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CANADA MEDICAL JOURNAL.

ORIGINAL COMMUNICATIONS.

Bony fragments in the brain, resulting abscess. death five years after.
History of the Case. By J. B CHAGNON, M.D., St Pie, Province
of Quebec.

On the 6th of July last, I was called to attend Mrs. O. C., an American woman of a nervous constitution. Her general appearance was unhealthy. Said she was eight and a half months pregnant. Her present illness seemed to be that of severe neuralgia. Accordingly large doses of morphia were administered, and ethereal applications were constantly made on the seat of pain, which was the left anterior part of her head. I left my patient two hours after, with hardly any pain. I did not hear from her for a fortnight, when I confined her of a healthy child. Everything went on well during and after the accouchement.

On the 7th of August, sixteen days after her confinement, I was called again to attend her for what was thought, and seemed to be, neuralgia in the head.

I found her lying upon her back with the expression of most excruciating pain, constantly imploring some one to press and squeeze her head with both hands; pulse unnaturally slow, counting from forty to forty-five in a minute. Tongue much loaded with a whitish coat. The appetite was good, and all food swallowed was relished. The skin was moist and there were no signs of fever whatever. Urine natural in quantity and colour after being just voided, but loaded with a yellowish white mucous sediment after standing a while. Auscultation and percussion did not reveal any lesion in the vital organs of the chest. The character of the pain was lancinating and throbbing, radiating from the superior anterior angle of the left parietal bone, where it was most intense, towards the longitudinal suture, specially on the left side of it. The state of her mind was good until last. She paid no attention to noise; in fact, she seemed to be pleased with it, for she could not be induced to remove from her room, which was adjoining the kitchen to a more quiet place.

She enjoyed company between paroxisms which were most severe, especially at night; she, however, could not bear light of any kind, and her room had to be constantly kept dark.

Her strength during remissions was such as to permit her to leave her bed. Even twelve hours previous to her death, she walked to the kitchen and warmed her feet by the stove.

These symptoms (besides another one of which I shall speak hereafter) to which she was subjected, were constant in character and intensity until the last. She died on the 29th of August. This fatal event took place most unexpectedly. After the most severe of all the paroxisms she had had, as she expressed herself, "it bored her brain through," she suddenly dropped as in a tranquil slumber, but it was her last; she was a corpse.

As to treatment, it was pursued most vigorously. Morphia in large doses, even to one grain in one instance, gave her but three hours sleep.

Hypodermic injections seemed to be more beneficial than when opium was taken by the stomach.

Hydrate of chloral in 30gr., and in two instances 40gr. doses seemed rather to excite the nerves than to quiet them. Five doses of quinine of 8 grs each, taken at intervals of five hours, brought considerable relief to her pain.

Ammoniated tincture of Lupuline was tried with no benefit. Chlorodyne could not be borne on the stomach. By the way, I may say that the first day I attended Mrs. C. in her last sickness, she had had nausea, for which I gave her 20 grs. of Ipecac which relieved her; she never vomited after.

Bromide of potassium in 20gr. doses seemed to have no effect whatever. External and local applications were not neglected. Mustard, chloroform, ether, veratria, aconite, bisulphide of carbon were all successively employed; so also cold and warm fomentations, but all these proved of very little benefit to her.

In order to give all the interest which this case deserves, I must present to the attention of the reader the incidents of the five years previous to her last illness.

As just said, five years ago (date being unknown) whilst raising her head from the stooping posture close to a door, she struck it on the latch. The result being a lesion on the left superior and anterior part of the scalp. As the injury was regarded of no moment, no medical man was called, and healing took place after five weeks with a small amount of suppuration.

About ten months after, she had three convulsions of an epileptic

character in the same day. Dr. Gilmour, I believe, was called and relieved her. She was confined a fortnight after, and early convalescence took place. Since that time she was almost constantly troubled with flashes of light floating before her sight; sometimes they were red in appearance, sometimes blue, less frequently versicolour.

About one year after, she had another epileptic fit which did not last very long. In the mean while, Dr. Drake, of Montreal, was consulted and prescribed for her, on two or three occasions. As it was impossible for this gentleman to be in permanent attendance on the case, I took charge of it, and in that very same year 1868, I confined her of a very healthy child. This time, convalescence went on as usual with no untoward symptoms. Eight months subsequently, she had two more convulsions in the same day, and they were the two last she had, making in the whole period of five years, the small number of five.

The 4th of June of same year, she was taken sick with peritonitis on account of an inguinal strangulated hernia which was readily reduced by taxis, and inflammation treated on common principles, with success; but convalescence being lingering, I gave her, on account of anemia and nervous weakness, the Cit. of iron and quinine for the period of six weeks.

She mended considerably in strength and cheerfulness by that course of treatment, periodically repeated. On the 19th of March, 1869, she was suddenly attacked with violent twitchings all over the face which lasted all the day, but no regular epileptic fit followed. I accordingly put her on potassium treatment; adopting *Brown Sesquard Anti-Epileptic mixture*.

This she continued to take until October following, when I applied a seton on the back of her neck. She kept it in for two months with apparently good effect. I lost sight of her then until July 6th, 1870, being the date mentioned at the beginning of the description of the case.

Autopsy thirty-six hours after death.—In my presence, Dr. Bergeron, graduate of McGill College, proceeded in the usual manner, to the examination of the brain. The first incisions of scalp revealed great congestion in all the vessels concerning the head. The dura mater was strongly adherent to the bone. No trace, old or recent, of any injury to the head could be thought of by looking at the inner table, so smooth and healthy was its appearance. Three or four ounces of blood were found at the base of the brain. Dura mater unusually hard and thick. A good-sized flap being made on the superior part of the right side, no red puncta were to be seen; and the white substance was very

soft, resembling more pancreatic emulsion than brain substance. No effusion of serum was found in the lateral ventricle of that side. Another flap about the thickness of four lines, having been lifted up from the other lobe, an abscess the size of a pigeon's egg, containing sanious pus, was found. Several fragments of bone were floating in it, two of them were the size of a common pea. The course of the abscess was parallel to that of the fissure of Sylvius, this last forming its lower floor. By cutting a little further on, the matter was seen to have made irruption into the corpus callosum and adjoining parts. The extravasation of pus had evidently been sudden, as demonstrated by the torn appearance of the lining of the abscess there; and this was probably the cause of the sudden death. The remote and immediate cause of death being determined on, no further examination was made.

Remarks.—Although the case here narrated may not possess the merit of novelty, for many cases of the same nature have been reported, yet it will serve to illustrate whatever certainty or uncertainty may exist in the diagnosis of this class of brain affections. The brain being such a compound organ as regard to its parts and their different functions, that any lesion of those parts will be accompanied by symptoms correspondingly different. Thus any case of this nature if carefully reported, cannot miss to be of some help not only to students, but also to practical physicians, specially if verified by post-mortem-examination.

Although this case may generally be considered as not uncommon, it, however, presents some facts truly interesting to a faithful observer:—

1st. That lesions of the cerebral hemispheres, however extensive they may be, do not necessarily arrest the natural functions of the mind, provided the cortical layer is healthy, and is connected with the thalami by nervous fibres that have not yet undergone the process of softening.

2nd. That the impression received to the thalamus and striatum is slowly elaborated there on account of its slower communication through the influential arc caused by deficiency of power of those fibres; hence the slowness of conception with persons having softening of the brain.

3rd. That although physiologists are generally willing to attribute mental capability in proportion to the volume and development of the cerebrum, we are not to overlook that it is like other organs, of a simple instrumental nature. The mode of action being an instrument, of course if that instrument becomes absolutely imperfect, the action becomes imperfect too; but on the other hand, if that instrument preserves a certain amount of power, impressions given to it will be slowly and effectually brought to their final purpose. This, therefore, is in my

humble opinion, why in this case, the mind was intact to the last, although the white softening must have reduced considerably its volume if we look at it as a cause of mental power.

Now, another question may arise, whether that woman could have been saved, if trepanning had been performed at the first epileptic seizure. M. Flourens, in a communication to the *Academie of Sciences* in Paris, relates a case nearly resembling the present, except the date of the first bad symptoms, which was nearer from the injury, being the 25th day after trepanning was performed, a large abscess made its way out and the patient was saved. He related another case of a young man from whose skull a large amount of brain substance issued, without at all impairing his mind, proving thenceforth that it is not so much the volume and weight of the brain that incapacitates the mind, but then a special endowment to the intellectual principle given by the Creator of all things.

We do not hold ourselves responsible for the opinions of contributors.—Eds.

HOSPITAL REPORTS.

SURGICAL CASES OCCURRING IN THE PRACTICE OF THE MONTREAL GENERAL HOSPITAL, UNDER THE CARE OF G. E. FENWICK, M.D.

Case 1. — Myeloid disease of the Femur—Amputation of Thigh—Acupressure—Secondary Hemorrhage—Recovery. Reported by
Mr. JOHN H. MATHIESON.

Walter Smith, *æt.* 26, married, of spare-habit, fair skin, red hair, and formerly a farmer, but for the past few years employed in an engine house, was admitted into the Montreal General Hospital August 15th, 1870, with disease of the lower extremity of the right femur. His constitution, though not strong, has never suffered from any severe illness.

About a year ago, he first noticed sharp pricking pains in the right knee, with nocturnal exacerbations. The joint gradually became weaker, and a false step, a slip, or any trivial injury, was followed by great pain and lameness, lasting sometimes for several days. No excess of heat, swelling or discoloration, however, was noticed. On the 25th of December, 1869, he got a kick from a colt in the popliteal space; the knee swelled up almost immediately to an enormous size. A surgeon was sent for, who pronounced it dislocation of the knee (?), and reduced it by

twice flexing the leg upon the thigh (!). The limb was then bandaged, and cold lotions applied to the knee for five days, after which a liniment was used. Ten days afterwards the swelling was considerably reduced, but has never wholly disappeared.

The joint is now very much enlarged, the limb bent outwards at the knee more than its fellow, and the leg flexed upon the thigh at an angle of about 135° . Flexion and extension can be performed without giving pain, and a firm blow on the heel can be born well. The tumour is firm, oval in shape; the temperature not perceptibly elevated, and the colour of the skin normal; running over its surface are several enlarged veins. By grasping the thigh firmly in one hand, and the knee with the other, motion may be produced at the upper extremity of the tumor, at the point where it terminates in the shaft of the femur, this resembles much an ununited fracture. Pain of the same character as first noticed still continues, but it is more severe. Dr. Fenwick stated that he regarded the case to be one of myeloid disease involving the lower extremity of the femur, and advised amputation at the lower third.

August 16th.—A consultation was held, and it was decided to amputate. The patient was put under the influence of chloroform, Dr. Drake compressed the femoral artery, and Dr. Fenwick began the operation by carrying an incision through the skin and subcutaneous cellular tissue, from a point on the inner side of the thigh, about six inches above the knee, downwards, over the upper part of the patella, and up again on the outer side of the thigh to a point opposite the place of starting; and, dissecting from the knee upwards, he formed a long anterior musculo-cutaneous flap. He then, in a similar manner, formed a short posterior flap. The flaps were retracted, the femur swept by the knife and sawn through. Four arteries were secured by acupressure, the femoral and anastomotica magna were secured according to the third method described. The flaps were sponged with carbolic acid lotion, and the edges brought together by interrupted wire sutures. Carbolic acid dressings were applied.

Examination of the diseased joint.—There was a large amount of synovia, and the synovial membrane was a little thickened. The patella, articular surface of the head of the tibia, and the articular fibro-cartilages were healthy. The extremity of the femur was very much enlarged—the external condyle more than the internal—and the intercondyloid notch obliterated. The tumor was firm, very slightly elastic, and freely moveable at its point of attachment to the shaft of the femur. A section was made dividing it into two lateral halves. The shaft of the bone was quite healthy, and terminated abruptly after entering the

tumor. The extremity of the bone was expanded into an ovoid sac or cyst, the diameters of which cut the axis of the femur at an angle of 45° , and measured four and a-half, and three and seven-sixteenths inches, respectively. The walls of the cyst were formed by a thin, flexible lamella of bone, and, at the extremity, the articular cartilage. A small portion of the periosteum on the outer condyle was congested and slightly thickened; the articular cartilage was healthy. The interior was firm, of a mottled grey colour, with several brown ecchymosed patches. The diseased substance extended up the medullary canal for about a quarter of an inch, and terminated abruptly.

Microscopically it was found to consist of free nucleated cells containing granular matter; several similar cells contained in large, mother-cells like cysts in which also was free granular matter, blood corpuscles, and a few oil globules.

5 P.M. ($3\frac{1}{2}$ hours after the operation.)—Pulse 64 and feeble; he is drowsy, and has considerable nausea, but no pain; has not yet recovered from the effects of the chloroform and shock. There has been considerable oozing from the stump. Ordered milk diet, with two pints of beef tea, and two pints of milk, extra.

August 17th.—Pulse 134, surface hot and moist, tongue and lips dry, respiration easy, pupils slightly dilated; is quite cheerful. He got liq: morph: mur: 3 ss last night, and slept soundly for several hours afterwards. There is throbbing in the limb, and pulsation of the femoral is visible.

August 18th.—Pulse 124. He got morphia again, and slept well the greater part of the night. Two of the acupuncture needles were removed, and the dressings changed; the stump looks very well. He has not much pain, the pupils are normal, tongue clean, lips not so much parched.

August 19th.—Pulse 120, and full; skin cool, dorsum of tongue coated with a dark fur,—had two stools yesterday—no pain, but did not sleep any last night, which he ascribes to lying so long in the same position. Oozing from the wound has ceased.

August 20th.—Pulse 118. He slept soundly last night, and feels well to-day. Another needle was removed. There was a sense of fullness in the stump, and Dr. Fenwick took out one of the stitches and removed a large clot of blood, syringed out the wound with carbolic acid lotion, and applied strips of plaster. His appetite is good.

August 21st.—Pulse 108, and full. He has felt more comfortable since the removal of the clot yesterday, and slept well last night. The last of the needles, the one securing the femoral, was removed to-day at 11 a.m. It was noticed upon removing it, that the wire which was

around it moved very distinctly, its motions corresponding to the pulsations of the vessel, and it was deemed better to allow it to remain for a time. There has been a little oozing since yesterday.

3.30 P.M.—While raising himself on his elbow to have his pillow adjusted, he felt something give way in the stump, followed immediately by a sense of great heat. Before Dr. Rodger, one of the resident assistant surgeons, who was at once sent for, could get up stairs the blood was running out beneath the dressings. He compressed the femoral artery until a tourniquet was applied. The dressings were then removed, and iced applications put on the stump. Two horse-shoe tourniquets were applied, and pressure made alternately on each. He lost about $\frac{3}{4}$ vj of blood. The wire that had been around the needle was removed.

August 22nd.—Pulse 128, weak, and small. He is very comfortable, and does not find any inconvenience from the tourniquets, which are changed as soon as they give pain. He has no appetite, probably due in part to nervous agitation.

August 23rd.—Pulse 122, and much fuller than it was. He slept well last night. Several large clots of blood were removed from the wound to-day, and some clotted blood came away with the pus.

August 24th.—Pulse 108. No pain; slept well; tongue clean; appetite returning; bowels regular; wound looks well.

August 25th.—Pulse 110. Slept well and feels comfortable. There is a moderate quantity of laudable pus. The tourniquets have been kept applied, and the pressure gradually diminished, till this afternoon, when it was all removed, but the instruments left in situ.

August 26th.—He is doing well; there is considerable pus; no preternatural heat, redness, or tenderness. There is a considerable interval between the flaps, especially at the outer half of the wound.

August 27th.—He slept well; the pus is increasing. The pressure of the tourniquets, and the contraction of the muscles, had so retracted the edges of the flaps that they could not be easily brought together, and protrusion of the end of the bone threatened. A broad strip of adhesive plaster was applied to the thigh anteriorly and posteriorly, forming a loop over the end of the stump, and secured in its position by circular straps—to the loop a cord was attached, which passed over a pulley at the foot of the bed, and suspended a weight of four pounds. By this contrivance muscular contraction was overcome, and the edges of the flap could be brought in contact, and retained by strips of plaster. The tourniquets were removed.

August 28th.—Pulse 114. He has an attack of diarrhoea, which

began yesterday evening. He feels weak, and is very irritable. Ordered pil camph. co. one every fourth hour.

August 29th.—Pulse 110. The diarrhoea still continues, but he feels much better than yesterday. His appetite is good, and he asks for more solid food. The stump looks well.

6.30 P.M.—He was raising himself in bed, and suddenly experienced a sensation, as of something giving way in the stump, followed almost instantly by a gush of blood. Dr. Rodger was called immediately, and applied the tourniquets as before, making pressure with each, alternately. He lost about $\frac{5}{8}$ vij. of blood. Pulse 130, and very weak; extremities cold and pale; looks blanched. Ordered brandy *ad libitum*. Iced applications to the stump.

August 30th.—Pulse 120, and fuller. He slept about three hours last night. The tourniquets have been kept constantly applied. Dr. Fenwick resolved to open the stump, and ligate the vessel from which the hæmorrhage had come. Having put the patient under the influence of chloroform, he separated the flaps (union had taken place to a great extent at the inner side). The pulsation of the femoral could not be detected in the stump, nor was there any hæmorrhage. The wound was healthy and clean, and the surface covered with granulations. A portion of the end of the bone was found to be devoid of periosteum. He therefore removed about three-quarters of an inch of it, washed the surface with carbolic acid lotion, and closed up the wound again, using a few wire sutures and strips of adhesive plaster. Dressed as before with carbolic acid lotion.

8 P.M.—Pulse 116. No hæmorrhage. The tourniquets have not been applied since it was taken down.

August 31st.—Pulse 116. He slept very well last night, and feels well to-day. Diarrhoea has stopped.

September 1st.—Pulse 118. No pain; very little pus; appetite improving.

September 10th.—Pulse 100. He sleeps well, has a good appetite, tongue clean, and all the symptoms are favourable. The stump looks well, and there is but little discharge from it.

September 24th.—He is doing well, though the wound is healing slowly; the edges are somewhat inverted.

September 27th.—His health is good; there is very little discharge now from the wound. About three inches of the edge of the posterior flap is inverted. At the outer extremity of the wound the granulations are large and rather pale.

September 30th.—The flap pressed strongly against the end of the

bone, and it became rather prominent. Dr. Fenwick bound strips of plaster tightly around the thigh, which removed the pressure of the flaps from the end of the bone. Over these the bandage was applied tightly. His health is good.

October 6th.—The strips of plaster were removed, and fresh ones applied in the same way. There is very little pus. General health and appetite good.

October 9th.—The plaster was changed again. The outer part of the wound is healing. The granulations are reduced to the level of the surrounding skin, and are healthy. All is now united, except where the edges of the flap are inverted. His health is good, and he goes out on the gallery for several hours each day.

October 17th.—The wound is very nearly healed, and his health is excellent. He left the Hospital to-day and went home.

CASE 2—*Simple Fracture of the Femur with crushing of the Leg—Gangrene—Amputation of Thigh—Hæmorrhage—Death.* Reported by Mr. C. F. A. LOCKE.

William Harris, æt. 23, admitted to the Montreal General Hospital on Monday, 14th Nov., 1870, in consequence of injuries received while assisting in the unloading of a hogshead of molasses. He received the entire weight of the barrel while in a sitting posture, upon the front of the thigh, at the same time that he sustained an injury to his leg by its being jammed between the edge of the barrel and the cross-bar of the truck upon which he was sitting. On examination there was found complete eversion with great mobility and shortening of about $1\frac{1}{2}$ inches. The femur appeared to be broken across (as if the blow had been directly from above) at the lower half of the middle third. No other bones were broken, nor was there any apparent important injury to the soft parts. The fracture was then set with the long outer splint extending from the nipple, to below the foot, and anterior and posterior leather pieces were applied over a padding of cotton batting.

15th. Complained this morning of pain and tension in the upper and inner parts of the thigh, in consequence of which the bandage was slit sufficiently to relieve him. Got a chloral draught at-night, and slept well; does not complain of anything.

16th. Limb easy and looking well. Patient in good spirits and making no complaint.

17th. On taking down the limb to-day found the foot and some distance

up the leg cold, partly insensible, and with a bluish-black discoloration of the skin. Dressing re-applied, but much more loosely than before.

18th. Skin dark, though not to nearly so great an extent as on preceding day; the limb put up in cotton batting with a loose roller.

19th. No change to-day.

20th. Looking bad; large slough forming, sensation very imperfect; tibial pulse not discoverable, due, as the sequel proved, not to arrest of circulation in that vessel, but more probably to the swollen condition of the parts. Put up leg on McIntyre's splint; to be dressed with hot carbolic lotions, frequently renewed; to have good nutritious diet and wine.

21st. Had a rigor yesterday. Found him to-day in profuse sweat; pulse 128; and yet the leg looks much more florid; there is more sensation in it, and the tibial pulse is clearly discoverable. To continue the hot lotions, and to take a grain of quinine every three hours.

22nd. Chill last night and another to-day. Dress as before and to take quinine three times a day.

23rd. Consultation held, at which it was decided to amputate at once.

Dr. Fenwick then proceeded to amputate at the beginning of the middle third, making the antero-posterior flaps by transfixion. Having ligatured all the arteries and acupressed one vein, the wound was washed with carbolic lotion, closed with metallic sutures and dressed as usual. This was about 1-30 p. m.

At 8 p. m. found him doing well; stump easy; eating well; pulse 100, and not so feeble as might be expected. Gave him $\frac{1}{2}$ gr. of morphia in solution, which enabled him to sleep well.

24th. Found all doing well, but the pin used in acupressing the vein was found on the floor, probably pulled out by the patient during the slight delirium which followed the morphia draught. The wound was dressed as before and tension relieved by the removal of each alternate suture. Lips of the wound looking rather more gangrenous than might be desired.

25th. 10 a. m. Wound looking well; patient in good spirits; pulse good. 12.30. Hæmorrhage set in and continued for some little time before the alarm was given. However, as soon as it became known pressure was applied to the femoral and parts over the brim of the pelvis, which completely controlled the bleeding. The tourniquet was then applied and kept on constantly till the close of the case. His pulse rapidly rose in frequency and diminished in strength.

Brandy was ordered for him every quarter hour and beef juice, &c., to support him. In spite, however, of all that could be done he gradually sank, till, at 8.25 next morning, he died, apparently from asthenia.

CASE 3—*Amputation of Foot—Pyæmia—Death.* Reported by Mr. C.

F. A. LOCKE.

Jacob McConnel, æt. 55; Irish Protestant; occupation that of a gardener; of good sturdy frame, but broken down by excessive drinking, to which he has long been addicted, was admitted to the Montreal General Hospital on October 6, 1870, suffering from an old indolent callous ulceration on the stump of the right foot, from which the phalanges, and with them the heads of the metatarsal bones, had been removed. Gives a history of feet frozen in 1838, for which the above operation was performed. The left closed nicely, forming a good serviceable stump, while the right persistently remained open, presenting the appearances above described, and discharging, never to any great amount, but always a certain quantity of thin, unhealthy looking pus.

The use of stimulating applications, &c., was repeated again and again, but always with the same unsatisfactory result. There could be found no evidence of diseased bone, nothing but an indolent sore, surrounded with thickened, half dead, and almost insensible skin. It was decided then to remove the foot higher up, and thus secure to the man a useful limb, and save him from the inconvenience of a sore in so exposed a part.

Accordingly, on the 13th of October, Dr. Fenwick extended a flap from above and another from below, and sawing through the irregularities of the anterior row of tarsal bones, removed a wedge of bone containing, with part of the tarsus, the remains of the metatarsal bones from the original operation.

The bleeding vessels were then secured, and acupressure brought into requisition for the obliteration of certain of them, and the wound dressed with carbolic acid lotion, 1 to 40. It seemed probable then that a slough of some size would form, on account of the deadened condition of the parts.

14th. Evidences of the formation of a slough beginning to show themselves, otherwise the wound looks well. The surgeon removed some of the stitches and all of the needles, and ordered him a chloral draught at night.

15th. Complains of bad taste in his mouth, loss of appetite, shows a brown tongue, and presents signs of hepatic derangement. Ordered a purgative, and the following: \mathcal{R} . Potas. nitrat, 3j, potas. chlor. 3ij, aqua, \mathfrak{z} viij, to be made into a mixture, and to take a tablespoonful every four hours.

16th. Had a severe chill this morning, accompanied by vomiting of a dark bilious-looking matter; head very hot; extremities cold; face greatly flushed; tongue furred, and pulse about 98. All this was followed by profuse perspiration, after which he seemed greatly relieved.

There is a distinct line of demarcation visible, a slough slowly spreading from the lips of the wound.

17th. Seems much better to-day, even though he had three severe chills last night and one to-day, which latter lasted for above an hour. Heart's impulse is stronger, and the pulse less fluttering in character. Skin looking jaundiced. Hot fomentations to be substituted for the carbolic lotion, and 5 grain doses of quinine every four hours: the potash mixture to be stopped.

19th. Complains of pain in the lower part of his liver. The part was percussed, and the organ found to be a good deal enlarged. To have a blister over the seat of pain, and to have his bowels freely moved.

20th. Remaining suture removed to-day. Looks about the same. Carbolic dressing to be renewed.

23rd. Been gradually getting worse in spite of good nourishment, stimulants, and the medicinal treatment above mentioned; slight hæmorrhage occurring twice during the last twenty-four hours. Wound looks perfectly bloodless; skin bright yellow; conjunctiva jaundiced; regular returning chills, but wanting in other cardinal symptoms of pyæmia. Pulse weak and fluttering, but not so frequent as often occurs in pus-poisoning. Ordered to be supported by frequently repeated doses of whiskey.

24th. Rapidly sank till 11 A. M., when he died.

Post Mortem.—Lungs found filled with small abscesses immediately beneath the pleura, and very much congested in the dependent parts. Kidneys somewhat enlarged, with a great deal of fat, and presenting abscesses similar to, though fewer than, those in the lungs. Liver enlarged, and weighing about a pound more than normal. No signs could be discovered of pus-deposits in other organs.

CASE 4—*Concussion of Brain.* Reported by Mr. J. D'AVIGNON.

Pierre Thibault, labourer, was admitted into the Montreal General Hospital on the 9th Oct., 1870. He was occupied on the 9th in unloading a boat, and fell from the deck down into the hold, a height of some seven or eight feet. He was immediately taken to the hospital and presented the following symptoms:

He was in an extreme state of collapse, surface pale and cold, features ghastly, breathing slow, pulse almost imperceptible, pupils widely dilated and insensible to the stimulus of light.

The accident resulted in no external injury, except a slight bruise on the right supra-orbital region. It was not deemed advisable to administer

stimulants and the patient was left to recover by himself. He remained quite unconscious from 5 o'clock p. m. (the hour of admission) until 10 o'clock p. m. Between 8 and 9 o'clock reaction set in and he was seized with violent vomiting and purging. His head was shaved and kept cool by evaporating lotions. The patient was ordered to be kept perfectly quiet and was put on a milk diet.

12th. He is as if in a deep slumber, and seems quite insensible to what goes on around him; his memory is much impaired and he has considerable difficulty in articulating distinctly, he complains of giddiness and severe pain in the head; pulse very slow, 56, labouring and compressible, tongue dry and furred.

He was ordered potass chlor. ʒi, to water ʒ viii, of which one tablespoonful to be taken three times a day.

13th. He is still very stupid and drowsy; when roused he answers questions, but immediately relapses into unconsciousness. Although he does not seem to be very weak, yet on being requested by Dr. Ross to stand and walk, he was unable to comply with the demand, having apparently lost the power of combining movements; respiration easy; pulse continues slow and feeble, 55. His bowels having been confined for the last two days, he was ordered a dose of calomel and jalap, to be followed next morning by black draught.

14th. The calomel and jalap failed to operate last night and the draught taken this morning was rejected; tongue is a little dry, perhaps because the patient sleeps with his mouth half opened; he still complains of pain in the head, but cannot indicate any particular spot; he takes his nourishment well; he is still quite confused in his ideas; pulse 58.

15th. He seems to be a little better, remembers those that visited him yesterday: he complains of soreness along the spine and thighs. Black draught was given yesterday evening and operated well during the night; pulse 60.

16th. His speech is yet quite indistinct and stuttering; the pain in the head is less complained of; pulse 60.

17th. Pulse 62; still drowsy and heavy.

18th. No headache, but limbs and back feel stiff: tongue has a whitish fur; bowels confined; he was ordered sodæ bicarb, 10 grs, calomel, 5 grs, black draught to-morrow morning; pulse 68.

19th. He reports himself as decidedly better and wants to go home, the purgative has acted freely; pulse 68.

20th. Quite talkative and much less inclined to sleep; does not complain of any pain; appetite good; general appearance much improved; pulse 70.

21st. He has gained a good deal of strength, walks about quite lively, and is anxious to return to his family.

25th. Was discharged to-day; his mental powers are not completely re-established, but he is able to follow his usual occupation.

CASE 5—*Epithelioma of Angle of Mouth.* Reported by Mr. T. D. REED.

Emily F., æt. 76, presented herself at Montreal General Hospital with a foul ulcer, with hard edges, occupying the right angle of mouth, and extending for about one inch along the upper lip and for about the same distance along the lower lip. The disease began four years ago, as an excoriation on the upper lip, since that time it has slowly increased in size, and now presents the characters of Epithelioma. Various applications of a caustic nature had been applied to it, from time to time. She acknowledges having been a smoker.

Oct. 12th. Patient being under the influence of ether, Dr. Fenwick made two semicircular incisions through the orbicularis and buccinator, thus removing the diseased part. Three vessels required ligation, one of which was the facial. A small portion of mucous membrane from the lower lip was reflected back in an ingenious manner to form the new angle of mouth and the integument separated from its attachment to the ramus of the lower jaw bone. The parts were then brought together and retained by six wire stitches and three pins with twisted sutures. Carbolic acid lotion 1 to 40, to be applied.

A small portion of periosteum seems to have been removed near the mental foramen, as the tissues were afterwards found adherent there. The patient made a good recovery in less than a fortnight, and with very little deformity, considering the extent of surface removed.

MEDICO-CHIRURGICAL SOCIETY OF MONTREAL.

DECEMBER 3rd, 1870.

The regular meeting of this Society was held in the rooms of the Natural History Society. The President, Dr. G. W. Campbell, Dean of the Faculty of Medicine, McGill University, in the chair. After the minutes of the previous meeting had been read and approved, Dr. George E. Fenwick read the following paper:—

CASE OF WOUND OF LEFT LUNG AND HEART.

FOLLOWED BY HÆMOTHORAX—PARACENTESIS THORACIS—DEATH.

Under the care of Dr. George E. Fenwick, Professor of Clinical Surgery, McGill University:—Reported by George Ross, A.M., M.D., House Surgeon, Montreal General Hospital.

Thomas Burns, aged 27 years, a sailor, was admitted into the Montreal General Hospital under Dr. Fenwick, at 2 A. M. of the 30th October, 1870, suffering from a wound from a sheath-knife, received in a drunken row on the wharf. The wound, which was about 1 inch long, was situated $1\frac{1}{2}$ inch below the left clavicle; its direction was downwards and to the right. By means of the finger introduced into the wound, an opening into the chest could be felt between the 2nd and 3rd ribs. The surface of the chest was emphysematous up to the clavicle and down to the nipple; the integument over the part was puffed out, and the crackling very distinctly to be felt. There was very little bleeding at the time of his admission, but I was informed that he had lost a very large quantity of blood: he was pale, and the pulse very weak and thready. Brandy was freely administered and, in a short time, he rallied from this syncopal condition, when the pulse was about 125. The edges of the wound were brought together with wire sutures, and a small compress with water dressing applied.

October 30. 10 A. M. Suffers no pain; no hæmoptysis; no chills; pulse 125; respiration hurried; the emphysema has not extended.

10 P. M. At 8 P. M. was seized with violent and excruciating pain which he refers to the small of the back on the left side, and extending round to the front; he shouts wildly, and is covered with perspiration; the pain is constant but always increased on drawing breath; pulse 130; respirations 40 and short; no pain in front of chest. Ordered hot turpentine fomentations and \mathcal{R} . morph. sulphat. gr. ss. *statim*, and morph. sulphat gr. $\frac{1}{4}$ every three hours afterwards.

October 31. 10 A. M. Much easier; slept a good deal; still some pain in same region; no cough; no expectoration; pulse 132; respirations 22. The emphysema has extended so as to involve the whole axillary region and has increased in front. The side forms a large bulging sac of air. Percussion in front quite hollow or tympanic, and also at the side, but behind, where there is no emphysema, it is perfectly dull up to the spine of the scapula, at which point it is distinctly tubular in character. The breathing scarcely to be distinguished in front, owing to the air under the skin, but behind it is absent except at the root of the lung, where distinct blowing respiration is to be heard. Breathing in right lung healthy, except at the base where some bubbling is heard.

Morphia to be discontinued, as pain is quite relieved. Ordered 4 ounces brandy.

10 P. M. Quite easy; no pain; pulse 130; the side is fixed; no respiration being visible or felt.

November 1. Pulse 125; respiration 25; no pain; spat up for the first time a small quantity of bloody mucus; the emphysema is somewhat less marked.

November 2. Pulse 112; respiration 25. Has had considerable pain all night, and repeated fits of violent coughing; considerable amount of expectoration, frothy and bronchitic in character, containing no blood; sonorous râles and mucous bubbling are heard all over the right lung.

November 3. Pulse 112; respiration 22. The wound has quite closed externally, and the stitches were removed; the integument at the part, however, can be seen to bulge during the act of respiration and especially during coughing. The emphysema has entirely disappeared, except very slightly in the neighbourhood of the wound; marked bulging of the side, and fulness of the intercostal spaces. The heart is dislocated to the right side, so that the point of impulse is just at the xyphoid cartilage.

November 4. Pulse 112; respiration 20; breathing more laboured; percussion, left side in front, dulness to top of 4th rib; above this a hollow or tympanitic note; behind, wooden dulness up to the spine of the scapula, above which the same tubular note is still found. Breathing in front absent below, and clear above; behind the same; vocal fremitus almost annulled over the whole side; vocal resonance absent below both front and rear, and above pectoriloquous and hollow; the whole left side of the chest nearly motionless: a large, dark purple ecchymotic patch is showing itself at the posterior part of the lateral region; takes food well and is in good spirits.

8 P. M. During a fit of coughing the lower edge of the wound was forced open, and a spout of dark-coloured fluid disorganized blood, was forcibly ejected in considerable quantity. Whilst he remains quiet no blood escapes, but during each fit of coughing the blood in a similar manner is ejected.

November 5. Pulse 115; respiration 22. Passed a restless night, forcing blood from the wound during each paroxysm of coughing; must have ejected altogether at least half a pint of this blood; cough being troublesome, ordered: ℞ potass. cyanid. gr. ii, solut. morph. ʒ ii, aquæ ʒ viii. To take one des-erts-poonful every three hours. The ecchymosis on the side has increased to more than the size of one's hand and deepened in colour. The emphy-sema much decreased.

November 6. Pulse 108; respiration 20; cough less troublesome; physical signs unaltered; slight bleeding from the wound two or three times during the night; slight frothy expectoration without blood.

November 7. Pulse 94; respiration 21. At 8 P. M. thirty ounces, by measurement, of this foetid blood were again driven from the wound.

November 8. Pulse 122; respiration 24. Several times during the night large quantities of similar blood have been forcibly ejected, sometimes in a stream completely across the ward, a distance of 10 or 12 feet. Seems somewhat paler to-day and considerably exhausted.

November 9. 10 A. M. Pulse 112; respiration 22. The ejected blood has now become excessively foetid; looks weak and depressed. At 1, P. M., Dr. Fenwick, in consultation with several members of the hospital staff, decided to introduce a drainage tube. Accordingly an incision was made through the integuments at the posterior third of the chest and a large trocar thrust in between the 11th and 12th ribs, and three pints of intensely foetid fluid, broken-down blood, were drawn off; a large curved, eyed, iron director was passed in and made to project in the 9th interspace, about four inches from the first opening; the end of this was cut down upon, the extremity forced through, and the eye threaded with a large-sized, perforated rubber drainage tube, the director withdrawn and the two edges of the tube fastened together in a loop. The whole cavity of the pleura was then freely syringed with a diluted solution of Condy's disinfecting fluid. The original wound was then closed by two or three metallic sutures and a compress and bandage applied over it.

10 P. M. Pulse 108; respirations 24; cough rather troublesome; considerable discharge from the tube.

November 11. Pulse 100; respiration 22; taking nourishment freely; A very abundant discharge of tolerably thick pure pus from the tube; expectoration bronchitic. Ordered four ounces of wine.

November 12. Pulse 96; respiration 24; very great distress in breathing; position of the heart unaltered, lying directly in the mesian line, its sounds without murmur, but weak and muffled; mucous bubbling is heard over the right lung both in front and behind. The discharge is becoming very profuse and decidedly more foetid than before and thinner. He is getting very pale and much emaciated.

November 16. Pulse 115; respiration 25; discharge excessively foetid and profuse; the original wound has been forced open again, and some of the matter occasionally comes from it; a large collection of matter is lodged under the skin around the wound, and, on coughing, is driven through it. From this date he gradually sank and finally died at 10 P. M. on the 20th November.

Sectio cadaveris 16 hours after death.—Left side of the chest flattened and contracted; it measures below the nipple $17\frac{1}{2}$ inches, while the right side correspondingly measures $18\frac{1}{2}$ inches. On reflecting the integument of the left infraclavicular region, a large abscess is found, extending from the lower border of the 1st rib to the upper border of the 4th rib, and from the edge of the sternum outwards about 5 inches; in the floor of this abscess, 2 inches from the edge of the sternum and between the 2nd and 3rd ribs, is found a circular opening about 1 inch in diameter. On raising the sternum the left lung is found collapsed, occupying but a small space against the vertebral column, the remainder of the cavity being filled with air. Lying on the diaphragm is a small quantity of pus. The costal pleura presents the appearance of a granulating surface and is smeared with pus.

The *Left Lung*—The *lower lobe* was entirely collapsed, non-crepitant and any portion sinking in water; the pleura covering it very much thickened and leathery. The *upper lobe* diminished in size and partially collapsed, but containing some air, as many portions of it would float. On its anterior and inner surface it presents a wound passing downwards and inwards, $2\frac{1}{2}$ inches in length and $1\frac{1}{2}$ inch in depth, showing on its sides several openings of divided bronchial tubes. At the upper part the edges of the wounded lung are slightly adherent anteriorly to the chest walls. At the lower extremity the wound dips beneath the pulmonary pleura, penetrates this latter at a point round which it is closely attached to the pericardium and then passes through the pericardium also, the orifice in it being about one-eighth of an inch in diameter.

The *Right Lung*—The *lower lobe*, deeply congested but crepitant throughout and floating: *middle lobe*, entirely consolidated, non-crepitant, infiltrated with pus and sinking in water; *upper lobe* had its lower third similar in condition to the middle lobe, and its upper two thirds crepitant and healthy. The pleura covering the two lower lobes was much thickened and covered thickly with lymph.

The *Heart* was displaced to the right, lying vertically in the anterior mediastinum, its apex corresponding with the situation of the xyphoid cartilage. On the surface of the heart immediately opposite the perforation in the pericardium already spoken of, is seen a small firm cicatrix about one and a half line in length, and at the upper angle of this is a small pocket of pus, of irregular form, about the size of a pea. The valves of the heart were healthy.

The *Pericardium* was externally adherent to both lungs; much thickened throughout, partially adherent to the surface of the heart, especially round the opening in it before mentioned; its free inner surface lined with thick layers of lymph, and the remaining cavity filled with pus.

I am indebted to Dr. Ross, the House Surgeon of the Hospital, for the very accurate and carefully recorded history of this case.

Remarks.—Wounds of the pleura and thoracic viscera, are of sufficient rarity to warrant my bringing the foregoing case before the notice of this society. The extent of the visceral lesions was undetermined during life, as the symptoms were negative. The man when admitted into Hospital was in a state of extreme collapse from loss of blood. He rallied slowly but steadily, but exhibited no signs of the important and extensive visceral lesions, which were found to exist on *post-mortem* examination. It would almost appear impossible that extensive and deep penetration from without the chest wall, can occur without a corresponding wound of the lung, when it is remembered the close approximation of the lung and its pleural investment to the chest wall; when such does occur, and there is abundant evidence to prove its possibility, it can alone proceed from the rapid admission of air through a large wound, producing collapse of the lung, thus removing it out of the reach of injury. These cases, however, must be regarded as exceptional, as it is more common to meet with these wounds complicated with visceral injury. It would appear difficult to determine definitely in cases such as the present, whether the lung is wounded or not, nor does it appear that a knowledge of visceral injury would in any way influence the results. Exploration by the finger or probe, is condemned as useless, if not highly hazardous; by so doing nothing satisfactory can be arrived at, and there is great danger of disturbing nature's efforts at repair, and removing clots from the mouths of opened vessels; all examinations, therefore, manipulative or otherwise, are denounced as unwarrantable. Other methods have been proposed, such as holding a lighted taper to the wound, which is kept open during the experiment, the patient being directed to take a forced inspiration, and try to distend the lung. If the flame flickers it is stated to be a proof of wounded lung. The objections to this are that the observer may be deceived, as no air will be forced out, even in some cases where the lung has been wounded, and again in other instances where the lung has escaped injury the air at each respiratory effort will be forced in and out of the wound. In this form of injury, the presence of air in the cellular tissue is no proof of wounded lung. The air rushes in and out through the wound at each respiratory effort; if there is even slight obstruction to its exit, which did occur in this case, as the wound was valvular, it will pass into the cellular tissue, and give rise to that emphysematous condition, which is looked upon as characteristic of wound of the lung, or any of the air passages.

Again the absence of hæmoptysis, which was here observed, is no proof

that the lung has escaped injury. It is as a rule present, more especially if any large bronchus has been opened. There are other symptoms of considerable diagnostic value besides those enumerated, which would lead to the suspicion of visceral injury, such as the escape of frothy blood from the wound during inspiration and expiration: a deep fixed pain in the chest, tickling cough, and dyspnoea, which were all absent in this case, and the absence of distress in breathing was marked and peculiar when we remember that one lung was almost entirely collapsed. In wounds of the character of the case under consideration, there are two conditions always present, viz.—Emphysema and pneumothorax. Emphysema even when considerable, will disappear in the course of a few days. Pneumothorax will be readily made out by the urgent dyspnoea, the tympanitic resonance of the chest wall, amphoric breathing and metallic resonance. These latter signs will not be clearly appreciable if the lung is much compressed. Another condition most likely to occur and one which existed in our case, is hæmothorax: the symptoms will much depend on the amount of blood poured out; where the hæmorrhage is large in amount and rapid in its occurrence, symptoms of collapse will be marked, and death will be rapid; when, however, the effusion is more gradual, wooden dullness can be traced upwards as the fluid increases in quantity: the heart will be displaced, marked bulging of the intercostal spaces will be noticeable and perfect absence of respiratory murmur. There is one peculiar sign which is described as occurring several days after the injury, and which was observed in this case, although not in the situation mentioned by Valentin, and that is a large ecchymosed spot in the lumbar region: it is described as reaching from the angle of the lower ribs toward the quadratus lumborum muscle, is of a deep violet hue, due to the transudation of blood into the cellular tissue of the part, and a sure sign of the presence of blood in the cavity of the pleura.

Mr. Syme states that where this ecchymosis exists it is due to the accumulated blood in the pleura passing out through the wound in the chest wall, and not finding a ready exit it becomes effused into the cellular tissue of the part. When a patient is propped up in bed in a semi-recumbent posture the blood will gravitate to the most depending position and thus is more frequently observed in the position indicated by Valentin. In our case this ecchymosis made its appearance on the sixth day and occupied a much higher position than that described, as it extended from the front of the axilla down the inner side of the chest wall, and was clearly produced in the manner described by Syme. When other signs are wanting this is regarded as conclusive of hæmothorax and renders paracentesis imperative. Wound of the heart, which existed in this case,

is a very rare accident; the symptoms of this lesion are by no means certain. Where the wound is extensive, opening one of the cavities, the hæmorrhage would be sufficient to produce instantaneous death. In some cases where the wound is not extensive, the quantity of blood effused is not great and it soon coagulates, and thus prevents further loss; acute pain in the sternal region is described by some writers as occurring in this lesion, and Dupuytren noticed a peculiar tremor with weakened arterial pulsations. In this case there were no symptoms to lead us to suppose that wound of the heart existed; the heart was displaced, and towards the termination of the case, the sounds of the heart appeared less distinct; but there never was observed at any one time frottement, which you would suppose should have existed; but at no period of the history of this case were there any symptoms referable to lesion of the heart. The opinion of some surgical authorities is, that in wound of the chest, involving wound of the heart, auscultation will afford no positive signs, though a peculiar crepitation has been observed, and in some cases a slight bruit.

DR. R. P. HOWARD wished to draw attention to two circumstances mentioned in the report of the case just read that appeared interesting. One was that although a free opening existed in the thoracic wall through which the fluid effused into the pleural cavity escaped readily and in large quantity, yet the affected side of the chest was enlarged, which seemed to indicate that the mere weight of the fluid in the pleural sac, without any active distension, was sufficient to enlarge the dimension of the affected cavity. The other was, that although the left lung was completely collapsed by the pressure of the effusion and air in the pleural cavity, little dyspnoea was experienced, and the pulse respiration ratio was very little disturbed. Was this because the copious hæmorrhage from the wounded lung had reduced the amount of blood in the body and *pro tanto* lessened the need for the normal extent of respiratory surface? Or was it that the system had gradually become accommodated to the disturbed condition of the respiratory organs? There might be some other reasonable explanation of the circumstance, and he would like to learn the opinions of the members, regarding what was to him an interesting clinical fact.

DR. FRASER remarked in regard to the slowness of Burns respiration with one lung completely destroyed, that it was not uncommon to find the frequency of the respiratory beats but little above the normal standard, in persons affected with chronic pulmonary disease, even when both lungs are affected. This he believed to be due, partly to the diminished amount of blood in such cases, partly to the comparatively small amount

of oxygen required to nourish tissues in the state of rest which such invalids usually maintained, and partly to the small amount of carbonic acid to be eliminated. In Burn's case, a large amount of blood had been lost, and consequently less of that fluid had to be aerated, and he was in a state of perfect rest with little waste of tissue. Therefore one healthy lung seemed sufficient, without any extraordinary exertion, to perform the work of two, when the amount of blood was normal and the bodily functions were in a state of activity. Moreover, he was taking remedies well known for their effect in diminishing the frequency of respiration. These circumstances were, he thought, sufficient to account for the condition of the respiratory acts referred to by his friend Dr. Howard.

DR. G. W. CAMPBELL, (President) stated that while approving of the general management of the very interesting case, the details of which had just been read to the society, there was one point on which he thought a different practice might have been advantageously adopted, he alluded to the immediate closure of the wound in the walls of the chest. Such practice was against the experience of surgeons when the lung was wounded, and in the present case, he could not see any benefit to be expected from it. When the patient was admitted to the Hospital, there was both pneumothorax and hæmothorax present; then why shut up in the pleural cavity, a quantity of blood certain to become, from decomposition, a source of mischief. The collapse of the lung, which such practice might have been intended to prevent, had already to a great extent taken place, and would in itself be rather a benefit than otherwise, as tending to prevent hæmorrhage. Dr. Campbell went on to state that he highly approved of the paracentesis thoracis and only regretted that that operation was not performed at an earlier period.

After a few remarks from Drs. Hingston, Trenholme, Bell and others, Dr. Fenwick, in reply said: The only question, Mr. President, which appears to me to demand a reply, is that by yourself on the point of closing the wound by the house surgeon on the admission of the patient into Hospital, and I think that looking at all the circumstances of the case, the fact that it had been stated that the man had lost a large quantity of blood, that he was collapsed, was suffering much distress in breathing, that the air was rushing freely in and out of the wound at each respiratory effort, and also in looking at the situation of the wound, that the house surgeon and his assistant were perfectly justified in closing the wound. No advantage was to be gained by leaving the wound open, as if blood was effused into the pleural cavity it could not find exit through the wound unless the man had been turned over on his face and hung

up by his heels. The bulging of the intercostal spaces did not exist, nor indeed was the evidence of hæmothorax a present urgent symptom. I cannot see what advantage was to accrue from leaving the wound open, still I am aware that it is a procedure recommended on high authority. With reference to the treatment of the wound after a drainage tube had been introduced in a depending position, I thought it advisable to close it if possible. With this end in view, I again brought the edges together and strapped the side of the chest to secure perfect rest. Paracentesis might have been performed earlier, but I do not think that it mattered much, or that in consequence of delay the man in any way suffered, as there was no evidence of distress or mischief from the presence of the fluid in the pleural cavity.

The heart and lungs were then shewn by Dr. Fenwick to the members of the Society.

DECEMBER 10th, 1870.

The usual meeting of this Society was held in their rooms, Natural History Society's building, on Saturday evening, the 10th December, Dr. Robert Godfrey, 1st Vice-President, in the chair. The following members were present, viz: Drs. Craik, Scott, Trenholme, Howard, Fraser, Chipman, J. A. Rogers, Finnie, Dugdale, Girdwood, F. W. Campbell, David, Tabb, Hingston, Kennedy, Thompson, Peltier, Gardner, W. Sutherland, jr., Drake, Reddy, Godfrey, Fenwick, Roddick, Sewell, Bell, Angus McDonnell.

Dr. Roddick, the Secretary, read the minutes of the previous meeting.

Dr. Robert Craik, Professor of Chemistry, McGill University, read the following paper:—

**TWO CASES OF SEVERE COMPOUND INJURY TO THE ELBOW JOINT,
TREATED BY CARBOLIC ACID. RECOVERY IN BOTH CASES
WITH PERFECT JOINTS.**

Case 1.—V. A., a stout, healthy young woman, aged about 20, was brought into my surgery on Sunday evening, the 1st of August, 1869. She had been thrown from a carriage at Côte des Neiges, and had seriously injured the left arm at the elbow, and had suffered other injuries of less importance. Finding from a cursory examination that the injury was a compound one of a very severe character, I had her conveyed immediately to the Montreal General Hospital, where, with the assistance of the resident staff, Drs. Ross, Roddick and Rogers, I made a thorough examination of the injury, and found it to consist of

a compound dislocation of the radius and ulna backwards. The wound was a ragged one, about an inch in length on the inner and anterior side of the joint, and had evidently been caused by the protrusion of the inner condyle of the humerus, which could be readily felt by passing the finger into the wound. No fracture of any of the bones could be detected. Having cleansed the wound from the dust and blood which adhered to it, I proceeded, with Dr. Ross's assistance, to reduce the dislocation in the usual way, which was effected without much difficulty.

As the weather was intensely warm at the time, and as the wound had been exposed to the air for fully an hour, I felt certain that in the ordinary course of things intense inflammation, with possible disorganization of the joint, would be very likely to supervene, unless prompt and vigorous measures were adopted to prevent them. Being a firm believer in the germ theory, and being thoroughly convinced of the efficacy and harmlessness of carbolic acid in such cases, even when applied to serous and synovial membranes, I determined to apply it thoroughly in this case. A mixture of one part of carbolic acid with ten of water was, therefore, carefully injected through the wound into every part of the joint and its vicinity, the syringe passing in different directions to a distance of several inches. Having squeezed out any excess of the liquid by slight pressure externally, the edges of the wound were brought together by strips of plaster, a pad of lint dipped in the same carbolic mixture was applied to a considerable surface around the wound, a piece of oiled silk placed over it, and a bandage and rectangular splint completed the dressing.

Very little pain was felt during the dressing, a slight smarting being the only sensation complained of when the joint was being injected with the carbolic mixture.

Monday, August 2nd.—Rested well during the night; scarcely any pain, and very little swelling.

August 4th.—Removed and renewed the dressing; no sign of supuration; very little swelling; complains of slight smarting from the local irritation produced by the carbolic acid.

August 13.—She left the Hospital to-day, with the wound completely healed, but with considerable excoriation from the acid. There is an entire absence of pain or tumefaction about the joint, and when the splint is removed she can move the joint without difficulty. She was directed to continue the use of the splint for a week or two longer, to afford support until the ligaments should have regained sufficient strength.

On the 24th the splint was removed altogether, and passive motion performed regularly for a week or two to overcome some slight rigidity

the flexor muscles. She was also advised to use the arm for light kinds of work, and on September 14th the functions of the arm and joint had become fully restored.

Case 2.—James Rodgers, aged about 35, a brass founder, employed by Mitchell & Co., was brought to me on the evening of Sunday, February 6th, 1870, with a severe injury of the right elbow and forearm, produced by a kick from a horse. As the injury was evidently severe, I had him conveyed at once to the Montreal General Hospital, and, with the assistance of the resident staff, as before, I proceeded to examine and to attend to his injuries.

There was a wound on the under and posterior surface of the forearm, about two inches below the olecranon, and about three-fourths of an inch in length. Immediately beneath the wound was an oblique comminuted fracture of the ulna, extending into the joint, and a fracture of the radius in the upper third. There had been considerable hemorrhage, though not apparently from any large vessel.

Remembering the excellent results of the carbolic acid treatment in the former case, I determined to carry out as nearly as possible the same line of treatment in this case, and I therefore proceeded, after cleansing the wound with tepid water, to inject the whole of the interior with the same carbolic mixture, 1 part to 10 of water. The syringe was passed freely in every direction, and the injection continued till the lotion flowed freely from the wound. The excess was then squeezed out, the wound closed, a pad of lint soaked in the carbolic mixture, applied with oiled silk, and the whole carefully supported by two strong gutta-percha splints and bandages.

February 7th.—Very little pain; considerable swelling, and great ecchymosis extending from the shoulder to the hand. No inflammatory redness, however, nor other bad symptom.

February 9.—Removed and renewed the dressings; no sign of suppuration. Swelling and ecchymosis of course still present; very little pain. Slight blistering from the carbolic acid.

February 16.—He left the Hospital to-day, the treatment having been continued as before and the wound being entirely healed. The swelling and ecchymosis are also nearly gone, but there has been considerable excoriation produced by the carbolic acid. The further treatment was carried out at his own house. Passive motion was cautiously commenced after the sixth week; the splints were removed at the end of the eighth week and he resumed his work at Mitchell's on Monday the 11th of April, exactly nine weeks after the accident.

Remarks.—Of course it is not pretended that there was anything ori-

ginal in the treatment of the foregoing cases. Professor Lister has so clearly and so often pointed out the efficacy and safety of the antiseptic treatment by carbolic acid, and the profession has to so large an extent adopted his views and his treatment, that there is now more scope for originality in abstaining from adopting them than in following what is fast becoming a well beaten track.

I have thought these cases, however, worthy of being laid before you chiefly because they were examples of injuries (fortunately not very common) involving an important joint, and which, under the old treatment, would in all probability have led to serious permanent injury to the limb.

Many persons entertained the idea that because carbolic acid, more or less irritant in its action upon the external skin, that therefore it must be quite unsuitable or injurious when applied to delicate structures such as synovial and serous membranes. Such, however, was not the fact, for the concentrated acid had more than once been applied to serous membranes without the slightest bad effect. I myself on one occasion applied it in the presence of many now present in its most concentrated form to the stump of two pedicles in a case of double ovariectomy, and without producing the slightest evidence of irritation. In the cases now under consideration, although the acid was not used in its concentrated form, it was yet sufficiently strong to produce severe excoriation of the skin, and yet not the slightest evidence of irritation, except momentary smarting, was produced by its application to the interior of the wound and to the synovial membrane.

But it may be asked why use so strong a mixture when a weaker one would probably be sufficient? I reply that where the dangers to be guarded against are of such importance as the destruction of a large joint, and when it has been proved that no evil consequences follow the use of a strong mixture, it is better to be on the safe side, more particularly when the wound has been exposed to the air for a considerable length of time in hot weather.

In conclusion I would remark that to carry out the antiseptic treatment thoroughly it is almost necessary that one should be a firm believer in the germ theory, otherwise some necessary precaution is apt to be omitted which may vitiate the whole process. Just as a sentinel to be thoroughly efficient must firmly believe that enemies are hovering round eager to elude his vigilance, and a single portal left unguarded or a single moment's neglect may entail the loss of all, however valuable, which may have been committed to his charge.

Dr. T. G. RODDICK, Assistant House Surgeon, Montreal General Hospital, read the following case:—

COMMUNUTED FRACTURE OF LOWER EXTREMITY OF THE HUMERUS
WITH RUPTURED BRACHIAL ARTERY—GANGRENE—AMPUTATION.

(Under the care of W. E. Scott, M.D., Professor of Anatomy, McGill University.)

Christmas Cater, æt. 21, of temperate habits, employed as brakeman on the G. T. R., while coupling cars on the night of Wednesday, 26 October, by some accident not well explained by himself, had his arm caught between the coupling irons, whereby he received a severe injury to the elbow joint, with considerable general shock. When seen by Dr. Scott, a few hours after, he was found to be suffering from a comminuted fracture of the lower extremity of the humerus involving the joint, the limb being much swollen from evident effusion of blood. He could move the joint without great pain, but on so doing a distinct diffuse crepitus was noticeable, and on closer examination, the condyles were found totally separated from the shaft of the bone, and through a sac of fluid at the back of the joint could be felt the broken point of the olecranon as though completely separated from the surrounding tissues. The parts were so swollen and infiltrated that nothing further of a definite character could be ascertained, excepting that the bones of the forearm had evidently escaped and that the joint proper appeared intact. The limb was bandaged, placed in a comfortable position and cold lotions ordered to be applied.

Two days following he was sent by Dr. Scott to the General Hospital. He then appeared to be suffering intense pain, and the arm was swollen to twice its normal size, livid, tense, and much colder than natural. The hand was correspondingly swollen, of the same livid hue as the arm, and cold and clammy to the touch. As it was impossible, both from the pain he was suffering and from the condition of the limb, to apply anything in the shape of splinting, the arm was laid comfortably on a pillow and hot fomentations of lead and opium constantly applied. He was put on sustaining treatment with abundance of beef tea and milk, and 4 oz. brandy daily. His pulse at this time was 110; skin acting freely; tongue slightly coated and bowels constipated. Ordered for the latter a mild aperient.

The day following his admission the pain seemed to have increased than otherwise, and the almost icy coldness of the hand of the day previous was found to extend up the arm to midway between the wrist and elbow. There was total loss of sensation in the hand, and even when pricked deeply with a pin he declared he felt nothing. We could not find the radial pulse by the most careful examination, but the question as to how long the circulation had ceased in the limb could not well be answered, as no one had before felt for it. The swelling and blue discolora-

tion had extended up the arm even to the shoulders, where he complained of great pain. His general condition was not worse than the day previous.

Nov. 1st.—Since last noted his health has not materially altered for the worse. The limb to-day, however, is cold as high as the joint, while the arm above seems to be taking on an erysipelatous action, being hot, red and roseated. The skin is so tense that you cannot make the slightest impress on it, and the fingers are so swollen that they are noticed to stand out from each other, and can scarcely be bent. Tongue slightly coated; pulse 115; skin drier than before; bowels regular; appetite good.

Nov. 4th.—Erysipelatous condition of the upper arm has disappeared, but he has not otherwise been nearly so well since yesterday; tongue brown and furred; skin hot; pulse frequent and small; loss of appetite; very little pain excepting in the shoulder, limb in somewhat the same condition. Ordered quinzæ sulph. grs. j. three times a day, with pulv. cretæ co. c. opio gr. xx every 4 hours for the diarrhœa.

Nov. 8th.—Has not improved since the 4th. A large slough has formed at the posterior and inner part of the joint, where a bruise received during the accident was originally situated. In fact the whole limb from the elbow is in a condition of sphacelus. Dr. Scott has decided on calling a consultation for to-morrow, and in all probability will amputate. Poultices with carbolic acid to correct the fœtor are substituted for the hot fomentations.

Nov. 9.—To-day Dr. Scott, assisted by Dr. Fenwick and the other members of the staff, removed the arm at the middle third of the humerus by the double flap operation by transfixion. The cellular tissue was found to be much infiltrated, and indeed a small quantity of pus was noticed on the face of the upper flap. He lost comparatively little blood, although there were some half dozen apparently supernumerary vessels requiring to be ligatured, suggesting the idea of an attempt at a collateral circulation. He slept for a couple of hours after the operation, and at 10 P.M. expressed himself free from pain and inclined to sleep.

Examination of Limb.—Tissue all gangrenous; cut down on the radial and ulnar arteries at the wrist, and traced them to the upper third of the forearm when they became more and more indistinct, and ultimately over the joint terminated in a large diffuse sac of pus and blood. Found fracture of the lower extremity of the humerus entirely separating the condyle, with separation of the point of the inner condyle, and severe comminution of the olecranon. The condition of the parts went to prove that the joint was crushed by a force acting neither directly antero-posteriorly nor laterally, but between these two, or diagonally across the joint,

in which event, likewise, the laceration of the artery is more easily understood.

The stump did remarkably well, and the patient appeared to be rapidly gaining his former health, when, on the ninth day after the operation, he was suddenly attacked with a rigor and intense pain in both hips, near the joints. It was thought at first to be pyæmic, but the symptoms abated so rapidly, and without further developments, that they could hardly be explained under that head. He has never since, however, been entirely free from pain in the left hip, and there is a question now whether pus is not actually forming in the gluteal region of that side. He does not seem to gain in strength at all, though the stump may be said to have entirely healed.

The following is a synopsis of the discussion which ensued :—

Dr. SCOTT said that in the case read by Dr. Roddick, and which was under his care, there was at first no very marked evidence of rupture of the artery, although he thought it might have become entangled in the fragments of bone, and in that way compressed, and the circulation in the limb arrested. That it was ruptured, however, there could be little doubt, as was, indeed, demonstrated after the amputation. The day previous to the operation a fraction of the natural temperature returned to the forearm for a short distance below the elbow, and, as was mentioned in the report, a collateral circulation had been really set up, there being some five or six vessels given off above the profunda artery, of which at least two were as large as the brachial itself in its compressed state. As was also mentioned, about the ninth day there was intense pain in the right hip, preceded the night before by a distinct rigor. Pulse about 140. He, therefore, feared pyæmia, and gave him morphia and large doses of quinine. He rallied a good deal in the twenty-four hours following, and was now comparatively free from pain. Dr. Roddick states that the stump is healed, as will invariably be the case with all stumps when the double flap and ligature are used.

Dr. FENWICK, referring to Dr. Craik's paper, said that in his opinion it was not necessary to apply such strong solutions of carbolic acid as had been used in these cases, citing at the same time an instance in his own practise, in which a single application of carbolic acid oil 1 to 16 had apparently produced an extensive slough. The case was one of amputation of the leg, in which the man died of pyæmia. He never used anything stronger than 1 to 20, but his ordinary lotion was of the strength of 1 to 40. In reply to Dr. Scott, he would say that after a long and varied experience of acupuncture in amputation, he considered the dangers from hæmorrhage by that mode of securing vessels not greater than by the use of the ligature, and he thought the results to the stump were more satisfactory.

Dr. TRENHOLME wished to know whether in similar injuries it would not be desirable at the outset to ligature the brachial artery, remove the effused fluid from the joint, inject the cavity with a solution of carbolic acid, and assist by artificial heat to maintain the temperature of the limb until collateral circulation was established, and afterward treat the fracture. This effort to save a limb was now undertaken in many cases with success,—thanks to conservative surgery and carbolic acid—where formerly it would not have been attempted.

Dr. REDDY made a few remarks with reference to injections of carbolic acid. Two years ago he had a case of gunshot wound, which was seen by Dr. G. W. Campbell. The accident happened at Tadousac. A charge of duck-shot entered the inner side of the thigh, near Hunter's Canal. When the patient arrived in Montreal he was very weak, and there was great stench from the wound, with an almost sphacelated appearance. His pulse was in the neighborhood of 140, and a good deal of jactitation. Carbolic acid injections were used of the strength of one part of acid to ten of oil. It was kept up for 20 days, when on entering the room one day he was quite conscious of hearing the sounds of the patient's heart, who complained of difficulty of speaking and of the beating of his heart. He at once stopped the injections, and the bad symptoms gradually subsided. He at that time was not aware of the peculiar colour of the urine in poisoning by carbolic acid, but its green colour attracted his attention. Twenty duck shot, as well as a piece of his coat and breeches, were extracted, and he made a good recovery.

Dr. SCOTT said in compound fractures, with rupture of the artery, the rule was not to amputate; in comminuted fracture, to amputate. The difference in prostration between venous and arterial loss was due to the rapidity of the loss when it was arterial.

Dr. FRASER remarked that having somewhat recently visited Europe, he had seen Lister apply carbolic acid in Glasgow, Pirrie in Aberdeen, and Paget in London. The strength of the various lotions of carbolic acid used by Lister were weaker than that used by Dr. Craik, in the two cases which he had read. If he remembered correctly Lister's strongest lotion was 1 to 40 or 1 to 60. There were various strengths kept constantly in the wards. Lister did not use it as a direct application to a wound, the usual lotion was applied, and then above it the carbolic acid paste. In Hospital practice in Montreal, he (Dr. Fraser) had imitated this plan by applying to ulcers such applications as red wash, and above it the carbolic acid and oiled silk, and the cases thus treated had invariably done well. In a case of compound fracture of the ankle joint, the joint being laid open, which was brought into the Glasgow Hospital

upon the occasion of one of his visits, Lister recommended the injection of the joint with carbolic acid. His (Dr. Fraser's) opinion was not in favour of employing strong solutions. He did not consider them necessary, 1 to 40 or 1 to 30 being as strong as he would apply it on a fresh wound. In old and weak persons, he had several times seen the parts look like as if they were blistered and burnt. Lister, in his wards, had not a stronger solution than 1 to 20, and they were as weak as 1 to 60. He mentioned a case of very extensive chronic eczema in an old man under his care in the Montreal General Hospital, where he applied an ointment of the strength of 1 to 4. He applied this strength, having read a case where a Dr. McNab applied the same with benefit. In his case the entire body was desquamated, the man fainted, and was in a state of collapse; the urine was of the green colour alluded to by Dr. Reddy. The man recovered, and notwithstanding this untoward event, the disease was cured. He thought there could not be any doubt of its efficacy in the treatment of skin diseases. This hint he took from Dr. McCall Anderson, whose practice he saw when in Glasgow. He strongly advised his skeptical friends to give it a fair trial. In his private practice he had prescribed it internally in cases of malignant scarlet fever. He also, in these cases, injected the nares and brushed out the throat with it. His experience of it in such cases was not large, yet he thought he could say he had seen good results from its use. Referring again to Professor Lister, Dr. Fraser said, one thing which could not fail to be observed was the great attention he gave his cases, and the rapidity with which he changed the dressing, seldom leaving the wound exposed for more than a moment. It was not used as a healing agent, but simply to act upon the germs. In Edinburgh he had seen Dr. Keith, celebrated for his successful cases of ovariectomy, and asked his opinion concerning carbolic acid. He replied he was favourable to its employment. Previous to its introduction he had used tar, but he now used carbolic acid, and believed he had more success from it. In Paris he found they knew little of carbolic acid. In going round the wards of the St. Louis, with a surgeon, he saw a case where he thought it might be applied with benefit, but the surgeon seemed to be ignorant of it. Shortly after he remembered it, and said they did not think anything of it. Dr. Fraser then alluded to Lister's carbolised catgut ligature, stating that since he had removed to Edinburgh he used the ordinary ligature carbolised, as being less apt to slip. He mentioned incidentally that Dr. Duncan, of Glasgow, had informed him that he had employed torsion twice on the femoral, and once in the brachial, successfully. He concluded by stating his firm conviction that in carbolic acid we had a valuable acquisition to our means of treating wounds.

Dr. R. PALMER HOWARD said the result of his experience in the application of carbolic acid to wounds was, that it certainly arrested suppuration, however it might act. The most important assertion, however, which has been made in connection with the use of this agent, was that by Lister, who affirmed that under his care, in the wards of the Glasgow Infirmary, where the acid was constantly applied, pyæmia had ceased to exist. It was a valuable anti-septic, and prevented decomposition, and in this way did much to reduce the frequency of both erysipelas and pyæmia. He did not think that it assisted cicatrization, but on this point he was not very clear.

Dr. DAVID mentioned a case of ozæna, where carbolic acid had been applied of the strength 1 to 10, and the patient was frantic from the pain. In scarlet fever he had used it internally, he believed, with good results. He gave one drop of the strong acid to adults, and half a drop to younger persons.

Dr. FRASER thought there was an anti-carbolic acid idiosyncrasy. He alluded to a case under his observation, where a first injection into a sinus, of a moderately strong solution was followed by alarming signs of weakness. He had seen many other cases where no such result ensued.

Dr. HINGSTON said he was not a believer in the germ theory, and yet he was daily in the habit of using carbolic acid. He would not, however, thrust it into a recent wound which promised to heal kindly, nor would he inject it into the cavity of a joint. Surgeons now-a-days, it seemed to him, were afraid of pure air. If the atmosphere was loaded with the germs, concerning which so much had been said this evening, would they not make their presence felt upon all occasions. In Hospital practice, where there were unpleasant odors, he would employ it, but in private practice, where plenty of pure fresh air was to be obtained, he would not think of using it. It certainly had the property of diminishing the secretion of pus, but in a primary amputation, bringing healthy flesh in contact with healthy flesh, he did not consider it necessary to apply either carbolic acid lotion or carbolic acid oil. With regard to a remark by Dr. Scott, that the double flap and ligature invariably did well, he (Dr. H.) had his share of surgery, and he never used the ligature, and believed he would never do so again. He used acupuncture, and all his cases did well. He believed we should adopt all that was reasonable, and not place too much faith on what was fanciful.

Dr. REDDY said it was a somewhat difficult matter to determine what a germ is. Carbolic acid was, however, not only a very powerful, but a very valuable agent. By its use, he believed, the spread of scarlet fever

in any family could be prevented to a certainty. To this end he had it freely sprinkled about, and carbolic soap used by all in the family.

Dr. DRAKE desired to know if any member had any experience in the use of the sulpho-carbolates, which was said to be a good way of administering carbolic acid. They were now largely used in typhoid fever.

Dr. FRASER gave the acid internally in five drop doses, and never saw any bad effects.

Dr. FENWICK said he had recently read a case of poisoning by carbolic acid. The patient, a female, swallowed half an ounce of Calvert's carbolic acid No. 4, insensibility rapidly ensued, and she died.

Dr. PELTIER knew from an extensive experience of the acid that it arrested suppuration and favoured cicatrization.

Dr. CRAIK, in replying to the various remarks of the previous speakers, said that with reference to the strength of the carbolic mixture, he did not wish to be understood as insisting on the proportion of one to ten being used in all cases, particularly as an external application. On the contrary, he believed that a weaker preparation would be preferable for external use, but, taking into account the harmlessness of the stronger mixture when applied to wounds and internal surfaces, and the importance of completely destroying every vestige of septic matter, he would still feel inclined to use the stronger mixture to internal parts. He thought great care should be taken in selecting a vehicle for the carbolic acid, no substance being suitable which was either difficult of absorption or poisonous when absorbed. For example, the different kinds of oils should not be used in wounds or cavities on account of their slight absorbability and tendency to become rancid. Boiled linseed oil, which was frequently used, contained a large quantity of oxide of lead, which could hardly fail to be prejudicial. Water was a good vehicle, or even glycerine, which was not irritating, especially when mixed with water. With reference to the germ theory, that was a matter which would probably always be a bone of contention, and the different conclusions arrived at would depend largely upon the peculiar bias of individual minds, but when an opponent of the theory attempted to argue against it, he should at least be logical in his conclusions. Dr. Hingston had asserted that if air were capable of producing the deleterious effects in wounds which were attributed to it by the supporters of the theory, it should do so in every case in which it had access to wounds. Such an assertion was, in his opinion, absurd, for the fact that germs were sometimes present in air did not prove that they were necessarily present under all circumstances. In Canada, at certain seasons, and in certain

localities, thistle-downs might be seen in large numbers floating in the air, and being carried with it to reproduce themselves and contaminate healthy soils elsewhere. But it would be equally absurd to argue that the air was always, and under all circumstances, loaded with thistle-downs. The fact was, that we should be guided in such cases by other evidences besides those of vision, and not jump to the hasty conclusion that because we could not see the germs, they did not therefore exist; there were other kinds of evidence which ought to convince a reasonable mind as perfectly as ocular demonstration.

Dr. HINGSTON begged to disclaim the views which had been attributed to him, and to say that he did not wish to deny the presence of impurities in the air under certain circumstances, but that pure air did not contain them. He considered that Dr. Craik's remarks about thistle-downs strengthened the view he had advanced.

Dr. CRAIK accepted Dr. Hingston's correction, and congratulated him on his apparent conversion to belief in the truth of the germ theory.

The meeting then adjourned.

Surgery.

WHISKEY AS AN ANTISEPTIC DRESSING.

In the *Glasgow Medical Journal* Dr. D. Blair recommends the use of whiskey as a surgical application. He says, I usually apply the whiskey as follows:—

To remove the foreign substances or clotted blood, the wound is first washed thoroughly with strong whiskey, it is then closed with stitches if necessary; again bathed with whiskey, and covered with a rag and bandage both saturated with the same fluid; and finally all is enveloped in gutta-percha tissue or oiled silk, and directions given to the attendants to wet the bandage from time to time with the spirits. As a rule, the first dressing is not disturbed for three or four days, and afterwards it is changed every day, or every second day, according to circumstances. The principal thing to be attended to is to have the bandage kept wet with the whiskey—but not *too wet*, or it will impede the progress of the cure. I have never seen much sloughing, and I have not once seen erysipelas occur in wounds treated in this way. Probably because

septic germs, if they exist at all, are not numerous in our hyperborean regions.

Case 1st.—J. M'P., a boy aged ten years, was amusing himself near a corn threshing machine, his hand got entangled in the wheels, and before they could be stopped, the middle finger and its metacarpal bone were crushed to pieces, the palm of the hand was lacerated severely, the ring finger was denuded of the flesh on the palmar aspect, but the bone was not broken. The boy having been put under the influence of chloroform, I removed the lacerated part and injured bone, then dressed the wound with strong whisky. The following day, when visited, the boy was sitting by the fireside, supporting his hand on a pillow laid on his knee. He was quite comfortable and cheerful, and could not be induced to remain in bed. I need not detail the progress of the case, suffice it to say that the hand healed rapidly, and I ceased attendance in three weeks.

Case 2nd.—Boy 8 years old had his hand caught between the wheels of a hay crushing machine, which was driven by a horse. Before the animal could be stopped, the hand of the boy was fixed in, and the arm drawn round the wheel so firmly that the little fellow could not be extricated until the machinery had been turned backwards. The thumb and next two fingers were torn off at their articulation with the metacarpus. The palm of the hand and inner aspect of arm up to axilla were lacerated so badly that we feared it would not be possible to save the whole arm; the metacarpal bone of the thumb was smashed and had to be wholly removed. We resolved to take away in the first place, only what was strictly necessary of the hand, and give the arm a chance of recovery. The parts were wrapped in cloths with whiskey, in the usual way, and the friends directed to wet the bandage two or three times daily. On the fourth day we removed the dressing for the first time; there was no discharge, no inflammation, no swelling. The arm looked well; the case went on uninterruptedly, and I only required to see him thrice.

In cases of chronic and scrofulous abscess, I have used whiskey as an injection, and find that it checks the discharge and hastens the cure. In a case of scrofulous abscess of the hip joint I attribute the recovery of my patient to its having been used in this way. The pain and hectic before and for some time after the abscess was opened, caused so much prostration that I had slight hopes of my patient's recovery. I persisted, however, in using the injection two or three times daily, bathed the whole often with spirits, and kept it wrapped in cotton wadding and a bandage. The stomach for a time would not tolerate solid food of any

kind, and even beef tea provoked nausea. Notwithstanding, in an incredibly short time, my patient rallied, and I had the pleasure of seeing him walk well, although the joint continued somewhat stiff.

In a singular case of abscess, situated beneath the muscles in front of the abdomen, which opened at the umbilicus, I was highly pleased with the result gained by these injections. The discharge obstinately continued, although I perseveringly applied for a considerable time poultices and lotions of different kinds; at last I resolved to inject with strong spirits, but from the peculiar situation of the abscess, and fearing inflammation might supervene, I used it very cautiously at first, but no unfavorable symptom having followed the first application, by degrees it was used more freely—two or three syringefuls at a time repeated twice or thrice daily. In a few days there was a marked improvement, and soon the discharge ceased completely, and the patient is now well.

Exophthalmic Goitre. BY J. J. CHISHOLM, M.D., Professor of Operative Surgery and Clinical Professor of Eye and Ear Surgery for the University of Maryland.

Whilst general attention is being drawn to a disease the pathology and causes of which are unknown, cases which differ from an assumed type should be carefully noted. When these become sufficiently numerous, their symptoms can be analysed and useful deductions obtained. Exophthalmic goitre is one of those obscure diseases now under investigation, its curiously combined symptoms of heart-disturbance, thyroid enlargement, and protrusion of the eyeball remaining, up to the present, unexplained. The disease is an insidious one, usually of slow approach, and of very chronic tendency,—the unsightly and annoying protrusion of the eye being a very persistent symptom.

The first prominent symptom—often the precursor of all the others, and said to be always present—is rapid and forcible cardiac action, with tumultuous palpitation from the least excitement. The frequency of the pulse is rarely below one hundred beats per minute; and the great nervous excitability of those affected, with the accompanying irritability of temper, nearly doubles the heart-beats upon trivial provocation. Organic disease of the heart is found only exceptionally. In some cases there may be hypertrophy of the organ with antheromatous deposits to the vessels, but most frequently the cardiac disturbance is purely functional and the persons afflicted are young chlorotic women with irregular or suppressed menstruation. The implication of the heart is so very constant

that it is called the invariable symptom, and to many observers is a sufficient explanation of the enlarged thyroid gland and the undue prominence of the eye,—being, in fact, the point of departure of all the accompanying symptoms, and the key to the phenomena.

The goitrous affection involves, ordinarily, the entire thyroid gland, but either lateral lobe may alone undergo enlargement; and, although this hypertrophy is a very common complication, it is not invariably present. The protrusion of the eye is not commensurate with the size of the thyroid gland. In cases where the exophthalmus is very marked the thyroid enlargement may be scarcely perceptible; and, again, in cases of huge goitres there may be no eye-symptoms.

The prominent eye-ball, with its frightened stare, is the symptom which attracts most attention. At times it protrudes so much from the orbit as to expose the greater portion of the spherical globe. This protrusion is rendered more conspicuous by the retraction of the upper lid, which widens the palpebral fissure and exposes more of the sclerotic. This blepharitic retraction, with dilatation of the pupil, is recognised as a very early symptom, and is supposed to indicate the neuropathological character of the disease, an abnormal condition of the sympathetic,—H. Muller having detected unstriped muscular fibres in the upper lid which receive nerve-influence from the sympathetic. The protrusion of the eye affects vision by stretching the optic nerve, and mechanically interferes with the movement of the ball. Ulceration of the cornea and destruction of the organ sometimes occur.

The following secondary symptoms in exophthalmic goitre are of greater or less frequency; Chloro-anæmia is nearly always present; also dyspepsia, with general debility and emaciation, with buzzing in the ears, dizziness, and fainting-spells, headache, vomiting, and deranged bowels. In females,—by far the most frequent subjects of exophthalmic goitre—there exists disturbed or suppressed menstruation. The face is often flushed, with increased temperature, and local sweating, restricted to one side when only one eye protrudes.

These various symptoms, which are more or less prominent, have from time to time attracted the attention of pathologists. Basedow, who in 1840 gave us the first succinct account of this disease, supposed chlorosis and serous effusions to be the cause. Piorry explained the phenomena as sequelæ of heart disease, with consequent interference to the returning circulation—hence protrusion of the eyeball through congestion of the orbital vessels. More recent observers, among whom are Trousseau, Remak, Recklinghausen, Friedrichs, and Gracfe, consider exophthalmic goitre a disease of the sympathetic nerve, either excited by reflex disturb-

ances from distant organs, as the uterus, etc., or by organic changes in its cervical ganglia, or by paralysis of the vaso-motor fibres coursing with the sympathetic. In autopsies, careful examination has exhibited the cervical ganglia of the sympathetic sometimes enlarged, at other times atrophic, and again apparently devoid of pathological changes, even under high magnifying powers. In some of these bodies the eyes have after death resumed their normal position, whilst in others the eyeballs continue to protrude, and in such the connective tissue which fills the posterior portion of the orbit has undergone hypertrophy.

In the following case, most of the so called invariable symptoms were wanting, making serious breaks in the chain of phenomena.

Miss A., aged 19, stout and strong, has noticed for the past five months that her neck was getting large, and that the right eye was acquiring an ugly stare. These symptoms were not connected with any special bodily derangement, nor has she suffered in any way. Her present condition is as follows: she looks pale, although she is very stout and never complains of fatigue; she states that she has never had a colour, and that she can walk many miles without any sensation of fatigue. Her digestion is good; she has a good appetite, is not troubled with constipation, and menstruates with great regularity, with a uniform loss, and without pain. She has never suffered from cardiac palpitation; her heart sounds are clear, pulse full and strong, 85 beats to the minute. She has never had flushings of the face, nor unusual sweating; the thermometer, carefully tried, detects no increased temperature. The right globe of the thyroid gland is double the size of the left, although it is not conspicuously prominent. The right superior eyelid is pinched, which prevents it from covering the protruding eyeball. When she looks up to the ceiling, the right superior lid is hidden completely by the orbit; when she turns the eye towards the floor, the lid does not cover more than one-half the exposed portion of the eyeball. When she tries to cover completely the protruding ball, the right superior lid quivers incessantly. The movements of the eyeball are somewhat impaired, the pupil is enlarged, but sight, for both near and distant vision, is perfect. Ophthalmoscopic examination shows no abnormal fulness of the retinal or choroidal vessels.

In the above cases the exophthalmos and goitre of the corresponding side of the body appeared and progressed simultaneously, but all the other symptoms so marked in by far the majority of cases—viz., cardiac, uterine, gastric, and cerebral complications, and debility—were wanting.

Medicine.

THE TREATMENT OF PNEUMONIA.

Dr. J. Hall, in the *American Practitioner* says:—In the first or congestive stage of pneumonia in plethoric subjects, in healthy, non-malarial regions, blood-letting is a valuable therapeutic agent, but in the second stage, and in malarial regions, as a rule, it is hazardous. I have not practised blood-letting nor used tartar emetic in the treatment of pneumonia for ten years, because we have other therapeutical agents that answer better, and are attended by none of the dangers incident to the use of these agents. *Veratrum viride* and *digitalis* are the remedies upon which I rely to control the undue action of the heart and arteries. In the early stage of the disease, in robust subjects, after moving the bowels with a mercurial purgative, I give Norwood's tincture of *veratrum* in four-drop doses, with ten grains of nitrate of potash, and from a fourth to a third of a grain of morphia, every four hours, increasing the tincture two drops every dose until the pulse is reduced to sixty-five a minute, or nausea and vomiting occurs. I then reduce it to four drops, and continue it until the active stage of the disease has passed by; then I stop the *veratrum*, but continue the nitrate of potash, with from one to two grains of opium and half a grain of *ipceac.*; and where there is a tendency to asthenia I add two grains of quinia to each dose. Under this treatment, frank, uncomplicated cases of pneumonia have seldom failed to terminate by resolution in from six to twelve days. But in some cases it has failed, and the fever has continued, with derangement of all the secretions, and complete hepatization of a portion of the lung tissue. In such cases I have derived great benefit from the use of mercury, *digitalis*, and opium, with free vesication over the diseased lung. I usually give one grain of calomel, with two grains of *digitalis* and one of opium, every four hours, and continue until resolution is established, or the constitutional effects of the mercury are manifested. I then discontinue the mercury and add two grains of quinia to each dose, and continue until the febrile excitement is controlled.

In asthenic pneumonia of old or delicate subjects, after opening the bowels with castor-oil or Epsom salts, I usually rely upon *digitalis*, muriate of ammonia, and opium. I give from one to two grains of *digitalis* in substance, with ten grains of muriate of ammonia and one grain of opium, every four hours, and continue until the febrile excitement is controlled; I then stop the *digitalis* and add two grains of quinia to each dose, and continue until convalescence is established.

In certain districts pneumonia is often complicated with malarial fever, and is characterized by marked remissions and exacerbations. In such cases I found a combination of quinia, digitalis, and opium to answer admirably. I usually give five grains of quinia, with one or two grains of digitalis and one of opium every four hours. In most cases this course meets every indication, and from my observation they terminate more favorably, and in a shorter time, than uncomplicated cases. I seldom use purgatives in the treatment of pneumonia after the bowels have been once thoroughly evacuated; and if necessary to open them again, I prefer saline laxatives.

Stimulants are seldom necessary, and I think are often injurious if given in the early stage of pneumonia. In the advanced stage they are valuable, and in many cases indispensable. I prefer carbonate of ammonia and brandy to all others. Nourishment is an essential element in the treatment of all protracted cases, and milk is to be preferred to all other articles of diet.

The local treatment of pneumonia is of considerable importance, especially in pleuro-pneumonia, and all other cases attended by much pain. I generally rely upon cupping and sinapisms; if they fail to afford relief, I inject a solution of morphia under the skin, over the seat of pain; from a fourth to half a grain is sufficient. The inhalation of chloroform is also efficacious in such cases, and not only relieves the pain, but mitigates the fever, and I am inclined to think facilitates resolution of the inflammation. Warm applications are valuable in all cases, and should always be used when more active measures are not deemed necessary. In the advanced stage of the disease, when resolution is tardy, and effusion of serum takes place in the chest, I resort to free vesication. I have applied the tincture of iodine with very good effects in mild cases, and especially in the pneumonias of children—painting the entire walls of the chest two or three times a day. I have also used a liniment, in the cases of children and delicate females, composed of olive oil, turpentine, and ammonia.

Expectorants, as a rule, are not advisable, I never use them, except in the advanced stage of the disease, when the bronchial secretion is deficient and the cough troublesome. The position of the patient should be frequently changed in protracted cases, especially in children. Ventilation of the sick chamber should be thorough, and the temperature uniform at about sixty-five degrees of Fahrenheit.

Canada Medical Journal.

MONTREAL, DECEMBER, 1870.

A case of a most extraordinary character, resulting in an extraordinary charge of manslaughter returned by a coroner's Court, against a physician of standing in his locality, has recently been disposed of by the grand jury, before the Court of Queen's Bench, held in the town of St. Johns, P.Q., who in our opinion very justly ignored the bill. We give the circumstances as related to us by one of the medical men examined by the Crown, and who was summoned to give testimony, as a skilled witness. Dr. Robert C. Morehead was called to attend a Mrs. Bertrand in her confinement, on the morning of the 13rd November; he remained with his patient and delivered her between four and five o'clock of the afternoon of that day, of a living child. Shortly after her delivery, hæmorrhage set in, and the Doctor proceeded to extract the placenta: on making traction on the cord, it gave way; when he was about to introduce his hand to remove the placenta, he was resisted by his patient, and in this she was supported by her husband, and some female friends in the house. The friends then sent for Dr. Larocque, some miles distant and on his arrival he advised the husband to send for the priest, to administer the last rights of the church, as the woman was dying. No attempt was made by Dr. Larocque to remove the placenta or arrest the hæmorrhage. As might be expected, two hours after the arrival of this sapient adviser, the poor woman died. Dr. Morehead remained with the patient to the last. In this latter particular we think Dr. M. was in error. He had done his duty, he had suggested and attempted to perform what was the only rational means of saving the woman's life and these attempts had been forcibly resisted by the patient, her husband and friends. Having therefore waited until another physician had been summoned, and finding that that individual did not coincide with him as to the propriety of acting, and acting with promptness, he should simply have retired, and thus thrown the full onus and responsibility of the case on Dr. Larocque's shoulders. The next stage in the proceedings was, that Dr. Larocque, with two other medical friends, proceeded to make a post mortem examination of the body before burial, and on their report Dr.

Morehead was arraigned before two magistrates, but these gentlemen seeing the whole proceedings were irregular, submitted the case to the Coroner of the District. A jury of twenty-three persons was empaneled, the body disinterred, and the three worthies who had before performed the post-mortem, were ordered by the jury to repeat their examination and give before them the results. The jury after a patient hearing, returned a verdict that the testimony, and especially that of the medical men, established that Robert C. Morehead, was guilty of criminal conduct, the grossest ignorance, and most criminal neglect. The coroner issued his warrant and Dr. Morehead was arrested and lodged in gaol. The day following the case was cited before Mr. Justice Monk of this city who issued a writ of *habeas corpus* and liberated Dr. Morehead on bail. These, we believe, to be substantially the facts of this case. They are the facts as given to us, and we lay them before the profession without comment. This we would, however, say that we think Dr. Morehead has a just and good cause of action for damages and defamation of character against Dr. Larocque, and we would very much like to see the matter tried and carried through to the very utmost. It has fortunately very seldom been our lot to record a similar case of so gross and unusual ignorance, not against Dr. Morehead, but against his opponant Dr. Larocque, as it was manifestly Dr. Larocque's duty to second his confrere by resorting to all means in their power to arrest the hæmorrhage, which result more than likely would have been attained on remeal of the placenta.

 ERRATA.

In the article on "The use of Amalgam, &c.," in the November number of the Journal, page 196, read Mr. F. G. Callender, member of Royal College of Dental Surgeons, and professor of Dentistry at the same college.

Page 203, read Mr. W. G. Beers says (all amalgamists say the same, and I may remark that they are only a repetition of the stale arguments of twenty or thirty years since] that those who use amalgam, &c.

Every Physician in Canada, should use Lindsay & Blackiston's Visiting List. They are compact, and will save their cost, a hundred times over in the course of a year. For sale by Dawson Bros.

We perceive, by the *American Journal of Dental Science*, that our worthy fellow-townsmen, H. M. Bowker, Esq., was elected a Fellow of the American Academy of Dental Science at the annual meeting of that body, held in the City of Boston in September last.

Medical News.

MEDICAL COUNCIL.

PRIMARY AND FINAL EXAMINATIONS, APRIL, 1871.

The Examinations will begin at 9 o'clock on the morning of Tuesday, the 4th day of April, and will continue till Wednesday the 12th. Students intending to present themselves at the above examinations must make application to the Registrar, enclosing all certificates, tickets, &c., before Monday, the 21st day of March, 1871. The certificate of no medical practitioner of Ontario will be recognized, whose name does not appear in the Medical Register. Students are requested not to send superfluous tickets, as no record will be kept of any others than those which are requisite to procure admission to the examinations. Due notice will be given to students of the place of holding the examinations, and forms will be furnished through the secretaries of the various schools, upon which to make application to the Registrar. Students are requested to bear in mind that no exceptions can possibly be made to the strict requirements of the curriculum.

PROGRAMME OF EXAMINATIONS.

Tuesday, April 4th.—9 to 11 a. m.; Theoretical Chemistry. 11.30 a. m. to 12.30 p. m.; Practical Chemistry. 3 to 5 p. m.; Medical Diagnosis and General Pathology.

Wednesday, 5th.—9 to 11.30 a. m.; Operative Surgery and Surgical Pathology. 3 to 4.30 p. m.; Operative Midwifery.

Thursday, 6th.—9 to 11 a. m.; Toxicology and Medical Jurisprudence. 3 to 4.30 p. m.; Physiology. 5 to 6 p. m.; Sanitary Science.

Friday 7th.—9 to 11 a. m.; Materia Medica and Therapeutics. 2 to 3 p. m.; Midwifery, other than Operative. 3.30 to 4.30 p. m.; Botany.

Saturday, 8th.—9 to 11 a. m.; Theory and Practice of Medicine. 11.30 a. m. to 12.30 p. m.; Surgery, other than operative. 8 to 5 p. m.; Descriptive Anatomy. 5.30 to 6.30 p. m.; Surgical Anatomy.

BOARD OF EXAMINERS.

C. M. Covernton, M.D., M.R.C.S. Eng., Physiology; J. H. Sangster, A.M., M.D., Chemistry; J. L. Lizars, M.R.C.S. Eng., Surgery; H. H. Wright, M.D., Medicine and Medical Pathology; J. Sweetland, M.D., Medical Diagnosis and Toxicology; M. Sullivan, M.D., Anatomy; Wm. Hope, M.D., Midwifery; H. F. Tuck, M.D., Materia Medica and Therapeutics; *D. Campbell, M.D., L.R.C.S. Eng., Medical Jurisprudence; *G. C. Field, M.D., Surgical Pathology; *S. S. Cornell, M.D., Botany; *George A. Carson, M.D., Sanitary Science.

MATRICULATION EXAMINATIONS.

The next Matriculation Examination will be held on the first Wednesday and Thursday in April, 1871, in Toronto and Kingston, at the Grammar Schools of the respective places. Gentlemen are requested to give notice six days before the examination, to the examiner before whom they intend to present themselves, stating the "optional subject" in which they wish to be examined.

Examiners.	{	A. WICKSON, M.A., LL.D., Toronto. S. WOOD, M.A., Kingston.
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A LEGION OF DOCTORS.

Seventy-four thousand doctors! Think of it. All this number in our country, according to the present census, unless the newspapers inform us falsely. In 1860 there were fifty-five thousand,—an increase of 19,000 in ten years, or nearly two thousand a year.—*Medical and Surgical Reporter.*

TESTING THE PURITY OF HYDRATE OF CHLORAL.

The purity of hydrate of chloral may, it is said, be tested by means of a concentrated solution of potash. The pure hydrate does not colour this at all, or at most only a feeble yellow, and gives forth the pure smell of chloroform. Should the liquid assume a brown colour, and the smell of chloro-acetic acid be combined with that of chloroform, or should gases of a pungent odor be developed, which is not seldom the case, the product is impure and unfit for use.

NAVAL MEDICAL SERVICE.

Dr. Thomas J. Alloway, of Montreal, and a graduate of McGill College, passed the examination for admission to the Naval Service held at the London University, between the 8th and 11th of August last. He received 1,875 marks—the highest being 2,435, and the lowest 1,321.

DISEASES, ACCIDENTS, &c., TREATED DURING THE YEAR IN THE HOSPITAL.

DISEASES, &c.	Discharged		DISEASES, &c.	Discharged	
	Discharged	Died.		Discharged	Died.
Abortio.....	1	0	Entropion.....	5	0
Abscessus Var.....	33	0	Epilepsia.....	3	0
" Cerebri.....	0	1	Epistaxis.....	3	0
" Hepatis.....	0	1	Epithelioma Vulvæ.....	0	0
Ambustio.....	8	1	" Var.....	6	0
Amenorrhœa.....	2	0	Erysipelas.....	11	0
Anæmia.....	12	0	Erythema.....	3	0
Anchylosis.....	3	0	Favus.....	4	1
Aneurisma.....	1	1	Febricula.....	40	0
Angioloecitis.....	1	0	Febris a potu.....	14	0
Anus Occlusus.....	2	0	" Intermittens.....	3	10
Apoplexia.....	1	3	" Miliaris.....	1	0
Arthritis Acut.....	1	0	" Puerperalis.....	1	0
" Chr.....	3	0	" Typhoides.....	31	0
Ascites.....	2	0	" Typhus.....	2	0
Asthma.....	2	0	Fistula in Ano.....	3	0
Atresia Iridis.....	3	0	Fractura Clavic.....	2	0
Bronchitis Ac.....	32	0	" Costarum.....	5	2
" Ch.....	18	0	" Cranii Co.....	0	0
Bubo.....	8	0	" Cruris.....	5	2
Bursitis.....	5	0	" Cruris Co.....	1	0
Calculus Vesicæ.....	1	0	" Femoris.....	7	0
Carcinoma Facies.....	1	0	" (ununited).....	1	0
" Linguae.....	4	0	" Fibula.....	7	0
" Mammae.....	3	1	" Humeri.....	3	1
" Ovarii.....	0	1	" " Co.....	0	0
" Penis.....	0	1	" Maxil. Infer.....	3	0
" Recti.....	3	0	" " Super.....	1	0
" Uteri.....	1	1	" Oss. Metacarp.....	2	0
" Ventric.....	0	2	" " Metatars.....	1	0
" Vertebrarum.....	0	1	" " Co.....	1	1
" Var.....	4	1	" Pelvis.....	0	0
Caries.....	8	0	" Phalang Co.....	1	0
Cataracta.....	13	0	" Radii.....	4	0
Cellulitis.....	7	0	" " et Ulnæ.....	2	0
Cerebritis Ch.....	2	2	" " Co.....	1	1
Cholera Canadens.....	2	1	" Scapulae.....	1	0
Chorea.....	1	0	" Tibiae.....	1	0
Cicatrix.....	2	0	" Ulnæ.....	1	1
Concussio Cerebri.....	3	0	" Vertebrarum.....	0	1
Conjunctivitis.....	4	0	Gangrana.....	1	0
Concussio.....	6	0	Gastrodynia.....	5	3
Contractio Genu.....	1	0	Gelatio.....	4	0
Contusio.....	27	0	Glaucoma.....	3	0
Cystitis Ac.....	10	0	Gonorrhœa.....	13	0
" Ch.....	2	0	Hæmatocele.....	1	0
Debilitas.....	26	0	Hæmoptysis.....	3	0
" Post Partum.....	3	0	Hæmorrhoides.....	3	0
" Senilis.....	0	1	Herpes.....	1	0
Delirium Tremens.....	6	2	Hydrocele.....	6	1
Dementia.....	5	0	Hydrothorax.....	0	0
Diabetes.....	0	1	Hypopion.....	1	0
Diarrhœa.....	30	3	Hysteria.....	8	0
Dysenteria Ac.....	14	1	Icterus.....	1	0
" Ch.....	1	0	Impetigo.....	5	0
Dysmenorrhœa.....	5	0	Iritis.....	4	0
Dyspepsia.....	21	0	Keratitis.....	13	1
Ebriositas.....	1	0	Laryngitis Ac.....	3	0
Eclampsia Puerp.....	1	0	Lepra.....	1	0
Ectropion.....	2	0	Leucoma.....	4	0
Eczema Ac.....	6	0	Leucorrhœa.....	3	0
" Ch.....	1	0	Luxatio Humeri.....	2	0
Emphysema Pulm.....	1	0	" Phalang Co.....	1	1
Enteritis.....	2	2	" Radii Co.....	1	0

DISEASES, &c.	Discharged.	Died.	DISEASES, &c.	Discharged.	Died.
Mania	2	0	Scabies	1	0
Mastitis Ac.	2	0	Scarlatina	5	2
Meningitis Ac.	0	1	Sciatica	5	0
Menorrhagia	5	0	Sclero-Conjunc.	1	0
Metritis	4	0	" Keratitis	1	0
Metropéritonitis	1	0	Sinus	2	0
Molluscum	1	0	Staphyloma	3	0
Morbili	7	0	Strabismus	3	0
Morbus Brightii	14	3	Stricture Recti	1	0
" Cordis	14	7	" Urethra	3	0
" Coxæ	5	1	Subluxatio	10	0
Myelitis Ch.	3	0	Sycosis Menti	1	0
Necrosis	4	0	Synblepharon	1	0
Nephritis Ac.	5	1	Syncope	1	0
Neuralgia	9	0	Synovitis Ac.	9	0
Ophthalmia Scrof.	2	0	" Chr.	3	0
" Tarsi	2	0	Syphilis, Ac.	35	0
Orchitis	9	0	" Ch.	19	0
Ostitis Ac.	1	0	Thrombosis	1	0
Ostitis	1	0	Tonsillitis	8	0
Oxaluria	1	0	Torticollis	1	0
Ozæna	1	0	Toxicatio	2	0
Palatum Fissura	3	0	Trachoma	13	0
Paralysis, Partial	11	0	Tumor Abdom.	2	1
Paronychia	4	0	" Antri.	1	0
Periostitis Ac.	5	0	" Colli	1	0
Peritonitis	0	1	" Cystic	2	0
Phagedæna	1	0	" Mammae	2	0
Phlebitis	1	0	" Meat. Uria.	2	0
Phlegmasia Dolens	2	0	" Oculi	1	0
Phthisis	39	14	" Ovarii	0	1
Phymosis	1	0	" Scroti	1	0
Pleuritis	7	1	" Uteri	1	0
Pleurodynia	8	0	" Vulvæ	1	0
Pleurœpneumonia	7	0	Ulcus Var.	54	0
Pneumonia	20	6	" Corneæ	15	0
Polyypus Uteri	1	0	" Gastric	1	1
Prolapsus Uteri	1	0	" Iodens	1	0
Pterygium	1	0	" Uteri	3	0
Pyæmia	0	3	Variola	18	2
Retinitis	2	0	Varioloid	10	0
Rheumatism Ac.	41	2	Vulnus	26	0
" Chr.	14	1			
" Musc.	18	0			
			Total	1188	93

OPERATIONS, &c., DURING THE YEAR.

Major Operations.	Minor Operations.	
Amputation of Thigh	Amputation of Fingers	12
" " Leg.	" " Toes	8
" at Shoulder Joint	Exciso " Metatarsal Bone	1
" of Breast	" " Metacarpal Bone	1
" at Ankle Joint (Symes')	" " Lachrymal Gland	1
" of Foot (Hey's)	" " Tumors Cystic	12
Excision of Axillary Cancer	" " Fibrous	2
" " large Mammary Tumor	" " Fatty	2
" " Tumor of Neck	" " Various	5
" " Scirrhus Tumor of Leg.	" " Epitheloma of Face	2
" " Tongue	" " Jacob's Ulcer	1
" " Uterine Tumor	" " Phalanx	1
Paracentesis Abdominis	Operation for Entropion	5
Perineal Section (Symes')	" " Ectropion	5
Extraction of Cataract	" " Cure of Hydrocele	3
Laryngotomy	" " Imperforate Anus	2
	" " Pterygium	1
	" " Fistula in Ano	1
Total		35

Operation for Staphyloma (Critchett's).....	3	Iridectomy.....	8
“ “ Strabismus.....	42	Staphylorrhaphy.....	2
“ “ Plastic for Cicatrix.....	3	Tenotomy.....	2
“ “ for Lacrymal Fistula (Bowman's).....	1	Brisement Forcé.....	1
“ “ Ununited Fracture.....	1	Catheterism of Nasal Duct.....	20
“ “ Web Fingers.....	1	Injecting Bursa Patella.....	2
“ “ Symblepharon.....	1	Reduction of Paraphymosis.....	3
Ligature of Hemorrhoids.....	6	Circumcision.....	4
“ “ Erectile Tumor.....	1	Venesections.....	2
Removal of Foreign body.....	9	Vaccinations.....	48
“ “ Sequestrum.....	3	Catheterisms.....	112
Evulsion of Nail.....	3	Cupping.....	18
“ “ Nasal Polypus.....	2	Teeth extracted.....	267
Tapping Hydrocele.....	6	Incisions, various.....	204
Cauterization of Cystic Tumor.....	2	Wounds dressed.....	486
Keratonixis.....	1		
		Total.....	1299

FRACTURES TREATED DURING THE YEAR.

	<i>In-door.</i>				
Simple.....	49	“ “ Clavicle.....	12		
Compound.....	8	“ “ Fibula.....	1		
		“ “ Humerus.....	4		
		“ “ Phalanges.....	2		
Total.....	57	“ “ Radius.....	17		
		“ “ “ and Ulna.....	7		
		“ “ Ribs.....	3		
		“ “ Scapula.....	1		
		“ “ Thigh.....	1		
		“ “ Ulna.....	1		
Fracture of Acromium.....	1			Total.....	50

DISLOCATIONS REDUCED DURING THE YEAR.

Dislocations of Shoulder.....	6
“ “ Compound of Phalanx.....	1
Total.....	7

CONSULTING PHYSICIANS DURING THE YEAR.

GEORGE W. CAMPBELL, ESQ., A.M., M.D. | WILLIAM SUTHERLAND, ESQ., M.D.
ROBERT CRAIK, ESQ., M.D.

ATTENDING PHYSICIANS DURING THE YEAR.

During first Quarter.....	DRS. FRASER and REDDY.
“ second Quarter.....	“ SCOT and WRIGHT.
“ third Quarter.....	“ MCCALLUM and FENWICK.
“ fourth Quarter.....	“ HOWARD and DRAKE.

RESIDENT MEDICAL OFFICERS DURING THE YEAR.

GEORGE ROSS, A.M., M.D., House Surgeon; T. G. RODDICK, M.D., Assist. House Surgeon
T. A. RODGER, M.D., Apothecary.

MR. EDWARD RUSSELL, House Steward. | MISS FORBES, Matron.