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THE  
CANADIAN PRACTITIONER

FORMERLY "THE CANADIAN JOURNAL OF MEDICAL SCIENCE."

EDITOR:

A. H. WRIGHT, B.A., M.D. Tor., M.R.C.S. England.

Business Management, - - THE J. E. BRYANT COMPANY (Limited), 58 Bay Street.

TORONTO, MAY 16, 1891.

Original Communications.

TUBERCULOSIS IN THE ENDS OF  
THE LONG BONES.\*

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*Pathology.*—The discovery of the bacillus tuberculosis by Koch in 1882 has placed the pathology of tubercle on a secure basis, and has enabled the profession to march to the attack of an enemy whose strength and tactics are known.

The word "tubercle" is common in the works of the old writers, but is used to signify any morbid product of small size and of globular or nodular form. The term referred to the form rather than to the nature of the morbid product, and the mass might be scrofulous, cancerous, syphilitic, etc. Since the time of Laënnec, the word has been used to signify that morbid something which gives rise to general phthisis. Nélaton, in 1836, made the first systematic statement in regard to bone tuberculosis, and gave descriptions of forms of the affection that stand well the tests of time and criticism.†

The usual seat of tubercular processes in bone is the spongy tissue. In order of frequency they occur in the vertebræ, the extremities of the long

bones, the short bones of the hands and feet, and more rarely in the flat bones, and, exceptionally, in the shafts of the long bones, at a distance from the joints. Of the long bones, the tibia, femur, and humerus are the most common seats of attack, and in the order named. In the tibia the upper end is more frequently affected than the lower; in the femur, the lower end more frequently than the upper. This fact is of special interest in view of the mode of growth of these bones; the former grows more actively at the upper end and the latter at its lower extremity. Ollier has pointed out that fourteen-fifteenths of the growth in length of long bones occurs at the place of junction of the epiphysis with the diaphysis; and also that the terminal portions of the diaphyses, in children and adolescents, are most frequently the seat of acute and chronic inflammations and of various neoplasms. Tissues which are physiologically active are more fully supplied with blood than others, and are more liable to the attack of pathogenic processes. In keeping with these facts we find the knee more frequently the seat of disease than the hip or ankle, and the tibia more frequently the starting point than the femur. Another important clinical fact is also thus explained, viz., that bone diseases in the vicinity of joints are much more common in children than in adults, in whom the diaphyso-epiphyseal area has ceased to be active. When chronic disease affects the joints in the adult, it is much more frequently synovial in its origin.‡

\*A Paper read at the Post-Graduate Course of the University of Toronto, December 18th and 19th, 1890.

†*Wide Ashurst's International Surgery*, vol. vi., p. 906.

‡*Orthopædic Surgery*, Bradford and Lovett, p. 366.

\*The common form of osseous tubercular infection is the focal or encysted, first described by Nélaton. On section of the diseased bone the first noticeable change consists of a local hyperæmia of the cancellous tissue, soon to be followed by a small, grayish, translucent spot, which increases in size, while, at the same time, the zone of hyperæmia extends, and the surrounding bone becomes boggy, or sodden, from the excess of fluid transuded. The deposits present two chief types: the main one is that of a distinctively degenerative osteitis, the osseous trabeculæ being almost entirely absent, and the deposit composed of a mass of cellular tissue containing tubercles usually undergoing caseation. There may, however, be a certain amount of formative activity, and a resulting sclerosis of the osseous trabeculæ with a mass of new bone of varying density, which constitutes a tubercular sequestrum.

The modes of termination may be arranged under four heads: (1) The absorption of the diseased focus is possible up even to a late stage, provided the disease is strictly local and no sequestra have formed. (2) The deposit may push its destructive work toward the surface and reach the periosteum outside the joint, and give rise to a peri-articular abscess. (3) The diseased part may break down into pus, which may become cheesy or calcified, and remain quiescent for an indefinite length of time. (4) The fourth mode of termination—probably the most common—is also the most destructive; it reaches the articular cartilage and breaks into the joint cavity, setting up a purulent arthritis, or what is probably more common, causing an exacerbation where an arthritis had already been present. It is quite certain that the joint proper often becomes inflamed before any direct communication has been established with the diseased focus within the bone.

Lannelongue, in an early autopsy in a case of hip-disease, found a focus the size of a pea in the epiphysis, two millimetres from the cartilage. The synovial membrane was reddened and fungous; the capsule thickened; and the round ligament vascular and softened, although there was no effusion and no connection with the focus of disease in the epiphysis. Volkman has

found even more pronounced joint changes and swelling of the peri-articular structures before pus had entered the joint.† The extension to the joint in the manner indicated is in some measure dependent upon the relation of the synovial membrane to the line of epiphyseal junction. In the shoulder, ankle, and wrist, the disease remains a long time isolated, or gives rise to peri-articular infiltration and suppuration, while in the case of the hip, where the epiphysis and the upper end of the diaphysis lie within the joint, the destructive process, with greater frequency, becomes intra-articular.

*Diagnosis.*—There are no symptoms peculiar to tubercular affections of the bones—no pathognomonic signs. By consideration, however, of all the conditions of the patient, one may arrive at a strong presumption. A few symptoms and signs may be referred to as pointing very strongly to the existence of tuberculous infection of the bone in close proximity to a joint. In the domain of surgery, early diagnosis is never more urgently called for than when trouble threatens near a joint. It is not necessary to discuss cases that are far advanced; the evidence in them is so plain that an error can scarcely be made. If the products of disease can be obtained, bacilli may be found and a diagnosis established. Among the most reliable indications of incipient tubercular disease in the immediate vicinity of a joint are:

(1) *The history, family and personal.*—Concerning the former, nothing more need be said than that it is just as important as it is when chronic disease of the lungs is suspected. If the personal history is enquired into, it will, in a very large number of cases, be found that the onset of the affection has been preceded by some disease which has greatly lowered the general tone. It will often be found that the patient had recently suffered from whooping cough, scarlet fever, summer diarrhoea, typhoid fever, or other exhausting disease, and had made a poor recovery. It is doubtful whether the preceding sickness has any other relation to the tuberculosis following than that it simply lowers the vital powers and renders the tissues more vulnerable than they otherwise would be. Under such circumstances a predisposition, previously kept in check, is able to manifest itself.

\*Cheyne: *Lancet*, Nov. 15, 1890. *Orthopædic Surgery*, Bradford and Lovett, p. 215.

†Bradford and Lovett, p. 217.

A similar result follows from unhygienic surroundings.

(2) *Lameness of an uncertain commencement.*—A slight stiffness of the joint in the morning, with a scarcely noticeable limp, and a history that is indefinite as to the time when the limp was first manifested, is a valuable indication.

(3) *Some rise of temperature, especially in the evening, both local and general.*—Too little attention has been paid to this symptom. From observations made by Bradford and Lovett, of Boston, it is manifest that it is an early and valuable indication of incipient disease.

(4) *Limitation of the functions of the joint nearest the disease.*—This is, no doubt, the result of reflex action and manifested long before the joint has become infected by direct communication with the tubercular focus.

(5) *Atrophy of the muscles which control the neighboring joint.*—This is a sign that occurs so early and in so marked a degree that it cannot be accounted for by disuse only. There is manifestly a direct trophic disturbance as well. By careful comparison of the two limbs this will be found a very early and very constant indication of disease in the joint neighborhood.

(6) *Early enlargement of the bone.*—Where the deposit is at all considerable it causes a perceptible inflammatory thickening of the bone around, and careful observation will reveal a local enlargement that will be all the more manifest because of the adjoining muscular wasting. By careful measurements made from day to day, and comparison being made with the corresponding part on the other side, very slightly increasing enlargement may be observed. There will probably be some tenderness also, and a less resonant note upon percussion over the affected area of bone.

(7) *Flexion of the joint.*—In slight degree unobservable except by the most careful comparison, this sign is generally manifested at the hip, knee, and elbow. There is one special feature of great importance in arriving at a diagnosis in suspected cases—the element of chronicity. When the onset of disease is sudden and definite one may well conclude that it is not tubercular; but when there is a history of disability of a limb of uncertain beginning, particularly if accompanied by an account of exacerbations, sometimes apparently nearly recov-

ering, and most of the evidences of disease just named are found present, the clinical picture may be considered complete.

*Treatment.*—The frequency of tubercular affections is something appalling, and though the virulence of tuberculosis has made it one of the greatest scourges of humanity, yet the more complete knowledge of its natural history, its pathology and terminations, and the influences which modify its course, have done much to bring it under the control of science. At least one person of every seven dies of some form of this disease. Its ravages are seen not only in its death-roll, but in disfiguring scars, crooked spines, and stiff and deformed joints. While pathology has been showing the natural course of the disease, surgery has been making advances which enable us to utilize the added knowledge.

Though the bacillus is the essential cause of tuberculosis, yet the element of fitness of soil is one of great importance. No doubt many persons, from birth, possess a degree of resistance to infection that would insure their safety even against direct inoculation. On the other hand, there are certain conditions that may be considered as promoting the fitness of the tissues for the development of the bacillus. Chief among these may be named *inheritance, defective hygienic surroundings, poor food, and age.* Bone tuberculosis manifests itself especially between the ages of three and nine years, and its time of greatest frequency of occurrence corresponds with the period of greatest activity at the places of growth in the long bones.

The medical treatment of those suffering from osteo-tuberculosis must be tonic and supporting. As in other forms of tuberculosis, bitter tonics, arsenic, quinine, iron, and cod liver oil, must be given. Of these, the last is most to be depended upon. Of much greater importance, however, is the dietetic and hygienic treatment. The most potent agents for good are found in sunlight, fresh air, and physiological rest.

*Case 1.* T.H., male, æt. 32; good family history; of good habits; had always been healthy till eighteen months previous. At that time he fell into a lake, and after removal was resuscitated with difficulty. Did not regain his usual health, and twelve months afterward felt pain about left hip, groin, and thigh. Was soon confined to bed; had much pain in thigh and

knee. Soon pus formed, and openings were made in the perineum and on the outer side of thigh below and behind the great trochanter. Bare bone is now (March 15, 1890) found at the upper part of shaft of femur and the pelvic bones. Measuring from the ant sup. sp. process there is two inches of shortening; suppuration is abundant; there is great emaciation, waxy color, and râles at the back of lungs from hypostatic congestion; 45° of flexion.

Fixation of the limb by the Thomas' posterior splint; ordered to be carried out and kept out of doors every fine day, and given emulsion of cod liver oil and ext. malt. With little modification this treatment was continued. July 17th patient wrote: "My sores have quit running; my leg is healed up; there is not much pain. I have gained more than forty pounds in two and a half months." I have not examined this patient since the splint was applied.

Tuberculosis is a self-limited disease as much as smallpox or scarlet fever. The bacillus is short-lived and perishable, instead of being tenacious of life. If nature can be so supported as to bear up till the bacillus has lived out its short span of existence, and if strength can be imparted to repair the ravages committed by the enemy, then the once tuberculous patient may again enjoy robust health. As witnesses to this fact we may point to many who for years were invalids because of the invasion of this disease, who have survived its virulence, and who, though in most cases still bearing the marks of the conflict, yet are to-day active and useful members of society.

In the matter of treatment the army of surgeons have separated themselves into two hostile camps. They have been called by John Croft, of St. Thomas' Hospital, the *excisionists* and *non-excisionists*. While discussion from these extremes may do much to throw light upon this subject, yet to moderate men the divorce thus effected must be viewed as disastrous in practice. Neither party is in possession of "the truth, the whole truth, and nothing but the truth."

The surgeon who would never resort to operative measures would lose much valuable time, and could not be credited with true conservatism. Foci in the vicinity of a joint are a great menace to its safety; and timely evacuation by operative measures is truly conservative. As

the diagnosis of a single central cheesy focus is not easy to make, if its presence be suspected in the vicinity of a joint, exploration by a probatory incision is justifiable.

While much may be said for operative treatment, yet it must ever remain a fact that the great majority of these cases will come under the notice, not of the well-equipped hospital surgeon who is prepared to carry out, with thorough asepsis, the latest and most approved operative measures, but of the busy practitioner who deals with all kinds of cases in his daily round. Hence methods of treatment which can be adopted without resort to heroic measures are of much greater general interest and value to the profession. In using the terms *operative* and *non-operative* treatment, if one were bound to admit that non-operative treatment meant neglect, and that its results were less successful than those following operation, then he would be in error in advocating the palliative as against the more active treatment. In speaking of the treatment of tuberculous joint affections, Croft, who himself advocates operation, says: "After all deductions have been made on both sides, it must be admitted that, up to the present time, the rate of mortality is slightly in favor of the non-excisionists."\*

Howard Marsh, of London, claims to have more than ninety *per cent.* of cures of cases of hip disease, and to get better results, *i.e.*, less shortening, less deformity, etc., than are obtained by operative procedures.

The non-operative treatment of tuberculous affections of joints or of the bone in the immediate vicinity may be summed up under two heads:

1. *General treatment.*—This comprises the treatment by drugs, before referred to, and general dietetic and hygienic care.

2. *Physiological rest.*—The importance of securing rest for the inflamed part is as important here as it is in the management of a case of pleurisy, or of conjunctivitis. In a tubercular focus the process of repair often meets with great obstacles. The embryonal cells, of low vitality from the first, become the victims of the ptomaines of the bacillus, and hence only under favoring circumstances, provided by the surgeon, can they develop into tissue of a higher type.

\**Lancet*, February 8th, 1890.

A prime requisite is to secure for the part a favorable condition of the circulation, which can be done only by keeping the part at rest. In order to carry out this indication efficiently, it may be necessary to keep the patient in bed. As these cases, however, are noted for their chronicity, and months or years are likely to elapse while under treatment, the confinement indoors entails the non-use of the most efficient agents at our command for sustaining the patient's

vital powers. The dietetic care of the case may be most thorough, but it will not avail if, through confinement and inactivity, the powers of

stiff. In March leg was swollen and flexed to nearly a right angle. Extension by means of a weight and pulley was now employed, and the flexion corrected. Was in bed five months; no discharge. Was in hospital September to December, 1888; extension by weight and pulley was employed. Abscess formed, and an opening was made on outer side of the thigh.

July 14th, 1889. Is pale, but fairly well nourished; the leg is swollen and tender throughout its whole extent. Is moved with much difficulty because of the tenderness; suppuration continues from sinus at outer side of thigh. No flexion, no shortening, no movement at the hip.

Aug. 6th, 1889. Applied a long splint, which afforded extension and fixation and acted as a perineal crutch, and

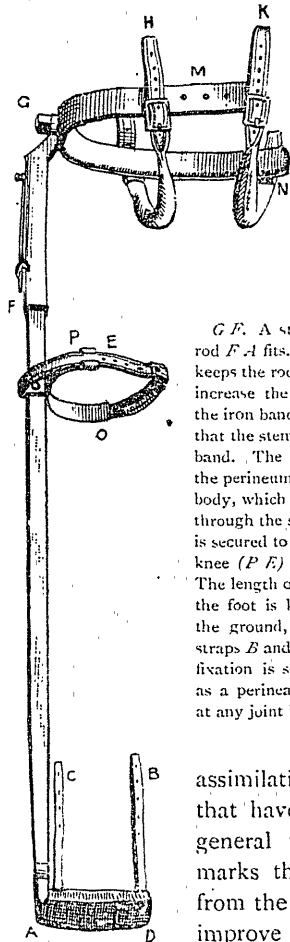


FIG. I.

*GF.* A steel box into which the steel rod *FA* fits. At *F* is a spring stop that keeps the rod in place, and enables one to increase the length from *G* to *A*. At *G* the iron band *NGM* is fixed by a bolt so that the stem *GA* does not move upon the band. The straps *H* and *K* pass under the perineum and carry the weight of the body, which is transmitted to the ground through the stem *GA*. The patient's leg is secured to the stem by a strap above the knee (*PE*) and another above the ankle. The length of the stem is so adjusted that the foot is kept about three inches from the ground, and extension is made by straps *B* and *C*. Thus extension is made, fixation is secured, and the splint, acting as a perineal crutch, prevents concussion at any joint in the limb.

assimilation give out. Cases that have shown a pallor and general want of tone, that marks the plant that is kept from the sunshine, will often improve rapidly when taken from bed and permitted to live a great part of the time in the open air.

*Case 2.* J.K., male, 17 years. At Christmas, 1886, had pain in sacro-iliac region, which afterwards extended to the front of body. Was confined to bed for some weeks. In May, 1887, a spinal support was applied for Pott's disease. At Christmas, 1887, sat down after skating, and on rising was unable to remove his skates. Was confined to bed, the right leg being painful and

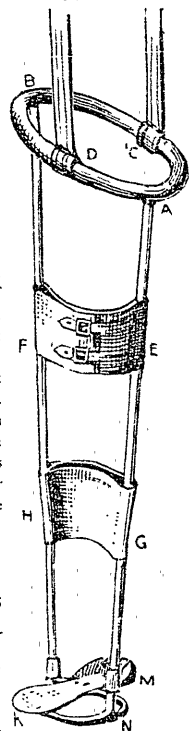


FIG. II.

*AN* and *AK* are steel rods. *AB* is an iron ring, well padded and covered, and fixed so that its plane makes an angle of  $125^\circ$  with rod *AN*. The ring is shaped accurately to the shape of the upper part of the thigh. *HGE* is a broad strap behind calf of leg, and *PE* one that passes in front of the lower end of the femur. *AN* is a foot-piece that moves up and down upon the rods, and serves to keep the toes from touching the ground. The length of rods is so adjusted that the foot comes two or three inches above the ground, and the splint becomes a perineal crutch.

had the patient out of doors as much as possible. Improvement was immediate and rapid (*vide* fig 1).

Oct. 11th. No discomfort in walking with splint, leg handled freely; discharge has ceased, appetite good, sleeps well.

Improvement has been uninterrupted, except for the appearance of a cold abscess in the dorso-lumbar region. Since the spring of 1890 he has been attending regularly to his duties as book-keeper, and is still wearing the splint.

By the employment of some form of portable fixation apparatus this end may be achieved. If the tubercular focus be in the foot or in the vicinity of the knee, the part may be kept at rest and in comfort by encasing it in a gypsum bandage, while the patient is permitted to move about

either with crutches, or, better, protected by a Thomas' knee-splint, which is equally effectual for the protection of the foot (fig. 2). If the disease be in the vicinity of the hip-joint, the American traction-splint (case 2 and fig. 1) affords rest to the part and at the same time acts as a perineal crutch, permitting movement without much inconvenience. Patients wearing these may go to school or to business, and find themselves but little hampered in performing the ordinary duties of life. More complete fixation of the hip-joint and more effectual rest for the diseased part may be obtained by the employment of a modification of the Thomas' hip-splint, by which traction is, at the same time, employed.

In disease at the hand, elbow, or shoulder, the management is more effective and simpler. The hand or wrist may be encased in gypsum. The elbow may best be kept at rest by carrying the hand up to the neck and securing it there by a roller passed around the wrist and neck alternately; in such a manner as to hold them in close contact, but not to permit the bandage to so tighten upon either as to interfere with the circulation. This is a very simple and most efficient means of immobilizing the elbow, either in disease or after reduction of dislocation, and was first employed by Hugh Owen Thomas (*vide* fig. 3).

The same bandage, together with a well-moulded cap over the shoulder, may be employed for keeping this joint at rest. Even when it is necessary to keep the patient entirely at rest upon a bed, it is better that the bed or frame employed should be readily movable, so that the patient may be carried out of doors, and kept in a tent or in the shade of a tree, if the direct rays of the sun are too strong.

Even when the patient must be confined to the bed and to the house, as must be done sometimes, in winter, it is better to employ a splint to secure fixation and traction than to use the weight and pulley. The former is attached

only to the patient and moves when he moves; the latter is attached to the bed as well as to the patient, and movement may be effected only at the risk of disturbing the limb.

When it has been found necessary to operate for the removal of the diseased area, fixation should be maintained for a long time. It is necessary not only to assist in guarding against the return of the disease, but to prevent deformity. Up till the present time the treatment of joint diseases due to tuberculosis by non-operative measures has given better results than treatment by excision of the joint. The rate of mortality is better, the functions of limb are better preserved, the dangers of general infection are not

so great, and the time required to accomplish a cure is probably not much longer. Under the plan of treatment by a portable apparatus the element of time is not one of great consequence, because the child may frequently go to school, and the adult attend to business for years, while under treatment. Parents acquiesce more readily in a plan that does not involve the use of the knife; and it is one that is at the command of the general practitioner.

When the presence of pus is demonstrated, and it is accompanied by declining health, operative measures should be employed to give

it exit, and at the same time diseased tissues may be removed. When a tuberculous focus is so situated that it may be removed without opening a joint, it should be done. Undoubtedly there is a large field for the wise employment of operative measures; but, in the main, Nature is a wise mother, and any aid proffered her should be discreet. There are two indications upon which we may confidently rely, in the fulfilment of which we certainly strengthen her to do the best for her afflicted children—give the patient *good food, good air, and sunlight*, and give the diseased member *rest*.

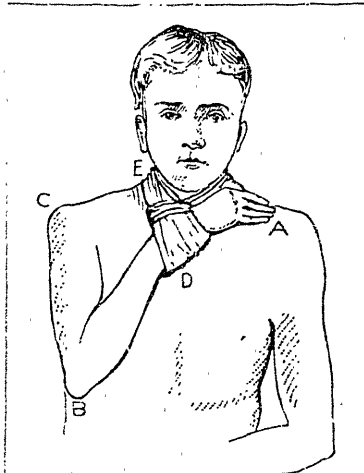


FIG. III.

The wrist is to be brought up well against the neck, and so secured by bandage that no undue constriction will occur. The elbow will now be found to be thoroughly immobilized.

## CEREBRAL ABSCESS.

BY J. E. GRAHAM, M.D.

Professor of Clinical Medicine in the University of Toronto.

Cases of cerebral abscess, although not frequent, occur sufficiently often, and present such obscure symptoms that no apology is necessary for bringing this subject before the Society. Moreover, the history which I shall relate bears upon the department of cerebral surgery, to which so much attention has been given of late years.

Gowers divides the immediate causes of abscesses into two classes, the local and the distant.

Of the local causes, out of two hundred and forty-one cases, 42.5 per cent. arose from ear disease, and 25 per cent. from injury.

Fifteen per cent. belonged to the second class, having been produced by distant causes, such as pyæmia.

Cerebral abscesses may be due to injuries so severe as to fracture the skull, or so slight as to produce no lesion of the skull or integument.

It is probable that in the latter case the abscess is due to a tearing apart of the brain substance, and the lesion is often found at some distance from the bone. The following case seems to belong to this class :

E. R., æt. 41, carpenter, was admitted to the Toronto General Hospital on November 19th, 1891. The patient had been healthy up to the commencement of the present disease. No history of syphilis. On November 5th, just two weeks before admission, while at work on the floor of a three-storey building, he was struck by a small block of wood, which had been sawed off the end of a scantling by another workman in the upper flat. The patient wore at the time a tweed skull cap. The blow was so slight that he paid little attention to it, but continued his work as before. He did not lose his balance. That evening he requested his wife to look at his head, as it felt as if it had been cut. Upon examination she found a lump about half the size of an egg, situated a little to the right of the vertex. There was no abrasion of the skin. He refused to have anything applied, went to bed as usual, and proceeded to work the next morning. When he came home that night he complained of shooting pains down the side of

his head and back of his neck. These pains continued throughout the week and although they were severe enough to prevent his sleeping he worked on at his trade as usual. Towards the end of the week he complained of chills and fever. His fellow-workmen noticed that he acted strangely a day or two before he gave up work.

On Friday, the 14th, he persisted in smoking in the building, although against the rules. When admonished he said he was not smoking, as there was nothing in the pipe. Although the severe pain in the head continued, he would not see a physician, thinking that he would soon be all right.

On Saturday, the 15th, he was constrained to stay at home, although much against his will. On the afternoon of that day his eyes began to water and saliva to run from his mouth. He made no attempt to wipe away the saliva when requested to do so. He seemed to have no idea of time, asking on Sunday morning at nine o'clock if it was not bedtime.

On Sunday afternoon he became delirious, and on the Monday stupor gradually supervened.

On Wednesday, when he was admitted to the Hospital, he was partially comatose; could with difficulty be roused to open his eyes. Paralysis of the right arm was noticed, with increased knee-jerk on the right leg. Pupils did not respond readily to light. Pulse, 46; temperature, 100.5; respiration, 40; quiet. There was no sign of external injury to the head.

Thursday, Nov. 20th: Patient is still in a comatose condition, but can be roused to open his eyes. Moans a little. Incontinence of urine from overflow. Pulse, which was 60 in the forenoon, gradually rose to 80 in the evening; temperature, 101; respiration, 36. In the evening the cheeks puffed out during respiration. Divergent strabismus; pupils contracted and very sluggish. Spasm of left leg and arm; picking of bed clothes and grasping his penis with left hand. Paralysis of right arm; knee-jerk on the right side much lessened; foot-clonus present on that side. Skin reflexes present on both sides. The lungs towards evening showed evidences of rales in the larger bronchial tubes. He resisted all efforts to give him milk, spitting it out of his mouth violently.



In the morning a drop and a half of croton oil was given, but it did not act. A consultation was held at four o'clock in the afternoon, when it was decided to operate. The slow pulse and coma pointed to compression. This might be due to meningitis, hemorrhage and clot, or to localized inflammation of the brain substance and consequent abscess. It was also thought possible that a neoplasm might be present with a surrounding cerebritis.

The length of time (two weeks) which existed since the injury would preclude fresh hemorrhage. If a clot had occurred at that time it would have undergone decomposition, resulting also in abscess.

As the spasm or irritation symptoms were found on the left side, and the history pointed to injury on the right side of the head, it was resolved to trephine on the right side, convenient to the leg and arm centre.

In that situation the brain was found healthy, and although the hypodermic needle was inserted into the brain substance in different directions, no pus was found.

An opening was then made on the left side over the arm centre. In this situation there were evidences of inflammation. The dura mater bulged out through the opening, and upon cutting into it inflammatory lymph was seen and small black clots were discovered on the pia mater. Gas was also seen to escape in little bubbles. It was then thought that we must be in the immediate vicinity of the abscess. The hypodermic needle was introduced and no pus found.

An enlargement of the opening was then made posteriorly, on the supposition that the abscess might be in the post cerebral lobe, but without result. The patient did not appear to suffer from shock, but gradually sank and died at 7 a.m. the following morning. No anæsthetic was given during the operation. He moved his left arm and leg when the scalp wound was made. His pulse remained between 70 and 80 during the operation.

*Post mortem* examination made three hours after death. His head only was examined. Upon removal of the calvarium and membranes an irregular, dirty, dark-colored patch about an inch square was seen on the upper surface of the left frontal lobe, close to the longitudinal

sinus. Upon cutting into the brain, this patch was found to be situated over an abscess, which was as large as a horse chestnut, and contained greenish-yellow pus which emitted a very offensive odor. It was situated over the anterior corner of the lateral ventricle, but did not open into it. A small amount of fluid was found in the ventricle. The choroid plexus was much congested upon the left side, and the cerebral convolutions were flattened. The abscess walls were quite thin. Nothing abnormal was found on the right side of the cerebrum.

In all probability in this case the abscess was the direct result of the blow, which must have been severe enough to produce a slight rupture of brain substance in a part of the cerebrum a little distance from the point of infringement. The question naturally arises, might not an abscess have existed previous to the accident? This is, I think, excluded on two grounds: (1) the walls were exceedingly thin, and (2) the patient appeared to have been in excellent health up to the time of injury. According to Fagge, four weeks is the time for a capsule to form in a case of abscess, as shown by the history of a number of recorded cases in which suppuration followed an accident.

Dr. Gull cites a case in which the absence of a limiting membrane was given as proof that the abscess did not arise from an injury received eighteen months previously. In another case the presence of a membrane was taken as proof that the abscess did not arise from pyæmia, the result of small-pox, from which the patient suffered within three or four weeks of his death.

These facts are important in a medico-legal sense, and would appear to prove that in the case related we had to deal with a recent lesion. Moreover, it is stated that in recent abscess the pus is green, viscid, and of acid reaction. In old abscesses pus is bright green and alkaline. No test was applied in our case.

Some years ago Dr. Temple presented before this Society the history of a case of cerebral abscess which I had the privilege of observing with him. In that case the acute symptoms, severe headache followed by coma, were not of more than two or three weeks' duration. There was, however, a previous history of the patient's having had epileptic convulsions, and he had

at times complained of peculiar, indefinite nervous symptoms for three or four months previous to the fatal termination. On *post mortem* examination an abscess the size of a walnut was found in the front cerebral region, which extended outwards to the membranes, producing localized adhesions, one about the size of a cent.

The wall of the abscess in that case was quite dense and thick. There was no doubt but that the patient had for months been able to attend to his ordinary business while an abscess of considerable size had existed in the cerebral substance.

The formation of an abscess under such circumstances as are given in the history of our case is an interesting pathological study. It is of course not difficult to understand that from continued compression a slight rupture of the delicate brain tissue might arise from a blow which is not at all severe; but if suppuration is necessarily due to the presence of bacteria, how could these organisms have penetrated the brain substance and set up a destructive process in its very centre? The pus was not examined for bacteria, but I have no doubt that if it had been they would have been found. It is probable that the micro-organisms which seem necessary to the formation of pus may at times find their way into the circulation from the alimentary canal, and if there is no lesion in the system they may be destroyed without producing any evil effects. If, however, in their course they should meet with a break in the tissue, or a weakened resistance, they might be able to set up the pathological process peculiar to their existence and growth. Could this have been an abscess of spontaneous origin, but recently formed? The other organs of the body were not examined, so that we cannot say whether any depot of pus or abraded surface existed elsewhere.

Wilks and Moxon have never met with a spontaneous abscess of the brain that could not be explained on a careful examination of the organs of the body. Chronic disease of the nose occasionally produces abscess.

In Guy's Hospital Reports six cases of abscess are recorded which sprang from lung disease. Inflammation set up by a thrombus washed out of the pulmonary vein, in bronchitis, tubercle, pleurisy, acute pneumonia, chronic pneumonia, with dilatation of the bronchi.

The most interesting practical point in connection with this case was the localization of the lesion.

Looking back, I do not now think we were warranted in opening the skull upon the right side.

It will be remembered that our reasons for that procedure were: (1) That the blow had been received upon that side, and, secondly, on account of the spasm of the left arm and leg. The paralysis of the right arm was explained on the supposition that a slow hemorrhage, occurring on the right side, might press over upon the left side of the brain, disturbing the motor centres upon that side.

If, however, the spasm of the left arm and leg had been due to a hemorrhage in their centre upon the right side, these symptoms would have come on early and would not have been delayed until the last day, as was actually the case. Then I think now the paralysis of the right arm could not have been accounted for on the ground that the lesion in the form of a gradually increasing clot existed on the right side and produced pressure on the left. It will be noticed that the arm centre is not situated near the vertex, and I am doubtful if any amount of pressure from the opposite side could produce such an effect as to cause paralysis.

The mere fact that the injury had been received on the right side ought not to have influenced us, because we know that the blow had not been severe enough to knock the man down, or to have produced even momentary unconsciousness.

It might have been asked: How do you account for the spasm of the left arm and leg when the lesion was found on the left side of the brain? The only way in which I can explain it is on the ground that some of the fibres of the motor tract do not cross over in the medulla, but pass directly down, forming the column of Turck, and that the muscles of the limbs upon the left side were influenced by these. Another condition was present which should have pointed out to us the left side as the seat of lesion. You will remember that on the first day after his admission there was paralysis of the right arm and slight paralysis of the leg, accompanied by increased knee-jerk, and that on the second day the paralysis of the

leg had increased and the knee-jerk was absent. This was evidence that the right leg centre, or the fibre leading from it in the left cerebrum, was at first irritated and then destroyed. Again, when the opening was made upon the left side, and evidences of an abscess in the neighborhood were made distinct by the presence of lymph and the bubbling of gas, we should have made the next opening immediately in front instead of immediately behind, as was done. The reason I suggested making the opening larger in the posterior direction was that the post cerebral region then was a large, silent area in which abscesses are not infrequently found. I was not aware at the time that at the onset of the trouble our patient had suffered from distinctly mental symptoms. He would, for instance, think he was smoking when the pipe was held in his mouth, with bowl downwards and no tobacco in it. He lost proper ideas of time, and in other ways acted queerly. These symptoms pointed to a lesion in the anterior rather than the posterior part of the cerebrum.

It must of course be said, in justice to the physicians and surgeons in attendance, that it was difficult to obtain a reliable history from the friends of the patient, and that nothing of a subjective character could be elicited from the patient himself on account of his comatose state. Moreover, on account of the urgent condition of the patient, little time was given for a thorough study of the case. From it, however, there are some lessons to be learned:

(1) We should obtain and write down all the facts in connection with the previous history. It is not always easy to do this, especially in hospital cases.

I would like to state here that when physicians throughout the city send patients to the hospital in a comatose or partially comatose state, they should also send a few notes of the previous history of the case. I have frequently found it simply impossible to arrive at a satisfactory diagnosis on account of the absence of such a history.

(2) A careful examination of the signs present should be made in a systematic manner. Very often much more can be discovered than at first seems at all probable.

(3) In the consultation which follows there

should be a full and free expression of opinion by each consultant. In this way any errors of reasoning may be corrected and a better conclusion arrived at. In the case related very little time was available for discussion.

(4) The ordinary trephining instruments are not sufficient for these difficult operations. In cerebral, as in abdominal surgery, instruments adapted for this department should be at hand, so that the surgeon might be prepared for any emergency.

The success of the surgical treatment of abscess of the brain, when the operation has been performed under favorable circumstances, has been very satisfactory.

ADDRESS DELIVERED AT THE SPECIAL CONVOCATION FOR THE MEDICAL FACULTY OF UNIVERSITY OF TORONTO,  
MAY 6TH, 1891.

BY SIR DANIEL WILSON, LL.D., F.R.S.E., PRESIDENT.

At this convocation of the University for the awarding of honors and the admission to degrees in the Faculty of Medicine, we are once more reminded that in the reorganization of the Provincial University on a wider and more comprehensive basis one of its results has been the restoration of the Medical Faculty. By the same legislative enactment we are also enabled now to welcome Victoria University into the closest bonds of federal union, to co-operate with us in the maintenance of one uniform and high standard of education.

Among the changes by which the former University Act of 1853 aimed at, more efficiently adapting the Provincial University alike to the wants of a young country and to the demands of higher education in an age of unwonted progress, was the establishment of professorships in mineralogy, geology, and natural history, along with the advancement of all departments of scientific education to an important rank in the prescribed requirements for a degree. It was at the date of that change in the scheme of University education that I entered on my duties as a member of the University Faculty; and fresh as I then was from Edinburgh, with its great schools of science and medicine in closest co-operation, it was with mingled wonder and re-

gret that I learned of the abolition of the Medical Faculty. This act was the work of politicians and educational reformers before I reached Canada; and it is better perhaps that I should not now enter into a discussion of the reasons assigned for a procedure which left the University with the power of giving degrees in medicine, but excluded it from all share in the training for graduation. But at this comparatively remote date from an Act of the Legislature of a former generation, before the Dominion of Canada was called into being, I may perhaps, without risk of offence to any surviving representative of the moving spirits of that transitional period, revert to a condition of things on which I looked well nigh forty years ago with wondering eyes. A medical man of exceptional ability had unfortunately turned aside from the ordinary duties of professional life to minister to the diseases of the State, and apply a radical cure to the body politic. After failure in an attempted employment of the most drastic measures as a political elixir of life, a new turn in the wheel of fortune placed him in the influential position of a member of the Canadian Executive. It thus fell to the share of a doctor of medicine to play the part of surgeon in prescribing restoratives for the peculiar ailments with which old King's College was afflicted, and, from whatever motive, the political M.D. insisted on amputation of a limb.

A school of science is not necessarily dependent on medicine, but from the early days of the famous Arabian Schools of Science of Salerno and Cordova, the two have gone hand in hand, and chemistry and biology have derived their best stimulus from such conjoint action. But happily in those early years of the remodelled University, the medical students still sought in Prof. Croft's lecture-room and laboratory the indispensable chemical instruction which could not then be had elsewhere. It was at a time when the opponents of national unsectarian education persistently clamored for a division of the endowment, and, with this object in view, perseveringly reiterated their demands for returns of the number of students in attendance. It would be ungrateful in me to forget the yeoman service there rendered to us by the abolished Medical Faculty, who thus helped to swell our meagre ranks, and so tided us over the critical

years of reorganization. *Velut arbor ævo* is the motto attached to our University crest of a luxuriant maple tree, but the seed had scarcely been cast into the ground when, instead of a young sapling, we were called on to produce a full grown giant of the forest, under the shadow of which the new generation might sport itself and gather in ripened fruit. The first missionaries to Tahiti, in striving to superadd some of the elements of civilization to their ethical instructions, taught the natives to plant corn and beans, but they looked in vain for their harvest, till they discovered that the impatient natives, like our wise legislators, went by night and plucked up the grain to learn how it was growing. It is not without a grim sense of humor that I recall the service rendered to us in our hour of need by the moribund Medical Faculty, for I was then starting as Professor of History with one of my classes numbering two students. Happily I was not a medical professor, but how I and my chair escaped the amputating knife is a marvel.

But a review of the Department of Biology, or Natural History, as it is styled, in those same critical years, abundantly illustrates how prejudicial the abolition of the Medical Faculty proved to that important branch of scientific education. It was not without difficulty that a niche for it was found in the Arts course. It seemed the least in demand of all the sciences; and for years the removal of its professor would have very slightly affected the work of the University. Now, on the contrary, with the stimulus which the restored faculty has supplied, and the ability and zeal with which the joint work of the chairs of biology and physiology are carried on, the subject has become a popular one with the students of Arts, and for the first time is fully recognized as an important branch of general education. The progress thus achieved has been accompanied with demands for adequate appliances and accommodation, which have been responded to on a scale that excites the envy of sister sciences. At the inauguration of the new building for this department, Prof. Osler, of Baltimore, and Prof. Vaughan, of Ann Arbor, were alike hearty in their sympathetic congratulations, and we recall with gratification the high terms in which Prof. Minot, of Harvard, expressed his estimation of Prof. Ramsay Wright as an in-

structor; and then adding, "I congratulate you all most heartily upon the possession of this beautiful building. We have in the United States, unfortunately, scarcely any building to equal this, none, I think, superior to it, for the purpose for which it is designed. Even my own University of Harvard, one of the richest and oldest in the States, has not anything I would call better than this."

The extent to which the appropriation of provincial funds for the encouragement of professional education is advisable has anew become a subject of interest. It is not to be questioned that the primary aim of the University as a provincial seat of learning is to stimulate higher education in the true sense of intellectual culture. One grand aim must be to elevate the whole standard of intellectual culture in the community. Knowledge is power, and it requires wide and thorough culture to enable a people to turn this power to practical account. We need not only the power of the gifted few, but the wise sympathy of a well-educated community. The primary aim of our Arts course is education *per se*. Priceless harvests are ours if we will only reap the fruits of the old seed-time of Greece, of Rome, and of later generations. The more education is prized for its own sake, and not as mere professional training, the richer and more lasting will be the final results. But in a young country such as ours few indeed can hope to give up their lives to the luxury of study, to desert the practical claims of duty or the homely demands of agriculture to plough the classic field, or abandon the work of the surveyor and civil engineer in the hope of producing a new Principia. Hence, our Arts work in the University curriculum is so methodized under various departments of study as not only to secure thoroughness in the work of our honor students, but also to admit of their selecting courses of study best adapted to their future aim in life.

Hence, while the work of the undergraduate throughout his four years' course of study for his degree in Arts is strictly educational, and not professional, training, it is nevertheless with many, indeed with the large majority of our students, an indispensable requisite for their future life work. We are training men for teachers, for land surveyors, for civil engineers,

for assayers and miners, for theologians, for bankers, lawyers, statesmen, and political economists, and unquestionably also for medical practitioners. The remodelling of our departments of science and the prescription of their special honor work have this as well as other aims in view; nor is there any department of general education in which the whole community have a deeper interest than in the thorough scientific training of our medical practitioners. I cannot imagine that the intelligent citizens of Ontario will ever be persuaded to view with disfavor the devotion of a portion of the resources of a national institution for the purpose of elevating medical practice from mere empirical routine to processes based on the determination of a scientific diagnosis and an intelligent mastery of the laws of pathology. My long experience in connection with higher education in Canada enables me to look back upon a time when the machinery of our school system had been efficiently remodelled, but the teachers had still to be trained, and much had to be accomplished before the results even of our common school education could be accepted as satisfactory or creditable to the country. It was difficult to persuade either legislators or people to recognize the fact that only by the liberal fostering of higher education in its most recondite branches would the training of their children in the rudiments of knowledge attain a satisfactory efficiency; and so in like manner must our people realize the fact that it is in the elevated ranges of scientific research, in which the chemist, the biologist, and the physiologist are in search of abstract truths of science, that the discoveries are made on which the ultimate triumphs of the healing art depend. Sir Humphrey Davy's experiments on the respiration of nitrous oxide prepared the way for the discovery of the properties of chloroform and other anæsthetics and hypnotics, by means of which an incalculable amount of human suffering has been prevented.

It is pleasant for me now to look back over the vista of half a century and recall the work of Sir James Simpson, the valued friend of my early years, and my intercourse with him when he was pursuing the experiments that were destined to enroll his name among the benefactors of his race. His anæsthetic gift has proved a priceless boon to humanity. Under its beneficent

influence the terrors of the operating theatre have to a large extent ceased; even the horrors of the bloody battlefield have been mitigated; and life-saving operations are now welcomed where formerly life itself seemed to be purchased at too costly a price under the anguish of the surgeon's knife.

In this one direction we owe to the practical fruits of scientific research as great a boon to humanity as the records of progressive knowledge disclose. But it cannot be doubted that we are on the eve of equally grand discoveries in medical science. Until the practitioner clearly understands the sources of disease his practice must be empirical, and the results too often a matter of chance. The contributions of Tyndall, an eminent physicist, have thrown a flood of light on the mysteries of pathology. It is now recognised that the source of many diseased conditions of the body is connected with the presence in the tissues of living organisms. The microscope in the hands of the scientific physiologist bids fair to revolutionize medical science. With its aid the study of bacteriology is coming to occupy the largest share in the work of the pathologist, nor is one incident in the history of its study in this University likely to pass soon out of remembrance. In accordance with well-known precedent the evening of the 14th of February was, last year, given up to the students of the University for their annual conversation carried on under the directions of the Literary and Scientific Society of the undergraduates. The Senate chamber was set apart for a series of microscopic illustrations, including a set of microscopic slides prepared by Prof. Ramsay Wright, as a "Display of Bacteriology, including the La Grippe Microbe and the Development of the Chick." Two of the assistants, in carrying up stairs the lamps required for illumination of the microscopes, stumbled and upset them. The furnaces had been in constant operation for the requisite heating for upwards of four months, in consequence of which the wood throughout the building was so dry that it readily ignited, and, notwithstanding every effort to arrest the flames, the fire involved the ruin of our beautiful University building, and along with so much else, the loss of many of the prized contents of our museums. It is not perhaps even now generally known that our

museums of biology and ethnology, with all else involved in the dire conflagration, fell a victim to la grippe. The loss of a very valuable set of microscopes might seem, under such circumstances, a fitting reprisal. But the microscope must resume its place in our laboratories, for it has become the grand instrument in the use of which the medical students find new revelations of the sources of disease, and thereby learn how to master them by an intelligent application of remedial measures. Until the physician can give some better reason for the curative means he resorts to than that he is following the prescribed usages of the profession, he is little better than an empiric. The determination by Prof. Tyndall of the presence of living germs in the floating dust, the following up of this with the assignment of the source of zymotic disease to an alteration of the tissues analogous to a fermentation, and the tracing of this to a specific microbe, are all important steps in advance. The causes and conditions once known, the effective remedy must follow. The scientific physician no longer gropes blindly like the Indian medicine men after a vague possession of evil. Science is now pointing the way with clear vision towards a definite curative system. Hence the important discoveries of Pasteur, Koch, and other eminent physicians, who are not to be held responsible for the exaggerated extravagances of the gossip of the daily press, as though the *Élixir of Life* had been discovered and disease and death were at an end. We see as yet but the glimmer of a new dawn. That the principle has been mastered is the grand point. Surprising results have undoubtedly rewarded the experiments on lower orders of animal life, but the history of the investigation thus far shows that much caution must be exercised in arguing from one animal to another, and, above all, from lower animals to man. Prof. Ramsay Wright has spent the past winter in the laboratory at Berlin in diligent study of this vital question. Before he returns he purposes passing some time with Pasteur at Paris. The students alike in the departments of Arts and Medicine cannot fail to reap important additions to their own knowledge and large aid toward the full mastery of the method of study and researches as the results of his winter's labors on their behalf.

And now, permit me to address myself specially to you who this day, figuratively, I trust, no less than literally, lay aside the habit of the medical undergraduate for the doctor's gown. You are now to enter on the practice of a profession no less responsible in the grave trust it involves than honorable in the respect that it commands when its duties are faithfully performed. You bear away with you the honors of a University which aims at maintaining a high standard, no less in the principles that actuate its members than in the requirements for its degree. No profession is more honorable than yours. Nor does even the Christian minister command a more sacred confidence or a higher influence than is freely accorded to the high-minded physician in many an hour of domestic trial and bereavement. The medical missionary is indeed an apt union of two compatible functions; and with the Great Physician, the Divine Healer, as your exemplar, you will find yourselves admitted to the closest confidential relationship, not only in seasons of sorrow and suffering, but also in the happy hours in which a new life adds fresh hopes and joys, and kindles anew the domestic hearth with a brighter glow. I wish you now God-speed as you bid adieu to all the pleasant memories of student life, to enter on the battle which all must wage. I doubt not you will look back in many a graver season on the busy, happy hours, full of brightest hope, passed in the college halls. I trust you carry away with you friendships to endure through life. None are more delightful than those which, formed in undergraduate years, stand the after strain, and constitute bonds stronger than ties of blood. Let me add, in conclusion, that in the act of kneeling to receive your degree you have to-day performed the old act of feudal homage, not to me, but to your Alma Mater. Her vows are on you. You go forth as true knights plighted to honor and fidelity. See that no act of yours brings discredit on her. Your failure will tarnish her honor as the mother of unworthy sons. But also your triumphs are hers as the fruits of her training, and no patrician style, or inherited titles, can compare with the cherished memories of those whose names are proudly recalled by later generations in their own college halls, or even of those whose too brief career yields but

the bud and blossom of promise, but who live embalmed in kindly memories, not less genuine. Poets are by no means wanting on our Canadian Parnassus when the cypress prematurely displaces the myrtle wreath; and if we cannot always command a Milton to "build the lofty rhyme," it is no less sincere regard that perpetuates the name of the brother graduate when

"Lycidas is dead, dead ere his prime;  
Young Lycidas, and has not left a peer."

## Selections.

A CASE OF PROBABLE CONGENITAL OBLITERATION OF THE INFERIOR VENA CAVA, WITH RESULTING VARIX.—The patient was referred to me for the care of an ulcer of the right leg by Dr. J. Collins Warren, of Boston, to whom I am indebted for permission to report the case in full.

G. P., a boy seventeen years old, was born of healthy parents, who have five other children, all of whom are well and have no deformity. The mother noticed that while yet a baby this boy's veins seemed large over his belly, and the older children called the bluish configurations on the abdomen a map. When two years old an attack of brain trouble caused him to screech night and day, and at the same time he had starting fits. Upon recovery from this brain trouble he had measles and whooping-cough. Although he has always been a delicate child, yet up to three years ago he was fairly well. At that time he had typhoid fever, which lasted long and was severe, and left him very weak. The limbs swelled very much after this illness, and the veins of the lower extremities were larger than before. About six months ago an ulcer appeared on the right leg, which healed very slowly. At present the boy's height is one hundred and seventy-two centimetres; weight a little over fifty kilogrammes. He is thin and has a peculiarly tired look in the face.

Upon examination of the body the following appearances are seen: The superficial abdominal thigh and leg-veins are prominent. Very small, fine veins are seen all over the surface of the lower extremities between the larger branches. There is a decided difference in the size of the two legs. There is no marked œdema present, but the whole mass of muscle of the calf and

thigh seems full and distended. A recumbent posture and bandaging diminish the swollen condition very perceptibly. There are no hemorrhoids, nor is there a varicocele. Any injury to the skin of the legs is followed invariably by a superficial ulcer which is slow in healing. At present there is a new ulcer on the left leg. The heart, lungs, and abdominal viscera are apparently, as far as careful physical examination can determine, in normal position and condition. As to the probable cause of the present condition: The enlargement was noticed at birth; it therefore had its origin before birth. There is evidently an obstruction to the return of blood by the natural channels from the lower extremities. The most probable explanation of this condition is that there is a congenital narrowing or obliteration of the inferior vena cava. Knowing the frequency of the occurrence of phlebitis after typhoid fever the increasing difficulty which this boy found after the illness from this fever is not to be wondered at. The case is unusual, and serves to illustrate the possibility of the existence of greatly enlarged and distended superficial and deep veins of the lower extremities without resulting œdema. As for treatment, the boy is bathing regularly and carefully, avoiding slight knocks and bruises of the skin, and is wearing properly-fitting silk elastic stockings which reach to the knee. Operative interference is evidently not indicated.—*By Charles L. Scudder, M.D., Assistant in Clinical Surgery, Harvard University, Boston, Mass., in the Archives of Pediatrics.*

ATROPINE IN ENURESIS.—The following is a brief account of a trial with atropia in twelve chronic bed-wetters in the New York Infant Asylum, Mt. Vernon, N.Y., and is published by the courtesy of the attending physicians: Nine boys and three girls, the ages ranging from four to ten years, were selected for treatment. All were in fair general health, and no cause of the trouble could be found. They had been through the usual routine treatment with strychnia, belladonna, etc., without improvement. They had always been troubled with enuresis; all wet two or three times during the night, and three once or twice during the day in addition to the nocturnal incontinence. The oldest, a boy of ten, was returned to us from the West,

where he had been sent by the Children's Aid Society, having been pronounced incurable; he wet both day and night. It is a custom in the institution to put the children to bed at six o'clock, and to take them up at ten o'clock to urinate. Being desirous of testing the value of atropia, the habits of life were not changed. The plan of treatment followed was that used by Dr. William Perry Watson (October *Archives*, 1889). A solution, consisting of one grain of sulphate of atropia to one ounce of distilled water, was ordered, and of this one drop was given for every year of age of the patient, at 4 and 7 p.m.; one-half of this quantity was given, however, in each case for the first few days; no unpleasant symptoms followed, and the full amount was given. Physiological symptoms were produced in three, but were slight and of no importance. After six weeks of treatment slight improvement was noticed in four—would go one or two nights in a week without wetting; at the end of the third month these four wet but once or twice a week. Seven were practically well at the end of the fifth month, rarely wetting. The treatment, however, was continued as before two months longer, when the dose was reduced one-half; this was given two months, and then stopped. It is nine months since the treatment was discontinued, and there has been no return of the trouble. The remaining five, which includes the girls, showed but slight improvement at the end of the fifth month of treatment, wetting nearly every night. During the next three months the improvement was gradual, and at the end of the eighth month they wet not oftener than twice a week. During the tenth month there was only an occasional wetting. The dose was reduced one-half, and after one year of continuous treatment there was no wetting. The atropia was stopped, and there has been no return of the enuresis in six months. Eighteen months ago we had twelve chronic bed-wetters of the worst order; to-day they are well—the only medicine used was atropia, given as above.—*By Charles G. Kerley, M.D., Resident Physician, New York Infant Asylum, Mt. Vernon, N.Y., in the Archives of Pediatrics.*

Two cases of death from hydrophobia in the United States have recently been reported, one in Connecticut and one in Indiana.



**CHRONIC RHEUMATISM AND THE NERVOUS SYSTEM.**—A novel and suggestive, if somewhat revolutionary, theory in reference to the dependence of chronic rheumatic joint changes on a morbid condition of the central nervous system is advocated in a work by Dr. Wichmann, of which an abstract is furnished in a recent number of the *Centralblatt für Klinische Medicin*. The author began his work six years ago, with the view of explaining the nervous symptoms associated with rheumatic joint affection, and the dependence of those upon a central cause was first suggested by the occurrence of symmetrical phenomena, such as patches of erythema, subcutaneous nodules, etc. Charcot has explained the occurrence of contractures in rheumatism by supposing that there is an inflammation of the articular nerves, the influence of which is transmitted to the centres in the cord, there giving rise to irritation of the motor roots; and the fact that the contracture is usually in the flexed position is explained by the greater power of flexors as contrasted with extensors. But it is pointed out that this would not explain the occasional occurrence of extensor contraction, and that, moreover, in other conditions giving rise to joint affection, such contractures do not take place. Further, as supporting the theory of a central lesion for those conditions, attention is directed to the occurrence of arthropathies in tabes and other spinal conditions, and it is contended that a feasible explanation of the vaso-motor and trophic disturbances—such as “glossy skin”—as well as of the disturbance of sensibility, is offered by such a hypothesis.—*The Lancet*.

**CHLORIDE OF ETHYL AS A LOCAL ANÆSTHETIC**—As a substitute for ether spray as a local anæsthetic, M. Monnet has introduced a method of freezing by means of chloride of ethyl, which is highly spoken of by Dr. C. Réard, clinical professor at Geneva School of Dentistry. Chloride of ethyl is a colorless liquid possessing an ethereal odour, with a boiling point of 50° F. It is hermetically sealed in glass tubes containing ten grammes, one end being drawn out into a fine point. When required for use the point is broken off with a pair of forceps, or by hand, at the narrowest part, which is marked by

a file scratch on the glass, and the warmth of the operator's hand is sufficient to cause a very fine jet of the chloride to be projected on the part to be anæsthetised. One great advantage claimed for this method is that no apparatus is required, and its use is advocated in such cases as tooth extraction, neuralgia, etc.—*The Lancet*.

**SUICIDE BY DYNAMITE.**—A quarryman, who would appear to have been in a despondent state of mind from drink, committed suicide recently at Rothbury in the following extraordinary manner. He placed an ordinary dynamite blasting cartridge in the fold of his soft felt hat, set fire to the cartridge, and placed the hat on his head. In a few seconds the explosion took place, taking away the whole of the top and back of his skull, but he was found on the ground with his face uninjured; of course, dead.—*The Lancet*.

**THE USE OF FORCEPS IN BREECH CASES.**—Dr. Fürst, of Graz, strongly recommends the use of forceps in delayed breech cases, in preference to the fillet or blunt hook. The forceps should have a large cephalic curve, and the points of the blades should come close together. Traction should be made only during the pains, and then the force of uterine contraction and the pressure of the soft parts will tend to prevent slipping of the blades. The instrument is used, therefore, simply to supplement an inefficient driving force.—*Archiv für Gynakologie.—Med. Rec.*

**THE DA COSTA LABORATORY OF BIOLOGY.**—It is announced that the trustees of Columbia College have determined to devote the late Mr. Charles M. Da Costa's bequest of \$100,000 to the foundation endowment of a laboratory of biology, to be built on the grounds of the medical school (the College of Physicians and Surgeons), and that the professor in charge of the department is to be designated the Da Costa professor of biology. This is an early and striking manifestation of the good likely to result from the union of the College of Physicians and Surgeons with Columbia College.—*New York Medical Journal*.

THE  
Canadian Practitioner

A SEMI-MONTHLY REVIEW OF THE PROGRESS  
OF THE MEDICAL SCIENCES.

*Contributions of various descriptions are invited. We shall be glad to receive from our friends everywhere current medical news of general interest.*

*When a change of address occurs please promptly notify the Publishers, THE J. E. BRYANT COMPANY (Limited), 58 Bay Street.*

TORONTO, MAY 16, 1891.

A CASE OF ALLEGED MALPRACTICE.

An action was brought against Dr. Alfred Farncomb, who has been practising in Newcastle for the last seven years, at the Assize Court, Coburg, May 6th, to recover damages for alleged malpractice. The plaintiff, a farmer, received a dislocation of the shoulder. The evidence showed that the doctor adopted the usual methods in his attempts to reduce the dislocation, but failed. Whether a reduction at that time was possible cannot now be ascertained, but the strenuous opposition of the patient prevented a proper completion of the surgeon's efforts. As the patient was the sole proprietor of the shoulder, we suppose he had a right to stop the doctor at any stage of his proceedings, but in doing so he should suffer the consequences.

The doctor evidently used his best endeavors as far as he was allowed, and it remained a question whether he had shown want of skill. The medical witnesses approved of his methods, but the intelligent jury, composed of sympathizing brother farmers, did not, and decided that the defendant should pay \$300 for his want of skill in the transaction.

To decide such a question an intimate knowledge of surgery and anatomy is of course required. The average farmer, who so frequently acts on our juries, does not, as a rule, possess the required knowledge. It is perhaps only justice to the jurymen to say that they frequently realize this fact, and they appear by common consent to have adopted a simple rule in all cases of doubt, *i.e.*, give a verdict against the doctor.

We regret that Dr. Farncomb should have had so much trouble and annoyance over this case. He is a conscientious and painstaking physician. He had a patient who antagonized his best efforts. It is unfortunate that he did not relinquish the case at once. The risks connected with such cases ought to be pretty well known to the profession, and still they are not properly appreciated. All injuries in or near joints require very careful examination and treatment. The medical attendant should not submit to any interference on the part of the patient or his friends, and he should generally have a consultation with a brother practitioner, always when there is the slightest doubt as to diagnosis or treatment.

ONTARIO MEDICAL COUNCIL.  
CURRICULUM.

The committee appointed by the College of Physicians and Surgeons of Ontario, at its last regular session, to consider proposed changes in the curriculum, is, we understand, making a careful study of the question. The calendars of the best medical faculties from various parts of the world have been obtained, and their various requirements are being considered. The committee will probably find that no radical changes are required. The standard, in recent years, has been high, and will compare very well with that of any country in the world. We do not, of course, refer to such Universities as that of London or Edinburgh, or many of those on the Continent, but rather to the standard of a license to practise in the various countries. Ontario is undoubtedly ahead of any of the United States in this respect.

The *New York Medical Record*, in an article on "Cheap Doctors" (May 2), concludes as follows: "The defects in the American system of medical education are, (1) Too little preliminary education, and thus a lack of ability to grasp scientific principles. (2) Too much didactic work by teachers. (3) Too little clinical work by the students. (4) Too few tests of practical work. (5) Too short a time of actual work and study. . . ."

It seems that the evil effects connected with excessive didactic teaching at the expense of practical laboratory and hospital work are prin-

cipally confined to this continent and the serious defects in regard to preliminary education chiefly to the United States. The character of the "Leaving Examination" recently instituted by the Minister of Education, and the high standard to be required in the same, are likely to prove eminently satisfactory in Ontario.

#### MEDICAL ALUMNI ASSOCIATION OF THE UNIVERSITY OF TORONTO.

The re-establishment of a medical faculty in University of Toronto has caused much satisfaction among her graduates, as well as the general profession of the country. The Medical Alumni Association was formed May 25th, 1888, with Dr. Richardson, of Toronto, the first President. On that evening the first dinner was held in the Queen's Hotel, the President and 1st Vice-President occupying the chair and vice-chair respectively.

At that time, we expressed the opinion that the Association had a bright future before it, and we rejoice to see that our anticipations have been amply verified. The recent meeting held in the lecture hall of the School of Practical Science, May 6th, at the close of the Medical Convocation, was a large and enthusiastic one. On the same evening there was a banquet in Mr. Harry Webb's dining hall, which was remarkably successful in all respects.

#### Meeting of Medical Societies.

##### THE TORONTO MEDICAL SOCIETY.

April 23rd, 1891.

The President, Dr. Spencer, in the chair.

Dr. Machell showed a patient suffering from a  
TUMOR IN THE RIGHT INGUINAL REGION.

The patient, Mr. M., æt 24, had been first seen towards the end of March; he was then suffering from a tumor situated just internal to the right anterior superior spine of the ilium; it was hard and brawny, but not tender. The history given was that in November, 1890, he had a bilious attack; vomiting occurred, followed by acute pain in the right inguinal region. He was confined to bed for a few days, and on getting up there was a lump in the region referred to, but

the soreness had disappeared. From November until March he continued at business, with occasional attacks of discomfort lasting a day or two. On advice of Dr. Machell, he laid up and has remained in bed for the last two or three weeks. The result has been that the mass has diminished in size, and is not tender, but there is distinct fluctuation at one point, and it is proposed to open there by a free incision. The diagnosis seems to lie between inflammation of the glands in the neighborhood; appendicitis or perityphlitis with abscess formation opening outwards; or an affection of the bone. The vomiting and acute symptoms all point towards appendix disease. We do not always find suppuration in appendix disease, in fact it may go on for months without pus formation; then again, appendix disease may go on for months without any very definite symptoms. Probably the present case is one of those chronic forms of appendix disease producing no very definite symptoms.

Dr. J. F. W. Ross does not think the history is that of appendix disease, at all events as it usually presents itself. Some cases of severe strain, causing localized peritonitis, occur. Many cases are deceptive in the signs presented. Rupture of a blood-vessel, muscle, etc., by severe strain, may give rise to suppuration, as in a case cited occurring in a lacrosse-player. The abscess in Dr. Machell's case is unusually low down for the appendix. The diagnosis seems to lie between rupture of the appendix from some severe strain and rupture of muscle, blood-vessel, etc.

Dr. Powell referred to a case of appendix disease with suppuration; no fluctuation detected in the iliac fossa, but a sinus formed which eventually opened at the umbilicus.

Dr. Macdonald thought Dr. Machell's case closely resembled one which had come under his care, in which the deeper glands were found to be involved. The suppuration was slow to occur.

Dr. Machell, in reply, stated that the source of the suppuration would not be easy to detect even after opening the abdomen. The history of the case does not point to glandular trouble. The position of the tumor is not lower than Dr. Machell has seen it in appendix disease.

Dr. J. F. W. Ross exhibited a

VERMIFORM APPENDIX REMOVED DURING  
OVARIOTOMY.

There were dense adhesions and ascitic fluid present in the abdomen; the ovarian cyst, for which the operation was undertaken, was multilocular and suppurating. The vermiform appendix was brought up into the wound, and it bled so profusely and persistently that it was deemed advisable to pass a ligature around it and to remove it. The peritoneal surfaces were brought together, as mucous surfaces will not unite.

Dr. Ross also exhibited a specimen of

## INTESTINAL ANASTOMOSIS IN A DOG.

An operation had been performed in which six inches of intestine were first removed, and then an operation for the establishment of intestinal anastomosis performed. The dog died after three weeks, and the specimen exhibited shows the establishment of the anastomosis.

Dr. Macdonald reported a case of

CYSTIC SARCOCELE—SECONDARY GROWTH IN  
THE LIVER.

A man came to Dr. Macdonald eight years ago (the patient was twenty-five years old at the time); there was no history of syphilis, and he had a good family record. About a year before coming to Dr. Macdonald, he had received an injury to the testicle while riding. Pain resulted, which continued for a year and then a swelling appeared; there was fluctuation in one or two points in the testicle and in the cord. Dr. Macdonald removed the testicle and a good recovery followed. Subsequently he strained his back whilst lifting a heavy weight; this was followed by fever, thought at the time to be malarial; others thought he had spinal disease, but the case was obscure. During the middle of last summer Dr. Macdonald was called to see him, and detected a tumor on the left lobe of the liver, hard, and to a certain extent movable. Dr. Macdonald made an incision and found a tumor involving the left lobe and the under surface of the liver, removal was impossible. An unfavorable prognosis was given, and the man died. A *post mortem* examination could not be obtained.

April 30th, 1891.

The Vice-President, Dr. A. A. Macdonald, in the chair.

Dr. J. E. Graham showed a patient suffering from

RIGHT FACIAL PARALYSIS, WITH PARALYSIS OF  
THE RIGHT ARM AND LEG.

The following history was given: Miss B., æt. 23, one night three weeks ago went to bed well, and on the following morning she found that the right side of the face was paralysed, as were also the right arm and leg. This kept getting gradually worse for a week, and she then consulted a doctor, who referred her to Dr. Graham. It was noted that the patient had not the ordinary paralysis of the face of hemiplegia, because in her case the orbicularis palpebrarum is paralysed and she cannot wrinkle the brow on the affected side. She also has complete hemianæsthesia of the right side of the face; the anæsthetic area extends beyond the distribution of the fifth nerve, and includes the back and upper part of the head. There is absence of smell and taste on the right side; partial paralysis of the right arm and leg. Increased knee-jerk on both sides, but perhaps more marked on the left. There is complete anæsthesia of the right side. The sensations of heat and cold have not yet been tested. The Faradic current produced little or no effect on the paralysed side of face. With the galvanic current the qualitative reactions on the affected side were abnormal—acc. > ccc. The reactions normal in the right arm and leg. The uvula does not appear to be affected. There is right-sided deafness, without any organic ear disease. Tactile sensation is lost in the hand; there is no dysæsthesia and no optic neuritis. For the first few days after the onset of symptoms the temperature was slightly elevated. The case is somewhat obscure. 1. It is not an ordinary lesion of the internal capsule of the opposite side, because if it were so the orbicularis palpebrarum and the muscles of the forehead would not be paralysed, nor would there be anæsthesia. 2. A lesion in the anterior and upper part of the pons on the left side, if sufficiently extensive, might account for the anæsthesia and paralysis of the face and side, but would not account for the paralysis of the orbicularis palpebrarum, and of the occipito-frontalis muscle. 3. The only explanation seems to be that of a lesion in the facial nerve as it passes through the aqueduct of Fallopius, and the neuritis passing back so as to involve

the portia mollis in the internal auditory meatus. This might account for the loss of taste also. Thus we may look upon the paralysis of the facial as due to an organic lesion, and probably the other paralyzes are due to some functional (hysterical) cause.

Dr. Reeve had seen and examined the patient; he was surprised to find manifestations of such an extensive central lesion and the apparent implications of centres widely separated; he was inclined to conclude that it could not all be organic trouble. The field of vision for white and colors was reduced in both eyes with partial anæsthesia of the conjunctiva and the cornea. She had facial paralysis and fifth nerve paralysis; the temporal muscle seemed partially affected; there was no optic neuritis. The eye symptoms seemed in part to point to a condition of crossed amblyopia. The fact that there was no history of convulsions or unconsciousness militated against lesion in the pons. Paralysis of the portia dura might occur in the nerve trunk as readily as in the centre. When Dr. Reeve saw the patient a second time he thought the diagnosis was cleared a little. The suspicious points then elicited were: 1. She complained of pain right in the centre of the mastoid process, where there is no branch of the fifth nerve. If it had been just behind the insertion of the concha, it might have been due to irritation of the fifth, a condition not uncommon. 2. On asking her about the hemiplegia, she stated that she had not observed it until the medical man called her attention to it. 3. It was now discovered by the use of lenses that the sight of the right eye was as good as the left, and that of the left was normal, though the patient now complained that it was defective. Whilst we may therefore consider the hemiplegia to be functional, it is very unlikely that the facial paralysis is other than organic.

Dr. Graham said that Gowers states that we never get hysterical paralysis of the orbicularis palpebrarum.

Dr. Graham then read a paper on

#### A CASE OF CEREBRAL ABSCESS,

which appears on page 227 of THE CANADIAN PRACTITIONER.

In the discussion which followed, Dr. Macdonald referred to the difficulty of obtaining a

correct history in this case; the man was unconscious on admission to the hospital. The vital point was the choice of the place at which to open the skull. Looking back now, it appears evident that a mistake was made in opening the skull on the right side. The absence of shock after the operation was noteworthy, although chloroform had not been administered.

Dr. Reeve, in answer to a question, stated that optic neuritis was a later development and would not be expected to be present in a recent case such as the one under consideration. Showing the insidious and latent character of some of these cases he cited a case which he had reported some years ago of cerebral abscess the size of a small orange, occurring in the temporo-sphenoidal lobe in a lad. Up to three weeks before death there had been absolutely no signs of brain trouble. The abscess was apparently secondary to a long-standing otitis. On *post mortem* examination the middle cranial fossa was found healthy; there was no caries, the dura mater was healthy, and there was no direct communication apparent between the ear and the abscess in the brain. In this case there had been no sensory or motor disturbance, and for only a few days before death were there any symptoms pointing to serious brain trouble. There was optic neuritis and a foetid discharge from the ear, with caries in the tympanum. This case presented some features of interest bearing on the pathology. There was a capsule one-quarter of an inch thick in which were large blood-vessels, and the contents not ordinary pus, but greenish mucoïd material intensely foetid; this was probably a chronic abscess of long-standing. Immediately outside the capsule was an area one-third of an inch thick of softened brain substance, and outside this again the brain matter immediately surrounding was cedematous. The quotation which Dr. Graham had made from Fagge requires to be modified somewhat. A thin capsule can form in two weeks and a very dense one in six weeks. A case has been recorded of abscess from traumatism in which a capsule had formed so dense that on passing a knife the capsule was not penetrated, but was pushed before it; this caused increased pressure within the cavity, which resulted in rupture of the inner wall of the abscess into the lateral ventricle, causing

instant death; the wall of the abscess was very thick and dense.

Dr. Millman spoke of two cases of cerebral abscess which came under his observation in the London asylum for the insane. One of multiple patient suffering from acute mania; abscesses in a he was subject to periodical attacks of excitement, and it was surmised that each of these attacks indicated an abscess formation. There was no history of pyæmia. The second case was that occurring in a girl, who was admitted with acute mania, from which she completely recovered, and was subsequently engaged as a laundress in the institution. Sometime after this she suddenly became very ill and developed symptoms of serious brain trouble, from which she died. At the *post mortem* examination one side of the cerebellum was found to be almost entirely occupied by pus, and a portion also of the opposite hemisphere was affected. The vermiform process was not involved, and this probably accounted for the fact that she had had no impairment of co-ordinating power.

Dr. Machell asked Dr. Graham if, on a careful study of his case, he has learned anything to aid him in dealing with a precisely similar case in future.

Dr. Pepler asked if the paralysis on the right side was not a more important indication for opening the skull than was the spasm of the left side and the seat of the external injury.

Dr. Acheson remarked that we never have suppuration occurring without the presence of organisms, and in that light it seems that the abscess in Dr. Graham's case had nothing to do with the blow on the skull. The great majority of cerebral abscesses must be due to pyæmia, or from direct infection from some evident source.

Dr. Peters stated that when a blow on the head is inflicted at one point the brain is bruised at a point immediately opposite, *i.e.*, on the opposite side of the head; it is stated that if these cases be seen *post mortem* soon after the infliction of the injury, a path of bruised tissue can be detected across the brain substance, from the side upon which the injury was received to the damaged brain upon the opposite side. In studying the location of the external injury in Dr. Graham's case, it being high up on the right side, we would expect the damaged cerebral centres to be about the arm centres on the left side

of the brain. The fact that the cranial contents are injured in this way has been borne out by experiment, filling a skull with paraffin and inflicting a blow; the injury to the paraffin is on the opposite side to that on which the injury is received. As to the occurrence of suppuration, the great bulk of evidence goes to show that it is due to the injury; the bacteria have been carried by means of the blood and find a suitable nidus for their growth and development in the damaged brain tissue. The occurrence of the abscess in the temporo-sphenoidal lobe secondary to suppurative otitis, referred to by Dr. Reeve, is explained by the investigations of Schwalbe, who injected fluid under the scalp, and has been able by this means to demonstrate a continuous lymphatic connection from the scalp into the interior of the brain. The infection therefore spreads along the lymphatics. Instruments of a special kind are necessary for brain surgery. Horsley uses a trephine of large size,  $1\frac{1}{4}$  inches in diameter. He opens the skull with this, after turning down a large flap of the scalp and pericranium, and having previously marked the part of the skull he wishes to remove by indenting it with an awl driven by means of a mallet into the skull. The trephine hole having been made, a large area of the skull is sawn through the outer table by means of a Hey's saw; an area, say two inches by three inches, is thus mapped out around the trephine hole. A series of radiating saw cuts are similarly made from the trephine hole to the margin of the area mapped out. Then the portions of bone are removed by means of strong bone pliers along the lines of the saw cuts. This is a rational method of operating; by it a large area of dura mater is laid bare, and one has an opportunity of comparing healthy tissue with damaged; this is, undoubtedly a great advantage.

Dr. Carveth narrated the history of a man admitted to the Toronto General Hospital some years ago suffering from an apparently insignificant scalp wound. He did well for a time, but subsequently developed brain symptoms, and on the fourteenth day was trephined; no pus was detected. On *post mortem* examination an abscess was found on the opposite side of the brain to that on which the scalp wound existed. A further lesson learned from such a case as this is not to treat lightly any case of scalp wound.

Dr. Gordon asked Dr. Graham how he accounted for the fact that a cerebral abscess may exist for months or years without presenting any marked symptoms of serious brain trouble.

Dr. Hamilton spoke with reference to the close relationship between suppurative ear diseases and the development of brain abscess.

Dr. A. F. McKenzie asked a question as to the administration of anæsthetics in these cases. We want to avoid shock, and are we right in discarding the anæsthetic?

Dr. Graham, in reply, thought the experience gained by a consideration of the case reported was valuable. There was some difference of opinion at the consultation as to the side upon which the skull should have been trephined. The case referred to by Dr. Carveth would have been a useful guide in the present instance; the cases, however, are hardly analagous, as the patient under Dr. Graham's care was unconscious on admission, and therefore an accurate history could not be elicited from him. Abscesses, the result of pyæmia, as referred to by Dr. Acheson, are usually multiple, and there is some previous deterioration of health. Dr. Graham considered Dr. Peter's explanation a good one, as to the occurrence of the abscess on the opposite side of the brain. He thinks that an abscess even with bacteria present may exist for months or years without developing symptoms, just as we have similar occurrences in other parts of the body. Dr. A. F. McKenzie's question is interesting and important, but difficult to answer. There would presumably be no special objection to the administration of chloroform in such a case.

## Hospital Reports.

### PULMONARY PHTHISIS, ACCOMPANIED BY ACUTE MILIARY TUBERCULOSIS.

UNDER THE CARE OF A. A. MACDONALD, M.D., IN TORONTO GENERAL HOSPITAL.

[Reported by T. S. Cullen, M.B.]

James Taylor, mason, æt. 23; history, March 7th.

*Family history good.*—Was never sick before. Last May took cold, and complained of sharp pain in infra-axillary region on left side.

Coughed a little; was feverish in afternoons, and perspired at night; gradually lost weight, but had no diarrhœa.

*Present condition.*—Christmas, 1890, emaciated and anæmic.

*Respiratory system.*—Inspect.: Depression in supra and infra-clavicular regions on both sides; diminished expansion over both lungs.

Palpation: Vocal fremitus increased on both sides.

Percussion, right lung: Dullness in supra-clavicular mammary, supra-mammary, and axillary regions. Hyper-resonance in infra-clavicular region.

Left lung: Dullness in supra and infra-clavicular regions, also in infra-axillary area.

*Auscultation.*—Right lung: Breathing tubular in supra and infra-clavicular regions. Broncho-vesicular in mammary, infra-mammary, and axillary regions. Moist rales in supra and infra-clavicular regions.

Left lung: Tubercular breathing in supra and infra-clavicular areas; a few moist rales over same regions.

*Examination of back of chest.*—Vocal fremitus increased on both sides.

Percussion: Dullness over whole of both lungs.

Auscultation, right side: Broncho-vesicular breathing, accompanied by a few moist rales, in supra-scapular region.

Left side: Bronchial breathing in supra-scapular area.

Sputum: Amount small; nummular mucopurulent, contains numerous tubercle bacilli.

*Circulatory system.*—An apical presystolic murmur, mitral obstructive. Pulse, 108, full and strong; temperature, 100°, a.m.; slight perspiration. Tongue large and flabby; appetite poor; bowels constipated; sleeps well.

On January 26th, .0015 cc. of Koch's lymph were injected; the reaction was not marked, and lymph was persisted in until .018 cc. were injected at once. From the first the weight diminished; on only one or two days did it go beyond that of the preceding day.

About the middle of March diarrhœa commenced; this was persistent, requiring frequent doses of pil plumbi c. opio. During the last week the temperature ranged from 98 $\frac{2}{3}$ ° to 101°. Death occurred April 6th.

P.S.—About March 20th a cavity was diagnosed in left apex.

*Post mortem.*—April 20th, Dr. Caven: Nutrition poor; p.m., staining well marked, rigor mortis fair; muscle pale and very scanty.

Heart: Weight,  $\bar{3}10$ ; pulmonary valves fenestrated.

Lungs, left: Large cavity in apex, accompanied by dense pleuritic adhesions.

Right: Lung solid, greenish white, densely infiltrated; a few small cavities near apex. The pleuræ were so glued that it was impossible to separate them without dissection. At the base was a circumscribed pleurisy, the sac containing two ounces of fluid (serous).

Spleen: Weight,  $\bar{3}6\frac{1}{2}$ ; contained a few small tubercles.

Kidneys: Right, weight,  $4\frac{1}{2}\bar{3}$ ; small miliary tubercles. Left, weight,  $5\frac{1}{2}\bar{3}$ ; also contained tubercles.

Stomach: Revealed a state of chronic inflammation.

The small intestines: Contained numerous small ulcers running in the short axis of the bowels, the bases and margins of these being indurated; tubercular. When knuckles of intestines met, small miliary tubercles were found.

Some of the mesenteric glands were three-quarter inches in diameter.

Liver: Weighed  $3\frac{1}{2}$  pounds; showed fatty degeneration, and contained miliary tubercles.

*Post mortem diagnosis.*—Pulmonary phthisis, accompanied by acute miliary tuberculosis.

## Pathology.

### THE EXAMINATION OF THE BLOOD FOR LAVERAN'S MALARIAL GERM.

Laveran's directions for examining the blood of malarious patients are as follows: The blood should be taken at the height of a fever attack, and from a patient who has had no quinine for some time. The blood should be taken from a finger tip after a thorough cleansing of the skin to be pierced. The cleansing should be such as to prevent all chance of contamination of the blood as it oozes out. The drop so obtained is to be taken up on a clean cover glass, and a second cover placed upon it, so that a thin layer of blood may be obtained between two cover

glasses. This fresh preparation is then to be examined by daylight and with a dry lens of high power. In this way one will oftenest be able to see the flagella on the periphery of the round pigmented free corpuscles. If a dry preparation be desired, then the cover glasses must be separated from one another and the blood dried by passing the cover glass three times through a flame. The specimen can then be examined either unstained or stained. Laveran stains with a concentrated watery solution of methyl blue, before using which, he washes the cover in a mixture of equal parts of alcohol and ether. By this method the nuclei of the white blood corpuscles are stained dark blue, the free round bodies, or those attached to the red blood corpuscles, a pale blue, while the still growing corpuscles stain hardly at all. For specimens so prepared, Laveran recommends dry lenses also.

J. C.

## Pamphlets Received.

*A Dermatological Bibliography.* Compiled by George Thomas Jackson, M.D., New York.

*Lovell's Historic Report of Census of Montreal.* Taken in January, 1891.

*Plain Talks on Medical Electricity and Batteries.* By Horatio R. Bigelow, M.D.

*Modern Antipyretics—their action in health and disease.* By Isaac Ott, M.D., Ex-Fellow in Biology, Johns Hopkins University. E. D. Vogel, publisher, Easton, Pa.

## Personal.

It is announced that Dr. Sloan, of Blyth, is about to remove to Toronto. On May 4th he was presented with a gold-headed cane and an easy chair by a number of his friends in Blyth.

DR. H. SCOTT, of St. Thomas, has removed to Ingersoll, where he will practice in future.

DR. STEPHEN LETT, of Guelph, attended the meeting of the American Medical Association at Washington, and read a paper on "The Opium Habit."



DR. DANIEL CLARK, Superintendent of the Toronto Asylum for Insane and Professor of Psychology in the Medical Faculty of the University of Toronto, was elected President of the Association of Medical Superintendents of Insane Asylums of America at the meeting recently held at Washington, April 28th.

DR. GEORGE ROSS, Subdean of McGill Medical College, has been in poor health for some months. He has required assistance in his school work, and in his professional work he now confines himself to consultation practice.

DR. B. L. RIORDAN, of Toronto, has organized an ambulance corps composed of employees of the Grand Trunk Railway, and is giving a series of lectures and demonstrations.

THE Rev. Dr. Hooper, who has been superintendent of the Kingston General Hospital for the last four years, has resigned, and will shortly move to Toronto.

PROFESSOR RAMSAY WRIGHT, Professor of Biology in the University of Toronto, after being engaged at work in Koch's laboratory for

some months, has gone to Paris, where he will spend a few weeks in Pasteur's Institute. He will sail for Canada, June 4th.

## Obituary.

DR. GEORGE SOUTHWICK, of St Thomas, died suddenly, May 6th. He received his license to practice from the old medical board in 1835, and was about 86 years of age. In his younger days he took much interest in public affairs, and for a time represented the county of Elgin in the old Parliament of Canada.

## Births, Marriages, and Deaths.

### BIRTHS.

FREEL.—At Brougham, on Monday, April 27th, the wife of Dr. J. E. Freel, of a son.

MACHELL.—At Toronto, May 6th, the wife of Dr. H. T. Machell, of a son.

### MARRIAGES.

TYRRELL—GRANT.—On Wednesday, Apr. 29, Rebecca (Appa), daughter of the late Wm. Grant, of Inverness, Scotland, latterly of Kingston, Ont., to J. D. Tyrrell, M.D., of Toronto.

1891

## Medical Council Election

FOR THE BURLINGTON AND HOME DIVISION.

*Election to take place on the 27th May, 1891.*

Extracts from the By-law for conducting the elections of the Medical Council of Ontario:

"That any member of the College of Physicians and Surgeons of Ontario presenting himself for election as a representative to the Medical Council for the Territorial Division of Burlington and Home must receive the nomination of at least twenty registered practitioners resident in such division, and that such nomination paper must be in the hands of the Returning Officer for the Division not later than two o'clock on the afternoon of Wednesday, May 13, 1891.

"In the event of only one candidate receiving such nomination, it shall then be the duty of the Returning Officer to declare such candidate duly elected.

"That the Registrar shall send to every registered member of the College entitled to receive the same a voting paper (in accordance with residence given on register) by Wednesday, the 20th May, 1891.

"Any member of this College not having received a voting paper by Wednesday, the 20th May, 1891, when more than one candidate has been properly nominated for the Division of Burlington and Home, will send by post to the Registrar his or her name and address, and a voting paper will be forwarded at once for the Division."

Certified a true copy of extracts from By-law passed by the Medical Council of Ontario.

By Order,

R. A. PYNE, Registrar.

College of Physicians and Surgeons of Ontario, S. E. Corner Bay and Richmond Streets, Toronto, Ont.

## ONTARIO MEDICAL ASSOCIATION.

ELEVENTH

## ANNUAL MEETING

*JUNE 3rd and 4th, 1891.*

THE ELEVENTH ANNUAL MEETING of the above Association will be held in the City of Toronto, on WEDNESDAY and THURSDAY, June 3rd and 4th.

All duly qualified practitioners attending this meeting will obtain Return Tickets at one and one-third fare.

Gentlemen desirous of reading papers or presenting cases before the Association are requested to notify the Secretary by the 1st of May at the latest, of the title of such paper or case, for submission to the committee on papers and business.

W. H. MOORHOUSE, *President*, London.

D. J. GIBB WISHART, *Gen. Secretary*,  
47 Grosvenor Street, Toronto.