to observations of Magnus Levy an increased destruction of albuminous substances goes on with the use of thyroid extract so that this condition is not fulfilled.

Ebstein believes that the only rational treatment of obesity is by diet and in a properly regulated mode of living. He points out that the loss of weight with thyroid is inconstant and ceases after a short time, as in the case quoted. There is, again, no improvement in the general condition of the patient, such as is observed when the weight is reduced by a suitable diet. In addition to the danger of unpleasant symptoms from overdoses of the gland remedy, this remedy is not required, as by our present methods of diet the condition can be controlled.

The readiness with which the public take to remedies is a danger which has already been observed in the use of thyroid, and much harm may result from the indiscriminate use of such a powerful remedy. There can be no doubt that when the patient exercises sufficient self-denial, a more satisfactory and permanent result comes from the use of a judiciously selected diet.

*F. G. Finley.*

# Obstetrics and Diseases of Infants.

UNDER THE CHARGE OF WILLIAM GARDNER.

## Induced Abortion.

PINARD, ADOPHE. "De l'Avortement Médicalement Provoqué, ou Avortement Thérapeutique."—*Annales de Gyn. et d'Obstetr.* January, 1899.

Professor Pinard of Paris in a communication made to the Congress of Gynæcology, Obstetrics, and Pediatrics, at Marseilles, issued the following dictum:—"The indication for induced abortion does not exist any more than the indication for embryotomy on the living fœtus at term, in cases of pelvic deformity, no matter what the degree, form, or nature of the deformity." He considers that symphysiotomy or Cæsarean operation is the only therapeutic means to which recourse may be had in the case of a woman whose deformed pelvis does not permit of the passage of a fœtus at term.

Pinard considers that pelvic deformity *per se* does not in any way endanger the life of the mother during the period of gestation. He also draws attention that, as a rule, the children in cases of pelvic deformity reach a greater development by term than is met with in ordinary cases; he quotes Olshousen as having reported several cases noting the same fact.

Pinard refers to the statistics of the Cæsarean operation as reported by Olshousen and Zweifel at Moscow, as follows:—Olshousen reported 27 operations with a mortality of but two mothers none of the children having perished. Zweifel reported 55 operations with but one maternal death. Leopold's results in a series of 100 cases are quoted as follows:—Seventy-one conservative Cæsarean operations with 64 recoveries and 7 deaths. Twenty-nine Porro operations with 26 recoveries and 3 deaths. Breisky's report of 11 successful Porro operations is also quoted. In view of these results, Pinard considers his conclusion as stated above to be justified. He quotes three cases to show that even considerable apparent narrowing of the abdominal cavity existing in cases of marked vertebral deformity does not call for the induction of abortion, all the three having been successfully delivered at term by means of the Cæsarean operation. In extreme cases of this kind he admits that abortion may be indicated and he quotes a case in point; that of dwarf (rachitic), aged 24 years whose height was only three feet seven inches (1.1 meters), who refused the Cæsarean operation.

Pinard considers that abortion may be induced in the following con-

ditions only:—Toxæmia resulting from renal or hepatic insufficiency, uncontrollable vomiting, exceptionably, retroversion with impaction of the gravid uterus, and goitre. To these he adds certain conditions associated with severe hæmorrhage. In these cases the operation is only indicated when it is certain that the life of the mother is in danger for then the physician endeavours to rescue the only life for which safety is possible. Pinard states that in these cases the accoucheur “does *not* sacrifice the fœtus but he saves the mother.” The fœtus is already condemned by the probable death of the mother, and the operation *saves* the mother as without intervention both are condemned.

In reference to the diseases which may develop in the mother in the course of gestation, he propounds the following question:—“Will any complicating disease terminate more satisfactorily if pregnancy be interrupted?” His answer is as follows:—“As a result of my reading and of my observation I do not hesitate to reply; *No.*”

Pinard concludes as follows:—

“(1) The interruption of pregnancy before the viability of the fœtus, (*l'avortement provoqué médicalement*) constitutes in carefully selected cases a procedure as powerful as it is valuable: (2) The indication for the therapeutic procedure is not present in either cases of narrowness of the pelvi-genital canal, nor in disease of any kind concurrent with pregnancy: (3) The true indication only exists when it is certain that gestation itself is the sole cause of the symptoms which endanger the life of the mother: (4) In inducing abortion under these circumstances the physician does not *sacrifice* the fœtus,—*fatalement condonné*,—but he frequently saves the mother.

#### **Walscher's position.**

PINZANI. “Walscher's Position.”—*Monatsschrift für Geburt, und Gyn.* Bd. IX. Hft. I, 1899.

At the October meeting of the Italian Obstetrical and Gynæcological Society in Turin, Pinzani communicated the results of a study of the effects of Walscher's position in increasing the conjugate diameter of the pelvis. He examined 61 living women and three dead bodies and concludes that Walscher's position gives a distinct advantage over all others in flat and generally contracted pelvises where the fault lies at the pelvic brim. The employment of this position will render recourse to forceps and turning less frequent, and in the higher grades of pelvic contraction its use will reduce the number of symphysiotomies. In difficult high forceps operations, breech extractions, and symphysiotomies, its employment will markedly facilitate delivery. The perineum is also less apt to be lacerated as the line of traction, as regards the pelvic brim, is more forward, so that pressure on this part by the handles or traction rods in forceps operations is avoided.

### Interlocked Twins.

LEISSE-DUISBURG. "Collision von Zwillingen."—*Monatsschrift für Geburt. und Gyn.*, Bd., IX., Hft. I, 1899.

Leisse-Duisburg reports a case of twin pregnancy where in labour the head of the second child descended in advance of that of the first, which presented by the breech and whose body was easily extracted. After considerable effort he succeeded in pushing back the second head and completing the extraction of the first child.

A lively discussion followed the reading of the paper in which several prominent men took part. Alfeld said that as a rule the head of the second child must first be extracted either by forceps or perforation, before the first child can be delivered. Schröder stated that to attempt to shove back the head of the second child and draw on the body of the first was useless; the second head must first be delivered and then the other will follow. Spiegelberg stated that on one occasion he had been able to push back the second head and deliver the first child, but that as a rule he agreed that it was better to deliver the second head before attempting to draw down the first. He quoted Kleinwöchter in Eulenburg's *Cyclopaedia* in support of this view.

### Orthoform for Fissured Nipples.

MAYGRIER and BLONDEL. (*Bul. et. Mem. de la Soc. Obst. et Gyn. de Paris*, November 10, 1898.) *British Med. Jour. Epitome*, January 28, 1899.

These writers report in favour of the employment of orthoform for cracked nipples. Orthoform is a powerful local anaesthetic, its action lasting about twelve hours. It must be kept continuously applied to the wounded surface. It causes a slight burning sensation when first applied. Orthoform has the advantage of being antiseptic and it produces a marked effect in hastening the cicatrization of the fissures. The authors tried it in forty cases and all experienced a marked relief. They recommend the application to the fissures of a saturated solution of orthoform in 80 per cent. alcohol, after nursing. A dry compress may then be placed over the nipples. They found that cicatrization was generally complete in four or five days without any interference with suckling.

### Lactose as an Oxytocic.

KEIM. (*L'Obstetrique*, Jan. 15, 1899.) *B. M. J. Epitome*, Feb. 11, 1899.

The author has employed lactose in labours at or near term, and in one abortion at the second month with retained secundines. He found this compound always stimulated an inert uterus but was not efficacious until after complete dilatation of the cervix. The minimum dose is

from three-quarters of an ounce to an ounce. It is better to repeat small doses than to increase the dose when the effect is not rapid. It acted quicker the more advanced the labour. Ten minutes was the shortest interval but it may take two hours to act. Keim found it did not influence the expulsion of the after-birth, uterine retraction, or the secretion of milk. He extols lactose as free from any poisonous properties, guiltless of compromising the puerperium, and harmless to the foetus.

### Marriage and Heart Disease.

VINAY. *Lyon Medical*, Jan. 8, 1899.

TESS. *Munch. Med. Woch.*, October 4 and 11.

Jess bases his remarks on the observation of 29 cases. A diseased heart in which the compensating hypertrophy has been carried to the farthest point is not in a position to overcome the increased resistance to the circulation present in pregnancy and hence dilatation occurs. The dangers during parturition are due to (1) the pains, (2) mental excitement, (3) the emptying of the uterus with the consequent fall in blood pressure. This fall of blood pressure may lead to cedema of the lungs and death. Of the 29 cases 20 were examples of mitral disease (mostly stenosis), three of aortic disease, and three of combined aortic and mitral disease. There was only one fatal case in the 29 and the total number of births was 114. Jess concludes that in slight and well-compensated heart disease, child-birth is usually well borne. After repeated pregnancies symptoms may arise. In severe, uncompensated, valvular lesions, and especially mitral stenosis, child bearing is harmful. He does not agree that marriage must be unconditionally forbidden in heart disease.

Vinay agrees that marriage is not to be forbidden when the lesion is well compensated and no complication has arisen. On the other hand marriage must be forbidden if evident signs of insufficiency have been detected, such as pulmonary congestion, hæmoptysis, and irregular pulse. Most serious in this respect is persistent albuminuria with hypertrophied heart.

Should complications arise during pregnancy the physician should insist upon repose, milk diet, aperients, and free and frequent dry cupping of the thorax. The first evidences of failure of compensation in these cases are dyspnœa, palpitation, a tendency to bronchitis, and a pulse which, though it may be regular in rhythm and volume, is clearly too rapid. These Vinay terms gravido-cardiac complications.

D. J. Evans.

# Canadian Medical Literature.

UNDER THE CHARGE OF KENNETH CAMERON.

[The editors will be glad to receive any reprints, monographs, etc., by Canadian writers, on medical or allied subjects (including Canadian work published in other countries) for notice in this department of the JOURNAL. Such reprints should preferably be addressed to Dr. Kenneth Cameron 903 Dorchester street, Montreal.]

## The Canadian Practitioner.

February, 1899.

1. The Modern Treatment of Tetanus, J. J. Cassidy.
2. Should the Deformity in Pott's Disease be Forcibly Corrected ?  
H. P. H. Galloway.
3. Reflexes in Psychiatry, D. Clark.
4. Pulmonary Tuberculosis, John Hunter.
5. Does our Knowledge of the Pathological Changes in Operation in Spinal Curvature Illuminate the Path of its Rational Treatment ?  
Thomas H. Manley.
6. A False Note from the Baltimore Oriole ! A. S. Ashmead.
7. The Radical Cure of Encephalocele, Fred. Winnett.
8. The Outbreak of Small-Pox in Kent County, Ont., W. F. Bryans.

1. CASSIDY points out that ever since the discovery of the microbe of tetanus by Nicholæir in 1884, experimental work has been done in the laboratories to ascertain the mode of attack which it pursues in the animal economy ; and it appears that this microbe does not spread in the body, but elaborates, in the injured parts, toxins, which it diffuses through the general circulation. This explanation being accepted, we see the necessity of the primary cleansing of the soiled wound, and the still greater necessity of keeping it dry, in order to prevent the decomposition of the wound secretions, which render possible the extensive formation and subsequent absorption of toxines. This may be the reason why amputation of the wounded part proves curative of tetanus by removing the seat of toxine formation ; and it may also account for the curative results obtained by hypodermic injections of phenol at the seat of the injury.

In reference to the treatment of this disease he quotes, Dr. Ascolj. who at a late meeting of the Royal Academy of Medicine at Rome, made the astonishing comparison between the relative values of the serum of Behring and Tizzoni, and the cure by phenic acid, as devised by Baccelli some years ago. The cases so far reported give the following results :

Treatment by Tizzoni's serum, died, 8 in 40.

Treatment by No. 1 Behring serum, died, 4 in 40.

Treatment by No. 2 Behring serum, died 2 in 9.

Treatment by phenic acid, died, 1 in 32 ; leaving a considerable balance in favor of the Carbolic treatment.

There is a great tolerance for the drug in tetanus ; the use of large doses is indicated. For subcutaneous injection a 3 per cent. solution is used ; the dose varies from one half to ten grains. The maximum dose for the twenty-four hours seems to be forty-five grains. Local baths may also be used with advantage.

2. GALLOWAY says that no subject in surgery has excited more widespread interest during the past two years than the forcible reduction of the deformity in Pott's Disease. There has been accumulated sufficient experience with the operation to enable each surgeon to decide whether the procedure is or is not at present justifiable. The theoretical dangers have not received much support in practice ; but enough, however, to demand that they be taken into account. We would be justified in performing the operation if we could be sure of ultimate good recovery without deformity or with greatly diminished deformity, but satisfactory evidence that the result will be good is wanting, and the post-mortem findings quoted, are anything but reassuring. Our knowledge of the behavior of tuberculous bones does not make us hopeful regarding the filling in of the gap created by the operation, and the admitted tendency of the deformity to relapse after correction increases doubt on this point.

Surgeons should cease performing the operation, and wait patiently until the ultimate results, in a considerable number of the cases already treated, have been determined, not condemning the operation in the meantime, but simply holding it *sub judice*. As an exception to this conclusion, however, cases complicated with paralysis which cannot be cured by other means, should, in the absence of contra-indications, be submitted to forcible reduction, as there is abundant evidence to show that the operation usually cures or improves the paralysis promptly. Very early cases with slight deformity may, perhaps, also be attempted.

Calot reports better results, and appears to be more hopeful, than any one else, but the tendency to simplification of the original operation shows a distrust for Calot's method, or points to it being unnecessarily radical. The method described by Goldthwait is simpler and more reasonable.

3. D. CLARK protests against the statements that a large number of our insane women have become so afflicted because of ovarian or uterine disease. His experience shows that not more than 3 1-2 per cent. of female patients are afflicted in this way, in any serious form of derangement, yet, as least, 40 per cent. are certified as having become insane

through this cause. It need scarcely be said that this is a most extraordinary statement. Another fact is that when insanity sets in, many subacute diseases of the uterus disappear, such as dysmenorrhœa, the various forms of metritis, subacute ovaritis and catarrhal conditions. Insanity seems to be antagonistic to their active existence. These alternatives are also true in respect to other diseases, especially those of the lungs of the insane. He points out the inconsistency of removing ovaries which are only functionally affected. Extirpation means a premature menopause, yet the time of the natural menopause is always understood to be a critical period in a woman's life. To artificially produce a condition which is naturally said to be conducive to insanity is certainly a strange procedure to bring about relief, or to act as a prophylactic, if the usually accepted opinions are correct. The fact is, the change of life as well as puerperal crises have no special danger in the production of mental disorders unless there exists a predisposition thereto, either through hereditary tendency or because of general asthenia, and in which condition the uterus is only one factor, and consequently not the *cause* but an *occasion* of the outbreak. He therefore, objects strongly to the wholesale conclusion that at least 50 or 60 per cent. of the female insane need gynecological treatment. Several eminent gynecologists and alienists are quoted, as raising a warning voice against such extravagant statements and such wholesale manipulations.

7. WINNETT reports the following interesting case: The child, aged two months, was noticed at birth to have a tumour in the lower part of the occipital region. It had increased to twice its original size, but did not seem to affect the child injuriously. Circumference of the skull measures fifteen inches. The tumour is somewhat pedunculated, measuring at the base 6 1-2 inches, and at its largest part 8 1-2 inches. It is not tense, fluctuates, is slightly translucent, and can be partly emptied. When the child cries it becomes tense and darker in colour. In the centre can be felt a small hard body, leading to its base. The opening in the skull seems small and indistinct. Operation was performed by making two lateral flaps and the skin was found closely adherent to the membranes. The neck of the sac was cleared, and found to be about three quarters of an inch in diameter. It was ligated with a Staffordshire knot and removed. The flaps were sutured and the wound dressed in the usual way. The recovery was uneventful. Examination showed the tumour to contain, along with considerable fluid, the entire cerebellum, including the vermiform process. It is atrophied and weighs 26 grains. The successful issue of this operation is peculiarly interesting, in view of the hopelessness of palliative or radical treatment, as judged by many authorities.

**The Canada Lancet.***February, '99.*

1. The Use of Hydraulic Pressure in Genito-Urinary Practice, with Special reference to Contracture of the Bladder. (Abstract of article, John Hopkins Hospital, Baltimore.) Hugh H. Young.

**Dominion Medical Monthly.***January, '99.*

1. The Surgical Treatment of the Insane in Private Practice. Ernest Hall.

2. Two Month's Work in General Gynæcological and Abdominal Surgery. A. Laphorn Smith.

*February, '99.*

3. Report of Surgical Cases with Special Points of Interest. Dr. Wilkinson.

1. ERNEST HALL reports, in detail, twenty-three cases of insane women whom he had examined, and twelve of whom he had operated upon. Of this number twenty-one, or 91 per cent. had lesions sufficient to call for treatment. He says that there has been sufficient evidence produced to show the frequency of the association of pelvic trouble and mental aberration; that in a certain proportion of the cases a return to mental health followed so directly (in two, so-called "hopeless cases", this change was complete within three weeks after the operation), that we are justified in concluding that the surgical measures were in some way responsible for the result. If the therapeutic value lay only in the surgical shock, it would be a prescription worthy of trial; that many cases are so improved that they can be managed at their homes and do not require to resume their asylum life.

3. WILKINSON relates the histories of eight very interesting surgical cases. (The paper would be much more comprehensible had it been revised by a proof-reader.)

**Canada Medical Record.***February, '99.*

1. Tuberculosis in Animals. James H. Frink.

2. Progress of Gynæcology. A. Laphorn Smith.

J. J. H. FRINK, Dominion Veterinary Inspector, at St. John, N.B., contributed a most interesting paper on "Tuberculosis in Animals", before the St. John Medical Society. He pointed out that of all the domestic animals, cattle are the most susceptible, proving a most acceptable habitation to the bacillus, while the sheep, as far as our knowledge

goes may be considered the least susceptible. He related the history of the bacillus and the various lesions produced thereby, and discussed the value of the tuberculin reaction as a test for its presence in the tissues. Hereditary transmission is generally discredited; hereditary predisposition generally accepted; and infection positively accepted. Several instances of infection are cited and he made the statement that if a herd of animals have been continuously kept in one stable for two years, or even less, and on inspection for tubercle, one is found affected, it is not alone—there are more. And the ones in particular are those tied up on either side of the tubercle. Taking his own records and the official records of others, all are free, or the majority are affected. Congenital tubercle in animals is very rare.

That infection to the human family by the consumption of milk and flesh of tuberculous animals, be possible or impossible, has given rise to endless controversy. The belief that it is injurious only to drink the milk of an animal which has tubercle of the mammary gland did not appeal to him as being altogether rational. He cited an instance of a number of swine affected by being fed on the milk and offal from a tuberculous herd, of which only one animal had tubercle of the mammary gland, and that animal was not giving milk. It is generally accepted that there is little danger from eating tuberculous flesh, provided it is well cooked and the bacilli thus destroyed, but the fact that the toxic product generated by the bacillus in its work may be capable of exciting latent disease in the consumer, has not had, generally speaking, the attention which it deserves. The following means should be adopted to lessen the risk of infection to man from animals, and possibly, to avert infection of animals from man. (1) That all animals which contribute to the public milk supply shall be tested with tuberculin. (2) That milk from tuberculous animals shall not be used for human food. (3) That if milk from tuberculous animals is consumed, it shall be sterilized, and if exposed for sale it shall be so labelled. (4) That the milk and the flesh of animals suffering from general tuberculosis shall be destroyed absolutely. (5) That cattle which have reacted to the tuberculin test, and on second test have given no elevation of temperature, they and their products, shall for the purpose of sale be considered tuberculous. (6) That men and women suffering from pulmonary tuberculosis shall not be permitted to attend cattle which contribute to the public milk supply. (7) That the refuse, swill, and garbage, from hospitals, jails, and other public institutions which contain large numbers of people, be consumed by fire, and not be allowed as food for animals. (8) That on the determination of the existence of tuberculosis in a herd, no milk shall be sold from it, until the herd is purged from the disease. (9) That as swine fed on the refuse of slaughter-houses are prone to tuberculosis, the public sale of their

carcasses shall be prohibited. (10) That every carcase of beef, together with the viscera, shall be inspected, and if free from disease, so labelled and marked. (11) Every municipality shall own and control its own abattoir, and all fresh meats sold in the city shall be slaughtered in it.

If these provisions were carried into effect, very little fear need be anticipated by the human family, of infection from animals. But the health of animals is being constantly menaced by tuberculous people. If consumptives are allowed to scatter *ad libitum* tuberculous discharges about public places, roads, stables, and markets, it will be a fruitless task to attempt eradication in the lower animals, however much progressive sanitary science, (as applied to animals) may confine it.

### Canada Medical Record.

December, '98.

1. Two cases of Tubal Pregnancy.—Operation.—Recovery. A. Laphorn Smith.
2. Clinical Lecture on Bell's Paralysis. F. W. Campbell.

### L'Union Medicale du Canada.

Janvier, 1899.

1. Universités Allemandes. Eugène St. Jacques.
2. Grippe et Puerpéralité. Elphège A. René de Cotret.

### La Revue Medicale.

Novembre 30, 1898.

La Santé Publique et l'Industrie Laitière. L. J. O. Sirois.

Décembre 7, 1898.

Un Cas d'Incontinence d'Urine Guéri par Colporaphie Antérieure et Postérieure. A. Laphorn Smith.

Décembre 14, 1898.

De l'Emploi des Sels de l'Acide Sozoiodolic dans le Traitement des Affections Nazales. M. E. de Laval-Thyernay.

Décembre 21, 1898.

De l'Ophthalmie Purulente des Nouveaux Nés, Complications Provoquées par les Traitements Intempêtif. L. Gauthier.

Décembre 28, 1898 ; Janvier 4, 11, 18, 25, 1899.

De l'Avortement incomplet, de la Conduite à Tenir. Traitement. (Rapport des trois dernières séances de la Société Médicale de Québec.)

*Février 8, 1899.*

De l'Hystérie et sa Traitement, par M. le Dr. Gilles de la Tourett. Leçon inédites recueillies par M. le Dr. Chas. DeBlois.

*Février 15, 1899.*

Etudes sur la Cause ou Condition Première de Toute Maladie. C. P. Paquin.

*Février 22, 1899.*

Progrès de la Gynécologie. A. Laphorn Smith.

## Reviews and Notices of Books.

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TWENTIETH CENTURY PRACTICE :—An International Encyclopedia of Modern Medical Science by Leading Authorities of Europe and America. Edited by Thomas L. Stedman, M. D., of New York, Volumes XIII, XIV, XV, XVII, Infectious Diseases. New York, William Wood & Company.

These volumes contain matter dealing with the subject of infectious disease only, while volume XVII concludes this group of diseases and includes malignant neoplasms. Volume XVI is not yet issued. That so much as one-fourth of this very complete work should be taken up in dealing with these diseases shows how much advancement has been made recently in the study of bacteriology, infection and immunity, and the application of serum treatment in diseased conditions.

Volume thirteen contains from P. Brouardel, M. D., of Paris, an article on Vaccinia. Jules Comby, M. D., of Paris, writes on Mumps. In addition to the classic text-book symptoms and signs of the disease, Dr. Comby gives interesting historic facts concerning mumps. He regards the demonstration of the bacteriology "incomplete as experimental proof is wanting". That portion of his article dealing with extrasalivary localizations and complications of mumps is divided into genital and non-genital localization. He points out that relapses may occur and in a case marked by recurrent relapses the spleen is described as involved.

Harold C. Ernst, M. D., of Harvard Medical School, writes to considerable length a most instructive article on Infection and Immunity. He sets out to make "a statement of the series of experiments leading to the present position on these points," and deals with his matter under two headings:—"first, the experiments leading to our present ideas upon infection, and the methods by which it may occur; second, the consideration of immunity, (a) natural, and (b) acquired". The results of the extensive experimental work done by an army of workers in this field are presented in such a way as to shed a clear light upon this subject of immunity, while they make "the therapeutic prospects for the future very bright." It is to be regretted that no bibliography is to be found at the end of this article.

The late Ernest Hart wrote in conjunction with Solomon C. Smith

on Water-borne Diseases. In the introduction to this subject, it is divided into two main groups, according as to whether the contaminating substance is living or non-living. Under the last named group, which is treated first, are, lead, zinc, arsenic, copper, and iron; clay and marl; excessive amounts of lime and magnesium salts; and various organic products arising from the decomposition of animal and vegetable substances. This group occupies but a few pages, while the second group comprises the bulk of the article and includes a consideration of the entozoa and bacteria which may be water-borne and thus favour the production and extension of diseases. Typhoid fever, cholera, dysentery, diarrhoea, and yellow fever are included and the preventive measures are discussed. John William Moore, of Dublin, treats of the subject of Smallpox in an article covering upwards of one hundred pages, including an extensive list of references.

Victor C. Vaughan's article is upon Ptomaines, Toxins and Leucomains. Mussel, meat, milk, fish, and cheese poisoning, and vegetable food poisoning, require for their scientific discussion an array of new terms quite puzzling to the ordinary reader. With the poisons of the specific infectious diseases most readers are familiar. With the discussion of leucomains their sources and relation to diseases, Dr. Vaughan concludes his writing stating therein, that the scientific study of the relationship of leucomains to disease is yet to be carried out, and expresses the belief that they may yet be as fully established in the causal relationship to disease as bacteria are to the infectious diseases.

The very practical contribution of J. Dawson Williams, on the Duration of the Periods of Incubation and Infectiousness in Acute Specific Diseases, is an important feature of this volume.

Volume fourteen deals with scarlet fever, measles, German measles, chicken pox, glandular fever, whooping cough, cholera infantum, cholera nostras, Asiatic cholera, dengue, beriberi miliary fever, and Malta fever. The contributors are Dillon Brown, of New York; David Bruce, of South Africa; Sir Joseph Fayrer, Bart., of London; Frederick Forchheimer, of Cincinnati; A. Jacobi, of New York; A. Netter, of Paris; Nathaniel Read Norton and Joseph O'Dwyer, of New York; Theodor Rumpf, of Hamburg; A. A. de Azevedo Sodré, of Rio de Janeiro; and Dawson Williams, of London. O'Dwyer and Norton, in their article on Whooping Cough, state that the weight of evidence is in favour of the specific character of Koplik's bacillus. Of two contributions by Dawson Williams, one describes the characteristic features of Glandular Fever, which has been recognised and described by but one American writer, J. Park West. The first detailed description was given by E. Pfeiffer in 1889. Jacobi's article dealing with Cholera Infantum is a valuable contribution. Theodor Rumpf, writing upon Cholera Nos-

tras and Asiatic Cholera, covers upwards of 170 pages in this volume, dealing exhaustively with the latter subject from the historical, etiological, pathological, and anatomical points of view. These two volumes are most valuable as books of reference on the subjects discussed.

*W. F. H.*

## TWENTIETH CENTURY PRACTICE OF MEDICINE. VOL. VII.

This volume opens with an excellent account of the diseases of the pleura by Dr. Herbert B. Whitney. The subject of Pleurisy is very fully discussed, and the debatable points, particularly in the treatment of purulent effusion, are clearly and ably dealt with.

Riegel contributes an interesting article on Asthma, embodying the old and well-worn facts with the more recent work on the subject. Several figures of Churchmann's spirals are given and their significance fully dealt with. In the treatment, chloral and morphia are highly spoken of for the severer paroxysms, a preference being indicated for the latter drug.

E. Fletcher Ingals devotes the greater part of his article on Hay-Fever to treatment. The local measures adopted are fully considered, much importance being attributed to cauterization of sensitive areas in the nasal membrane and to local application.

A concise but suggestive chapter by Main, of Paris, is devoted to Diseases of the Mediastinum, and of the Diaphragm.

The section on Blood Diseases has been intrusted to Dr. Stenger, of Philadelphia, and deals exhaustively with the anæmias, scurvy, hæmophilia, and purpura. These subjects are all treated in a judicial and interesting manner, and will well repay careful perusal.

Diseases of Menstruation are described by Cushing and Cumston. The general as well as local forces are fully discussed and much information is conveyed in a comparatively short space.

An interesting chapter on Sexual Disorders in the Male is contributed by Charles W. Allen. The onus of sterility is thrown chiefly on the male, the author attributing seventy per cent. of cases to this cause. The volume concludes with a full account of Clinical and Microscopical characters of Urine by James M. French, which will be found of much value for reference.

We can confidently recommend this volume as an authoritative and complete treatise on the subjects referred to. The printer's work is excellent and the clear type greatly facilitates the perusal of the book.

*F. G. F.*

**INTERNATIONAL CLINICS.**—A Quarterly of Clinical Lectures on Medicine, Neurology, Surgery, Gynæcology, Obstetrics, Ophthalmology, Laryngology, Pharyngology, Rhinology, Otology, and Dermatology, and Specially Prepared Articles on Treatment and Drugs. By Professors and Lecturers in the leading Medical Colleges of the United States, Germany, Austria, France, Great Britain and Canada. Edited by Judson Daland, M. D., Philadelphia; J. Mitchell Bruce, M. D., London; and David Finlay, M. D., Aberdeen, Scotland. Vol. IV., Eight Series, 1899. Philadelphia, J. B. Lippincott Company, Dominion Agent, Charles Roberts, Montreal.

In this fourth volume of the eighth series of International Clinics which is just to hand, among a large number of contributions many are found from Great Britain and the Continent. Sidney Martin, J. W. Ballantyne, James Finlayson, Alexis Thompson, W. Hale White, Thomas Pickering Pick, and others of the profession in Great Britain; Curschmann of Leipsic, Fournier, Grancher and Lop of Paris; Oppenheim and Rosenheim of Berlin; Urbantschitsch of Vienna; and Ziehen of Jena, contribute to make this issue of the Clinics one of the best of the series. Those also of the American Contributors are in the fore rank of the medical profession in their special departments.

An article of much interest entitled Glonoinism by George C. Laws is an important addition to the study of drug action.

The attractive features of the clinics hitherto apparent, are well borne out in this volume.

W. F. H.

**ANNUAL AND ANALYTICAL CYCLOPÆDIA OF PRACTICAL MEDICINE.**—By Charles E. de M. Sajous, M. D.; and One Hundred Associate Editors Assisted by Collaborators and Correspondents. Illustrated with Chromo-Lithographs and Maps. Volume II. Philadelphia, New York, Chicago. The F. A. Davis Company, 1899.

Volume II includes Bromide of Ethyl to Diphtheria. It seems to be the general concensus of opinion of those who have utilized the first volume of this work that the aim of the editors "not only to facilitate the labour of the practicing physician and to assist investigators and authors in their researches, but also to elucidate through contributions from men possessing special knowledge or unusual experience in a particular line, diseases which, owing to their complexity, are not generally understood", has been achieved to a remarkable degree.

The second volume is fully up to the high standard of the first. Among articles specially attractive may be mentioned:—Cerebral Hæm-

orrhage, by Dr. William Browning of Brooklyn; Cirrhosis of the Liver, by Professor Adami of Montreal; Cholelithiasis, by Professor Graham of Toronto; Diabetes, by Professor Lepine of Lyons; Diphtheria, by Drs. Northrup and Bovaird, of New York, who contribute a masterly review of our present knowledge of this affection from every standpoint.

Among other notable articles may be mentioned one on Cocainomania by Dr. Kerr of London, one on Burns, by J. A. Cantrell of Philadelphia, and a most excellent article on Cholera Infantum,\* by Dr. Blackader of Montreal.

'Sajous' Annual is well arranged and attractive. It is a great help to the busy practitioner who desires to keep abreast of the time.

G. E. A.

#### THE AMERICAN YEAR-BOOK OF MEDICINE AND SURGERY.

Being A Yearly Digest of Scientific Progress and Authoritative Opinion in all Branches of Medicine and Surgery, drawn from Journals, Monographs, and Text-Books, of the Leading American and Foreign Authors and Investigators. Under the general editorial charge of Geo. M. Gould, M. D. Illustrated. Philadelphia W. B. Saunders, 1899.

The year-book for the present year appears in the same form as before, the most important change being in the list of contributors. Dr. William Pepper's place has been taken by Dr. Stengel, who was associated with him last year, and Dr. Edsall, also of Philadelphia. A large part of the portion devoted to General Medicine is taken up with the infectious diseases, in which the main advances made during the year have taken place. Evidence continues to accumulate regarding the value of Widal's serum reaction in typhoid fever. Those cases where the reaction is present without the symptoms of fever are held to be likely due to typhoid 'infection' without the actual development of the fever. Under General Surgery, Keen and DaCosta note as the most striking advance in the year, the performance of total gastrectomy for malignant disease without necessarily interfering with the function of the digestive system in the support of life. The stomach is seen to be of far less importance than was expected. Considerable space is taken up by the various methods proposed for uniting the ends of divided intestine, and instructive cuts of the many modifications of the Murphy button. rubber bags, forceps, etc. are of great aid in understanding the technique of the operations described. Appendicitis is still the subject of considerable discussion, the indications for operation and its technique forming, as they did last year, the principal points upon which a difference of opinion exists. In Obstetrics, the pathology of the fetus and fetal ap-

pendages has been advanced considerably by work done on both sides of the Atlantic. The trend of Gynæcology can be summed up in one sentence. "The aim to-day is to see, not how much can be safely removed, but how many of the pelvic organs can be saved". This is a radical but much needed change.

All departments are thoroughly and exhaustively reviewed, and the book represents an immense amount of labour on the part of the compilers to present a fair unprejudiced synopsis of the year's work with an occasional explanatory, commendatory, or critical note. It is well indexed and will be found of the same value as heretofore as a book of reference for recent advances in medical science.

*G. G. C.*

**MEDICAL DISEASES OF INFANCY AND CHILDHOOD.**—By Dawson Williams, M. D., London. Fellow of the Royal College of Physicians of London, and of University College, London: Physician to the East London Hospital for Children, Shadwell. Lea Brothers and Company, Philadelphia and New-York.

Dr. William's object in writing this book is stated to be, "to give to young practitioners of medicine and to those who have not previously paid much attention to the subject, a guide to the clinical study of disease as it occurs in infancy and childhood." The great fault with the recent additions to our text-books on children's diseases has been that they are too comprehensive for any but the specialist in Pediatrics. What the average young practitioner or the student wants, is to have the disease, concerning which he is seeking knowledge, presented to him as nearly as possible in its typical form and in such a way that he will recognise at once the symptoms on which a diagnosis is to be based, and the main indications for treatment. Such can be said of this work, which presents a short concise picture of the various diseases and thoroughly practical directions for treatment. There is an excellent introductory chapter on growth, sleep, clothing, baths, etc. and one on clinical examination which also contains what one may be pardoned for calling "tips" in the management of both mother and child during the examination and which the average man only learns after long and perhaps painful experience. As a thoroughly reliable and handy manual the book is to be recommended and will likely meet with a large circulation.

*G. G. C.*

**TRANSACTIONS OF THE ASSOCIATION OF AMERICAN PHYSICIANS.**—Thirteenth Session held at Washington, D. C., May 3, 4 and 5, 1898. Volume XIII. Philadelphia. Printed for the Association. 1898.

The transactions for the past year of the Association of American

Physicians are contained in a volume of 482 pages containing 32 articles and embracing a wide range of subjects. The President, Dr. Frederick C. Shattuck of Boston, takes for his opening address. "Some Remarks on Hospital Abuse." Flexner's paper on Pseudo-Tuberculosis Hominis *Streptotricha* is very suggestive and possibly some of the atypical cases of phthisis may be explained by the fact that there are other organisms than the tubercle bacillus which may give rise to a pathological condition closely resembling, if not indistinguishable from, tuberculosis in its clinical aspects. Dr. I. Adler, of New York contributes some interesting Observations on Cardiac Syphilis endeavouring to show that the lesions found in the heart as the result of syphilis are much more common than was thought. Drs. Trudeau and Baldwin of Saranac in a Resume of Experimental Studies on the Preparation and Effects of Antitoxic Serum in Tuberculosis, have only failures to record. Fussel, Jopson, and Taylor of Philadelphia contribute a review of Acute Leukæmia from a study of fifty-six collected cases. The fact that only the more recently reported cases had been examined for a differentiation of the various forms of leucocytes detracts somewhat from the value of their paper. Dr. Thayer of Baltimore contributes a very valuable paper on Nephritis of Malarial Origin, and Dr. Theobald, of Boston, one on the relation between Bovine Tubercle Bacilli and Human Bacilli from Sputum.

Altogether the book is a most valuable one and in the high character of the papers representative of the leading American association of physicians.

#### PRACTICAL URANALYSIS AND URINARY DIAGNOSIS.—A

Manual for the Use of Physicians, Surgeons, and Students. By Charles W. Purdy, M. D., L. L. D., Queens University. Fellow of the Royal College of Physicians and Surgeons, Kingston : Professor of Clinical Medicine at the Chicago Post-Graduate Medical School. Author of "Bright's Disease and Allied Affections of the Kidneys," etc. Fourth Revised Edition. Philadelphia, New York, Chicago. The F. A. Davis Company, 1898.

The necessity of issuing a fourth Edition of this work within four years of its appearance is sufficient evidence of its popularity which, indeed, is well merited. But little change has been found necessary in the present edition. A few of the tests which had become obsolete have been omitted, and several new illustrations have been added. We note that the author is still of the opinion that the most delicate test for minute quantities of albumin is the one devised by himself, namely, the addition of a given amount of saturated salt solution, acidulation with acetic acid, and boiling. In the quantitative estimation of albumin, too,

he claims that the commonly used albuminometer of Esbach is incorrect and that his own method of centrifugalization of measured quantities of urine, potassium ferrocyanide solution, and acetic acid, is absolutely reliable. While possessing great advantages theoretically and also in point of time, the writer has found it difficult, using Purdy's own electrical centrifuge, to get uniform results, the difficulty appearing to lie in the fact that the precipitated albumin does not always pack closely in the bottom of the percentage tube; two specimens of the same urine having under similar circumstances given different readings. It is stated in the edition under discussion that a speed of 1500 revolutions a minute for five minutes are necessary in order to get exact results. In the matter of quantitative estimation of sugar, too, Purdy's own method, which is certainly an excellent one and less liable to error than Fehling's, is rendered all the more simple by the insertion of a table which does away with the necessity of making calculations and enables one to read the percentage of sugar direct from the amount of urine used in the reduction of the copper solution.

Many parts of the book have been rewritten and all brought up to date so that the work will continue, as heretofore, to be an authority on the subjects of which it treats.

G. G. C.

**GENERAL PHYSIOLOGY, AN OUTLINE OF THE SCIENCE OF LIFE.** By MAX VERWORN, M.D., Ph.D., Professor of Physiology in the Medical Faculty of the University of Jena. Translated from the Second German Edition and edited by FRED. S. LEE, Ph.D., Adjunct Professor of Physiology in Columbia University. Svo., pp. 586, with 285 illustrations. London: Macmillan & Co., Ltd. New York: The Macmillan Co. 1899. Price, \$4.00.

This work is another illustration of the abiding and far reaching influence of great men. How wide that circle of waves, started in the scientific world of Germany by Johannes Müller, has extended. But for this great mind there would probably have been no Verworn.

The fact that physiology has been taught and has developed almost exclusively in connection with human medicine has been most unfortunate for that science, so far as breadth at all events is concerned. It is nevertheless noteworthy that Max Verworn is a Professor in the Medical Faculty of a European University. This book belongs to a class that should be especially welcomed at the present day, when specialism and, of necessity, narrowness are more and more a natural development, yet attended by undoubted disadvantages, if not positive evils.

The work under consideration is essentially a physiology of the cell. As the author states in his preface to the first edition: "The elementary

constituent of all living substance and the substratum of all elementary vital phenomena is the cell. Hence, if the task of physiology lies in the explanation of vital phenomena, it is evident that generally physiology can be only cell physiology."

This principle is consistently applied throughout, though at times, it must be regretted, and by no one more than by the broad-minded author himself, that the material for such a work is so scanty.

The reader may, perhaps, best learn the nature and scope of the book by the headings and subdivisions of the chapters :

I. The aims and Methods of Physiological Research. (1.) The problem of physiology. (2.) The history of physiological research. (3.) The method of physiological research.

II. Living Substance. (1.) The composition of living substance. (2.) Living and lifeless substance.

III. Elementary Vital Phenomena. (1.) The phenomena of metabolism. (2.) The phenomena of form changes. (3.) The phenomena of transformation of energy.

IV. The General Conditions of Life. (1.) The present conditions of life on the earth's surface. (2.) The origin of life upon the earth. (3.) The history of death.

V. Stimuli and their actions. (1.) The nature of stimulation. (2.) The phenomena of cell stimulation.

VI. The Mechanism of Life. (1.) The vital process. (2.) The mechanics of cell-life. (3.) The constitutional relations of the cell community.

Then follows a satisfactory bibliography and an index. Professor Verworn explains his purpose and method thus : " If a book is to reach a wide circle of readers its language must be neither too technical nor too prosaic. I have endeavoured to comply with this requirement. I wished to write something that would appeal first to my fellow physiologists, and offer them besides certain new facts and ideas, a summary of our scattered knowledge. But at the same time I wished the work to give to any interested scientific reader, whether a student of medicine, philosophy, botany, or zoology, an outlook over problems, facts, theories, and hypotheses of life ; in other words, I wished to give him an introduction to general physiology and thus afford him an idea of the important theoretical basis of his study."

Most readers of this book will thankfully acknowledge that the Jena professor has succeeded in the much-needed work he has taken upon himself and which he tells us has been a labour of love.

The illustrations are numerous and good, the paper, printing, etc., all that one expects from the well-known publishers.

Prof. F. S. Lee, of Columbia University, New York, was well fitted,

for the work of translation. Naturally a painstaking, accurate, conscientious student and investigator, his contact in years past with such men as Martin, Brooks, and Ludwig, led to a broad and sound development, so that few could bring to the task he undertook so much sympathy and intelligence, and his work has been eminently well done.

All concerned are to be congratulated on the outcome of their joint labours, and the whole body of physiologists, biologists and physicians, on a new source of knowledge and inspiration.

W. M.

## Society Proceedings.

### MONTREAL MEDICO-CHIRURGICAL SOCIETY.

*Stated Meeting, February 20th, 1898.*

J. M. ELDER, M.D. SECOND VICE-PRESIDENT IN THE CHAIR.

Dr. Regina Landau, of Montreal, was elected an ordinary member.

**Congenital Tumour from the Base of the Skull.**



Dr. J. A. MACPHAIL shewed a fetus with a tumour protruding from the mouth and growing from the base of the skull. The foetus was deliv-

ered at the seventh month, by Dr Burnett, and was without other excess of defect of development. The pendant tumour was smooth, definitely encapsulated, globular in shape, very soft, and measured twelve inches in circumference, about the size of the head. Its attachments were upon the right of the middle line of the base of the skull, to the palatal process of the superior maxillary bone, to the pterygoid process and body of the sphenoid, to the vomer and the basilar surface of the occipital bone. The tumour was filled with blood and contained numerous small cysts. Photographs and slides were exhibited. Microscopically the following conditions were demonstrated:—1. Large round sarcoma cells. 2. Large blood spaces. 3. Large lymph spaces. 4. Myomatous degeneration. 5. Other degenerations of fibrous tissue.

Dr. NICHOLLS asked if the tumour presented any of the characteristics of a teratoma, as that was the commonest form of congenital tumour that springs from the soft palate.

Dr. MACPHAIL replied in the negative.

### **Concretion of Submaxillary Gland with Induration Simulating Carcinoma.**

#### **Subcoccygeal Teratoma.**

#### **Hydrocephalus.**

Dr. ARCHIBALD read for Dr. BELL the histories of these cases and exhibited the specimens. (To be published later.)

### **Appendicitis, with Unusual Conditions.**

Dr. J. ALEX. HUTCHISON read the report of the case. (See page 205 of the March number.)

Dr. GARROW asked if the separation had taken place close to the cæcum, and if there was any evidence in the omental mass that adhesions had formed near the site of separation.

Dr. ARCHIBALD questioned the advisability of drainage in the case. Formerly it was the custom when in doubt, to drain, but now he thought that the rule was not to drain.

Dr. HUTCHISON, in reply, said that the cæcum was quite free, and the separation had been quite close so that only a small puckered scar remained. He had discovered no bands of adhesion. In regard to drainage, as he had never met with a similar condition he thought, at the time, that it was well to drain, but if he had to repeat the operation he would not do so.

### **The Discretionary Powers of a Surgeon.**

Mr. A. G. BROOKE CLAXTON, B.C.L., of the Montreal Bar, read a paper on this subject. (See page 184 of the March number.)

Dr. T. G. RODDICK had listened to the paper with a very great deal

of pleasure. The innovation, introduced last year, of having a gentleman of the Legal Profession address the Society on questions of law affecting doctors, was to be highly commended, and he hoped that the plan would be encouraged. He congratulated Mr. Claxton on the able manner of conducting the case, and Dr. Springle for having determined to fight it out rather than leave it unsettled. He felt that he had been often on the border-land of law suits, but only once had been actually threatened. The case, was that of a child who had had his arm mangled in a street accident. He, in consultation with Dr. Fenwick and others, had decided that immediate amputation was necessary to save the child's life. As the parents could not be found to give their consent, the operation was performed. Later on, the parents threatened an action, but when it was pointed out to them clearly that the delay endangered the child's life, the action was dropped. He had learned a great deal from Mr. Claxton's paper, he had not been aware that the surgeon was given so much latitude in law. Such latitude, he held, would not tend to make surgeons more loose, but very much more conservative, in the future. Though such was the case, it was necessary for the surgeon to take every precaution to protect himself, it might even be well to let the patient think the very worst of his condition. This was especially true of abdominal work, and permission should be obtained, and that in writing, to perform whatever operation the surgeon may find necessary.

Dr. F. A. L. LOCKHART thought that the whole profession should be very grateful to Dr. Springle. His was an experience that might happen to any one who is frequently operating. The operator cannot be perfectly certain what he will find before operating.

He had been struck by the Judge's action in bringing out very clearly the fact that the parts were so tender that a thorough examination could not be made. There was no comparison between this case and the Beattie-Cullingworth case; in the latter case the patient had simply cystic ovaries, an entirely different condition from pus-tubes, they might shorten life after a long process, but a condition like that in Dr. Springle's case would prove rapidly fatal. A very important question arises out of the case. Should the surgeon as a servant, though not a salaried one, of the Hospital be asked to pay all the expenses of the case, or should the Board of Management of the Hospital fight it out in their own name and bear the costs?

Dr. J. ALEX. HUTCHISON had been always under the impression that a corporation is responsible for the actions of their servants. If a railway company is responsible in law for damages sustained through the errors or omissions of its employes, he thought that the Hospital should bear the responsibility of the suit. It should be the hospital against the individual, not the surgeon against the individual.

Dr. WYATT JOHNSTON said that he had made a thorough examination of the literature bearing upon the case, but had found nothing except the Beattie-Cullingworth case. Recently there had appeared a book by Prof. Brouardel treating of all medical and surgical responsibilities. He mentions the Cullingworth case and says that if a similar case came up in France, a similar judgment would be given. The point has been well brought out that the operation was one of emergency. Before a Medico-Legal Society of France, this question of emergency was discussed, as well as operations upon the insane. It was held that in cases of emergency in the insane, when the consent of friends cannot be obtained, the surgeon must use his own discretion.

Dr. J. M. ELDER stated that the best report of the Beattie-Collingworth case appeared in "The London Times." He thought that Mr. Justice Hawkins had taken very strong grounds when he held that any surgeon who did not remove what would involve a second operation, should be responsible for damages for such second operation. He thought that physicians should be very careful how they discussed their patient's ailments, and referred to the recent Playfair case.

Mr. CLAXTON, in reply, said it was questionable whether the hospital was responsible for its surgeon, some courts hold that it is, while some hold the reverse. If a hospital is sued it can turn round and say that it is not responsible, that it has been very careful in the selection of its men and will not have anything to do with the case, but if the surgeon is sued he believed that the hospital should step in and relieve the surgeon.

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*Stated Meeting, March 6th, 1899.*

J. G. ADAMI, M. D., PRESIDENT IN THE CHAIR.

Dr. W. A. McArthur was elected an ordinary member.

#### **Biological Test for Arsenic.**

Dr. WYATT JOHNSTON described this test, which depends upon the production of an intense odour of garlic by *Penicillium brevicaulis* grown in presence of arsenic or its compounds.

THE PRESIDENT asked if the test was not too delicate for medico-legal work.

Dr. R. A. KERRY questioned whether arsenic in the glass would not lead to an error in the test.

Dr. JOHNSTON, in reply, said that the test should only be used as a preliminary one and if necessary a quantitative chemical analysis should be made.

#### **An Unusual Form of Bromide Rash.**

Dr. JAMES STEWART exhibited a man presenting an unusual form of bromide rash. He had been taking potassium bromide, 30 grains twice a day for six years, five years having elapsed since he had consulted a phy-

sician. During this time the face and shoulders had been covered with a severe acne but the unusual features of the rash had developed within the past year. It consisted of large pustules over an inch in diameter with an inflammatory indurated base which were very painful, appeared in successive crops and healed up without leaving any scars. Coincident with the outbreak of this severe rash the acne on the face became less severe. The lesions were numerous and all situated on the fore-arms. A somewhat similar case had been shown by Dr. Blackader in January 1897, except that the lower limbs had been the seat of the eruption.

Dr. A. D. BLACKADER said that these rashes were eliminative and only occurred when the elimination of the drug by the skin acted as an irritant on the glands. When the skin was in a healthy condition the eruption was not produced. In cases of this kind there was also streptococcus infection. The first and mildest form of the rash was the papular (acne) then pustular, and later a coalescence of these pustules. This latter condition was to be avoided as indicating a toxic action of the drug. In order to prevent these eruptions, care should be taken not to push the drug past a certain point. The full therapeutic effect could be obtained without producing these rashes. The administration of arsenic as a preventive was not effective. Its only action was to tone up the general health and so keep the skin in better condition and its glands more active. General cleanliness of the skin with regular bathing and laxatives was more to be depended upon.

THE PRESIDENT asked if these eruptions were not essentially microbic in origin, the drugs having lowered the skin vitality to a certain extent. This theory would explain individual idiosyncrasies.

Dr. LAPTIIORN SMITH asked if the combination of the three bromides was not less likely to produce the eruption than the exhibition of the potassium salt alone, and also if the man's memory had been affected.

Dr. A. BIRT, during four years experience in an asylum had found the potassium salt no more likely to produce the eruption than the other compounds of bromide all of which he had used.

Dr. STEWART in reply, said that he had seen the patient for the first time only two days before and was unable to say whether any loss of memory had occurred. He had seen eruptions after the administration of the sodium and ammonium salts. The view that the appearance of the eruption indicated a toxic action on the part of the drug and called for its discontinuance he did not consider correct, for the reason that one frequently meets with cases in which a comparatively small dose will produce an eruption which will disappear on increasing the amount. This is frequently seen in the exhibition of the iodides.

#### **Pathological Specimens.**

Dr. WYATT JOHNSTON exhibited a series of pathological specimens.

### The Treatment of Diphtheria by the Use of Antidiphtheritic Serum.

Dr. J. E. LABERGE read a paper on this subject. (See page 261).

Dr. A. D. BLACKADER congratulated Dr. Laberge on the results obtained. All Montreal physicians would agree that the objections to this method of treatment were trifling, although the few cases of sudden death which were startling and unaccountable were apt to cause distrust.

Dr. A. T. BAZIN asked if Dr. Laberge had used the concentrated serums which were now available and if so if his results had been as good as those obtained from Roux's serum. During his own period of administration of part of the Civic Hospital in 1895—96, Roux's serum was the only one on the market. Samples of other makers which had been sent to him had not produced as good effects, but since then he had used the improved more highly concentrated serums of these same makers with equally good results and much less discomfort to the patient.

Dr. H. A. LAFLEUR used the concentrated serums altogether and found them more easily administered, especially to children. The rare cases of sudden death had been explained by the introduction of air into a vein but this could hardly be the case because even with the vein exposed it was difficult to puncture it, and it was much less likely to happen during an injection into the subcutaneous tissues.

Dr. H. S. BIRKETT asked what results Dr. Laberge had obtained in the laryngeal form of diphtheria. In his experience, since the introduction of antitoxic treatment intubation was much less frequently called for.

Dr. WYATT JOHNSTON asked if vomiting had been noticed to follow the administration of antitoxin. In the case recently reported, the autopsy had shown œdema of the glottis caused by fluid inspired during vomiting. It was not necessary for the food actually to obstruct the larynx, the mere presence of food particles in the larynx would cause spasmodic obstruction and death from shock.

Dr. A. BIRT thought the skin eruptions were much rarer with the concentrated serum.

Dr. A. J. RICHER stated that Roux's serum as at present supplied contained 250 units to the cubic centimetre. Royer and Rougier, the Canadian agents, were prepared to supply a limited amount of antitoxin free to pauper patients on the presentation of a physician's certificate.

THE PRESIDENT said that it was very gratifying to find that the results obtained by Dr. Laberge were so good. Dr. Bazin in 1895 had reported a mortality of 10.3 per cent. in all cases, and as a result of the work done by these two physicians, the antitoxic treatment had been generally accepted by the profession in Montreal. Medical men through-

out the Province were not so familiar with the use of the serum and he trusted that this paper would be published in both the French and English medical journals.

Dr. LABERGE, in reply, stated that he had used other serums but had not found them so effective and thought that they produced eruptions more frequently. He had seen no vomiting follow the administration of the antitoxin.

THE  
**Montreal Medical Journal.**

*A Monthly Record of the Progress of Medical and Surgical Science.*

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VOL. XXVIII.

APRIL, 1899.

No. 3.

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GLYCERINATED VACCINE.

The recent small-pox scare is not so much a thing of the past as to make a few remarks on vaccination seem belated. Once more, though on a very small scale, the protective value of efficient vaccination has been demonstrated in the case of those exposed to variolous infection ; and the willingness and even eagerness of this city's population to be vaccinated is a pleasing contrast to the opposition shown in too many instances at the time of the epidemic in 1885. Indeed, the medical profession is more concerned at the present moment with the methods of vaccination than with academic discussions designed to convince the professional anti-vaccinator and his adherents.

Human vaccine and arm to arm vaccination were superseded many years ago by animal vaccine preserved on 'points' or stored in 'tubes', with obvious advantage to the vaccinator, who was hence forward always sure of a supply, and to the vaccinated, who no longer had reason to fear that with protection from small-pox he might (though the chances were remote) at the same time acquire syphilis or even, possibly, local tuberculous infection. Now, vaccine points and dry vaccine in tubes are giving place to aseptic glycerinated vaccine, which seems to be, if one may judge from reports in current medical literature, a great advance on the methods of preparation hitherto used.

The credit of popularizing the use of Glycerinated Lymph is due to Dr. S. Monckton Copeman, of London, whose Milroy Lectures on Vaccination have just been issued in book form. In a paper presented to the International Congress of Hygiene held in London in 1891 Dr. Copeman called attention to a special method for the bacteriological purification and preservation of vaccine lymph, consisting, "in the intimate admixture of a given amount of lymph, or rather vesicle pulp, with a

sterilized 50 per cent. solution of chemically pure glycerine in distilled water, and in subsequent storage of the resultant emulsion, in sealed scribe glasses. The oculist occupies the same position in relation to the optician as he does towards the druggist and has a right to exact the same care in filling his prescriptions from the one as he does from the other. Moreover he is likely to object to the prescribing optician just as much as he or any other physician does to the prescribing druggist.

There is no reason why the public should not confide the care of their health or their eyesight to unqualified practitioners, druggists or opticians, instead of first seeking medical advice, if they choose to take their chances in this way. The evil in either case tends to correct itself, more often perhaps in the case of the prescribing optician than in that of the druggist; for, as a matter of fact, a very large proportion of persons requiring to use glasses on account of errors of refraction cannot by any possibility obtain relief except at the hands of an oculist,—of one who has the advantage of a thorough medical training and the right to use drugs the action of which is absolutely essential to a complete investigation of the case and of the many complications so often associated with errors of refraction. Moreover, the optician has no knowledge of the morbid conditions which are often the real cause for seeking relief by the use of glasses. Sooner or later, the failure of the glasses to afford relief compels the sufferer to look for other advice, and herein lies the chief danger as it sometimes happens that the delay is disastrous. Such a case is reported in the Philadelphia Medical Journal for March 18th, 1899, and many similar ones are to be found in every ophthalmic surgeon's records.

The itinerant optician, however, is the most reprehensible creature of all his tribe. For pure effrontery, impudence, and downright knavery he has no parallel. As witness the poor farmers and farmer's wives throughout the length and breadth of the land who have paid their five and ten dollars for gold mounted pebbles of wondrous virtue, and found themselves in possession of brass fittings to a bad piece of window glass. The number of these dupes is legion. The travelling spectacle vendor commonly assumes some high-sounding title, or, worse than this, pretends to be the agent of some oculist of repute whenever he reaches a locality where that oculist happens to be well known, and the ignorant never fail to swallow the bait. It seems impossible to invoke the law against these specious swindlers, but if every medical practitioner throughout the country would inform his clients that no reputable oculist ever did or ever will employ an agent, to examine eyes and sell glasses, something would be accomplished in the way of preventing this disgraceful method of swindling the ignorant and unwary.

capillary tubes, for several weeks". The advantages of this method of preserving and storing vaccine lymph are many. It has been shown that vaccine so prepared becomes in time strictly aseptic, i. e., that the glycerine tends to destroy the bacteria that were originally present in the vesicle pulp, so that in six weeks from the time of its preparation and storage in sealed tubes it is a sterile medium. This was shown by inoculating a series of agar plates with the glycerinated product immediately after its preparation, and at intervals of one, two, three and four weeks, respectively. These plates showed an abundant growth of bacteria in the first series, which diminished progressively in the subsequent series, until, with material that had been kept four weeks, no growth of bacteria was observed.

With such vaccine and asepsis in performing vaccinations, we shall hear less of suppurating vaccination wounds. It is, moreover, claimed that glycerine will kill out the streptococcus of erysipelas and the bacillus of tubercle, should either of these organisms be accidentally present in the vesicle pulp. In addition, it has been found that glycerination of lymph-pulp greatly increases the available quantity of the lymph without deteriorating its quality, and this is obviously a great advantage when large supplies of vaccine are required in epidemics of small-pox. Still further advantages are the non-coagulability, the permanent fluidity of this preparation and the maximum number of successful vaccinations.

Lastly, "the expense of producing glycerinated lymph is proportionately small, since the amount obtainable from each calf is enormously increased." With so much in its favour and nothing against it, it is to be hoped, and it is safe to say, that glycerinated vaccine will surely supersede other less cleanly and less efficient forms of this indispensable product.

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### PRESCRIBING OPTICIANS.

There is an unfortunate confusion in the minds of the people, *i. e.* the heterogeneous mass of humanity commonly designated 'the public' as to the meaning of the words 'oculist' and 'optician'. He will be a public benefactor who succeeds in making every one understand that the oculist is a surgeon, a qualified practitioner of medicine and surgery, who has, or should have, spent years in acquiring a special knowledge of his work after having obtained his medical degree; that he is neither a shop-keeper nor a mechanic; but that, on the other hand, an optician is a mechanic neither more nor less, who may have some knowledge of the anatomy and physiology of watches and clocks, but knows nothing of the anatomy and physiology of the human frame, or of the optical problems he undertakes to solve when he proceeds to examine eyes and pre-

It is a sad fact that physicians themselves—sometimes through carelessness or ignorance promote the evil by recommending their patients to any one and everyone who sells glasses or calls himself an optician.

The intelligent portion of the public are always willing to be guided by the advice of their family physician, but if he be negligent his influence is more than likely to prove positively harmful. No physician in his right mind would make a practice of sending his patients to a prescribing druggist for advice and treatment. With equal reason he should abstain from sending them to the 'Examination Free,' optician. That which is offered to the public free, as a rule, is worth nothing.

### McGILL MEDICAL LIBRARY.

Donations to the Medical Library for the quarter ending February 28th, 1899.

Presented by the authors :

- Lauder Brunton, M. D., D. Sc.—Lectures on the Action of Medicines. 1. 98.  
 Brockbank, M. D.—On Gall-Stones. 1896.  
 Albert H. Buck, M. D.—Diseases of the Ear. 1898.  
 T. S. Clouston, M. D. Edin., F. R. C. P. E.—Clinical Lectures on Mental Diseases. Ed. V. 1898.  
 John Chalmers DaCosta, M. D.—Manual of Modern Surgery. 1898.  
 Hobart Amory Hare, M. D., B. Sc.—A Text-Book of Practical Therapeutics. Ed. VII. 1898.  
 Howard A. Kelly, A. B., M. D.—Operative Gynæcology, 2 volumes. 1898.  
 Landouzy, M. D.—Sérothérapie. 1898.  
 Nathan Oppenheim, M. D.—The Development of the Child. 1898.  
 Roberts, M. D.—Contributions to Orthopædic Surgery. 1898.  
 Thomas F. Rumbold, M. D.—The Hygiene of the Voice. 1893.  
 Henry R. Swanzy, A. M., M. B.—Diseases of the Eye. 1898.  
 James Tyson, M. D.—Physical Diagnosis. 1898.  
 J. Francis Walsh, M. D.—The Anatomy and Functions of the Muscles of the Hand and of the Extensor Tendons of the Thumb. 1897.

The Library is also indebted to the following contributors :

- Buffalo Medical Journal, 1897-98.  
 Professor J. C. Cameron.—British Gynæcological Journal, 1897.  
 Professor F. G. Finley.—Physical Diagnosis, by G. A. Gibson and W. Russell, 1891.  
 Dissections of the Human Body, by R. E. Carrington, 1881.  
 Guy's Hospital Reports, Vol. 68, 1898.  
 Editors of the Montreal Medical Journal.—Index Catalogue—Surgeon-General's Office, Vol. 3. N. S.  
 Local Government Board, London. Reports of : 1898.  
 Messrs A. T. Mussen, D. M. Lineham, and G. Wilkins.—Pathology Notes, by J. G. Adams, M. D., and Surgery Notes, By T. G. Roddick, M. D.  
 McGill Graduates Society.—Hygienische Rundschau, 5 volumes : Ventilation and Heating, by J. S. Billings. 1893.  
 New York Medical Times 1898. Publishers of :  
 Revue Medicale 1897-98, Publishers of :

- Saint Thomas's Hospital Reports, Vol. 26, 1898.  
 State Hospitals, New York. Vol. 2, 1897.  
 Scientific Memoirs by Medical Officers of the Army of India. Part X, 1897.  
 Professor Shepherd, — University Medical Magazine, 1898 : Archives of Pediatrics, 1892: Canadian Practitioner, Vol. 23, 1898: Journal of Cutaneous and Genito-Urinary Diseases : Vol. 16, 1898 : Medical Record, 1898.  
 Transactions of the American Laryngological Association, 13 volumes  
 Transactions of the American Ophthalmological Society, 1898.  
 Transactions of the Academy of Medicine, Cincinnati, 1897-93.  
 Transactions of the American Orthopedic Association. Vol. XI. 1893.  
 Transactions of the Canadian Institute, 9 volumes.  
 Transactions of the Clinical Society, London, 1898.  
 Transactions of the College of Physicians, Vol. XX, 1898.  
 Transactions of the Medical Society of London, 1898.  
 Transactions of the Michigan State Medical Society, 1898.  
 Transactions of the Pathological Society of London, 1898.  
 Transactions of the Society of Alumni of Bellevue Hospital, 1897-98.  
 Universal Medical Annual, 1896.  
 Union (La) Médicale du Canada, 1896.  
 Dr. Van Gieson.—Archives of Neurology and Psychopathology, Vol. 1, 1893.

#### Text-books and other new works :

- Outlines of Zoology, by J. A. Thompson, M. A., F. R. S. E., 1895.  
 Ligaments, Their Nature and Morphology, by Bland Sutton, 1897.  
 Medical Jurisprudence, by I. J. Reese, M. D., 1898.  
 Practice of Obstetrics, Edited by Invett, 1899.  
 Quain's Appendix, 1896.  
 Revue des Sciences Médicales, 18 volumes..  
 Archives de Médecine Expérimentale, 1898.  
 Arch. für Physiologie, 1898.  
 Deutsches Arch. für Klinische Medicine, Vol. 61, 1898.  
 Dublin Journal of Medical Science, Vol. 106, 1898.  
 Schmidt's Jahrbucher, 4 volumes, 1893.  
 Charité Annales, 1898.  
 Transactions of the Ophthalmological Society of the United Kingdom, Vol. 18, 1893.  
 Sajous' Annual, Vol. 2, 1898.  
 Practitioner, London 1898.  
 Jahresbericht des Ges. Medicine, 1898.

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### GESTA MEDICORUM.

“QUICQUID AGUNT MEDICI NOSTRI FARRAGO LIBELLI.”

The International Association of Railway Surgeons will hold their Annual Meeting on May 31, June 1 and 2, at Richmond, Virginia.

The President-Elect of the British Medical Association is to be Sir William Turner, M.D., F.R.S., Professor of Anatomy at Edinburgh.

Dr. C. F. Martin, Lecturer in Medicine in McGill University, has returned to the city after a winter's study in Berlin, Graz and Vienna.

William Mitchell Banks, M.D., F.R.C.S., who delivered the Address in Surgery at the Montreal meeting of the British Medical Association, received recently the degree of LL.D. from Edinburgh University.

Dr. Simon Flexner, Professor of Pathological Anatomy in the Johns Hopkins University, has accepted the chair of General Pathology in the University of Pennsylvania in succession to Dr. John Guitéras, who goes to Havana.

Dr. Campbell Davidson, who graduated at McGill last year and has since been Externe Pathologist at the Montreal General Hospital, has given up the latter appointment and has left for Vancouver to join the S.S. Tartar as Surgeon.

The sixth International Otological Congress will take place in London, beginning August 8th. The President is Dr. Urban Pritchard. The subject for special discussion will be "Indications for opening the mastoid in chronic suppurative otitis media," which will be introduced by Professor Macewen of Glasgow, Dr. H. Knapp of New York, Dr. Luc of Paris, and Professor Pollitzer, of Vienna.

At the convocation of the Medical Faculty of Bishop's College, held on April 11th, the following received the degree of M.D., C.M.: E. L. Sutherland, B. J. A. Robinson, J. C. Tanguay, T. H. Jackson, T. Laurin and C. A. MacDougall. The Wood gold medal and Nelson gold medal were taken by E. L. Sutherland, the David silver medal by J. A. Gillespie.

Some further improvements in the Medical Faculty buildings of McGill University are to be looked for in the near future. Although the existing buildings were doubled in extent only about four years ago, they are again too small. The Library, Museum, and the Histological and Pathological Laboratories especially must be enlarged to meet existing demands.

The following have graduated in medicine at Queen's University, Kingston, at the last convocation: C. H. Amys, Lakefield, Ont.; J. Y. Baker, B.A., Summerstown, P.E.I.; A. B. Chapman, Kingston; E. G. Cooper, Lanark; J. L. Devlin, Montreal; J. F. Goodchild, Craigleigh; V. L. Goodwill, Charlottetown, P.E.I.; A. F. Grant, Peterboro; E. A. Harris, Montreal; R. W. Huffman, Bath; H. A. Hunter, B.A., Smith's Falls; R. D. Menzies, M.A., Glen Tay; J. Mitchell, Beechburg; H. H. McCrea, Easton's Corners; A. Nugent, B.A., Lindsay; A. W. Richardson, B.A., Kingston; G. S. Sadler, Packenham; A. Shaw, Kingston; W. J. Simpson, Kingston; T. Snyder, M.A., E. C. Watson, M.A., Kingston; A. R. B. Williamson, M.A., Kingston.

The prize men are as follows: J. G. Bogart, Morrisburg, prize in anatomy, physiology and materia medica. Medal in medicine, A. R. B. Williamson, Kingston. Medal in surgery, E. C. Watson, Kingston, Chancellor's scholarship, E. G. Cooper, Lanark.

## NEW BOOKS, ETC., RECEIVED AND NOTED.

The American Year-Book of Medicine and Surgery. Edited by George M. Gould, M.D., Philadelphia, W. B. Saunders, 1899.

Nursing, Its Principles and Practice, For Hospital and Private Use. By Isabel Adams Hampton. Toronto, J. A. Carveth & Co., 1899.

Transactions of the American Climatological Association. Volume XLV., 1898.

Christian Science, A Sociological Study. By Charles A. L. Reed, A.M., M.D., McClelland & Co., Cincinnati, 1898.

Primary Carcinoma of the Gall Bladder. By Gustav Futterer, M.D. Reprinted from Medicine, 1898.

Cocaine Addiction and Its Diagnosis. By Stephen Lett, M.D. Reprinted from The Canada Lancet, December, 1898.

How Soon do Bacteria, which Enter the Portal Vein Become Disseminated Throughout the System, and when does their Elimination Commence? By Gustav Futterer, M.D. Reprinted from Medicine, July, 1898.

The Milk Supply of Cities: Can it be Improved? By Henry O. Marcy, A.M., M.D., LL.D. Reprinted from the Journal of the American Medical Association. December 10, 1898.

The Advantage of Physical Education as a Prevention of Disease. By Charles Denison, A.M., M.D. Reprinted from the Bulletin of the American Academy of Medicine. Vol. III., No. 9.

State and Municipal Care of Consumptives. By S. A. Knopf, M.D. Reprinted from the New York Medical Record, September 24, 1898.

The Radical Cure of Inguinal Hernia, by Fowler's Method. By H. C. Walker, M.D. Reprinted from The Leucocyte. Vol. VI., Nos. 1 and 2.

Hereditary Syphilis. By L. Duncan Bulkley, A.M., M.D. Reprinted from the Journal of the American Medical Association, November 5, 1898.

Organotherapie ou Opootherapie. Par Le Dr. C. Hillemand. Paris, 1899.

The Treatment of Deficient Excretion from Kidneys not Organically Diseased, and some of the Diseases peculiar to Women, and Diseases of the Skin. By L. Duncan Bulkley, A.M., M.D. Reprinted from the New York Medical Journal, Nov. 5th, 1898.

Mechanical and Surgical Treatment of Fractures of the Surgical Neck of the Femur. By Arthur J. Gillette, M.D. Reprinted from the Northwestern Lancet, August 15th, 1898.

Some Sources of Failure in Treating Lachrymal Obstructions. By Leartus Connor, A.M., M.D. Reprinted from the Journal of the American Medical Association. October, 8th, 1898.

The Early Diagnosis of Cancer of the Stomach. By Chas. D. Aaron, A.M., M.D. Reprinted from the Journal of the American Medical Association, March 20th, 1897.

Caries of the Teeth and Diseases of the Stomach. By Chas. D. Aaron, M.D., Reprinted from the Charlotte Medical Journal, October, 1898.

Diarrhoea and Bacteria. By Chas. D. Aaron, M.D. Reprinted from the New York Medical Journal, May, 8th, 1897.

Practical Points in the Administration of Chloroform and Ether. By J.

Bennet Morrison, M.D. Reprinted from the New York Medical Journal, Nov. 9, 1898.

The Elimination of Bacteria from the General Circulation by the Liver and through the Bile Passages. A Claim for Priority in Stating the Presence of the Bacillus Typhi Abdominalis in the Gall Bladder. By Gustav Futterer, M.D. Reprinted from Medicine, November, 1898.

A Text-Book of Obstetrics. By Barton Cook, Hirst, M.D. Philadelphia, W. B. Saunders, 1898.

The Practice of Obstetrics by American Authors. Edited by Charles Jewett, M.D. Lea Brothers & Co., Philadelphia and New York, 1899.

A Treatise on Unripe Cataract. By William A. McKeown, M.D., M.Ch. London, H. K. Lewis, 1898.

The Phonendoscope and its Practical Application. By Aurelio Bianchi, M.D. Translated by A. George Baker, A.M., M.D. Philadelphia, George P. Pilling & Son, 1898.

Acromegaly. An Essay to which was awarded the Boylston Prize of Harvard University, for the year 1898. By Guy Hinsdale, A.M., M.D. Reprinted from Medicine, 1898. William M. Warren, Detroit.

The Medical News Pocket Formulæ for 1899. By E. Q. Thornton, M.D. Lea Brothers & Co., Philadelphia and New York, 1899.

The Sexual Instinct. By James Foster Scott, M.D. E. B. Treat & Co., New York, 1898.

Primary Focal Hæmatomyelia from Traumatism—A Frequent but Often Unrecognized Form of Spinal-Cord Injury. By Pearce Bailey, M.D. Reprinted from the Medical Record, November 19th, 1898.

The Abuse and Dangers of Cocain. By A. Schoppegrell, A.M., M.D. Reprinted from The Medical News, October 1, 1898.

The Surgical Treatment of Uterine Myomata. By Henry O. Marcy, A.M., M.D., LL.D. Reprinted from the Journal of the American Medical Association, September 10, 1898.

The Dermal Coverings of Animals and Plants. By B. Merrill Ricketts, Ph.B., M.D. Reprinted from the Cincinnati Lancet Clinic, August 20, 1898.

Serpents and their Venom, Copperhead, Coral, and Rattlesnake. By B. Merrill Ricketts, Ph.B., M.D. Cincinnati Lancet Clinic, September 3, 1898.

Deaths (Ten), Surgical and Causes. By Merrill Ricketts, Ph.B., M.D. Reprinted from the Cincinnati Lancet Clinic, June 4, 1898.

Intestinal Auto-Intoxication. By Charles D. Aaron, M.D.

Stomach Disturbances Caused by Hernia of the Linea Alba in the Epigastrium. By Charles D. Aaron, M.D. Reprinted from the Medical Record, November 20, 1897.

Transillumination of the Stomach with Demonstration on the Person. By Charles D. Aaron, M.D. Reprinted from The Medical Age, June 10, 1898.

Chronic Catarrh of the Stomach. By Charles D. Aaron, M.D. Reprinted from the Pharmacologist.

The Causes and Conditions of Pulmonary Tuberculosis, and How to Avoid Them. By Edward O. Otis, M.D. Reprinted from The American Journal of the Medical Sciences, November, 1898.

Are Complete Castrates Capable of Procreation? By F. R. Sturges, M.D. Reprinted from the Medical News, October 8, 1898.

Vitality, an Appeal, an Apology, and a Challenge. By Lionel S. Beale. Reprinted from the *Lancet*. London, J. & A. Churchill, 1898.

Some Observations of Interest Regarding the Course and Management of Cataract. By J. H. Woodward, B.S., M.D. Press of George L. Goodman & Co., 1898.

Auenbrugger and Laennec, the Discoverers of Percussion and Auscultation. By Edward O. Otis, M.D. Reprinted from the *Boston Medical and Surgical Journal*, September 22, and 29, 1898.

The Dangers of Specialism in Medicine. By L. Duncan Bulkley, A.M., M.D. Reprinted from the *Bulletin of the American Academy of Medicine*, Vol. III., No. 7.

Chloroform, Its Absolutely Safe Administration. By Robert Bell, M.D. Robert Love Holmes, Glasgow, 1898.

Glaucoma with Detachment of Retina. By William Cheatham, M.D. Reprinted from *Annals of Ophthalmology*, July, 1898.

The Relation of Suppuration to Shortening of the Limbs in Tuberculous Disease of the Hip-Joint. By Russel A. Hibbs, M. D. Reprinted from the *New York Medical Journal*, November 5, 1898.