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THE CANADA LANCET,

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Original Communications.

ON THE CAUSES AND TREATMENT OF DELAYED UNION IN FRACTURES.

BY JAS. CATTERMOLE, M.D., L.S.A., LONDON, ONT.

During a railway accident on the 3rd of February, several years ago, Mr. C., aged thirty-two, sustained fracture of the humerus in its upper and lower third. The patient was promptly attended to by two surgeons of acknowledged ability, who, after a brief period, duly put the limb up in splints. At the end of eight weeks a fair amount of union had taken place in the fracture near the elbow, but none whatever in that of the superior third of the bone. A starch bandage was now applied for some weeks, but without benefit. The surgeons now deemed it necessary to scrape and puncture, subcutaneously, the ends of the bone with a tenotomy knife. This not answering expectations, a seton was passed between the ends of the bone. About five months after the accident Mr. C. came under my care, wearing the seton, which I allowed to remain for a time, trusting it would finally produce sufficient local action. In this, however, I was disappointed, and at length determined to try the time-honoured plan of friction. To accomplish this, a weight of sixteen pounds was attached to the hand and wrist of the lame arm, which had the effect of bringing down the lower fragment into apposition with the lower end of the superior. On every second or third day for a fortnight, gentle swinging of the weight was used each time for about fifteen minutes, or until some uneasiness was produced. This mode of treatment was continued, gradually increasing the force of the friction, for four or five weeks longer. For the last three weeks an operation every fourth or fifth day was deemed sufficient. The arm had now become somewhat swollen and painful, with just sufficient increased vascular action to hold out more promising results. A long, heavy, hollow, box splint, fitting the back and sides of the limb, was now applied, extending from the shoulder to the hand, the whole allowed to hang unsupported, so that the weight of apparatus, fore-arm and hand might keep up sufficient extension for the adjustment of the upper and lower fragments. The arm was left undisturbed in this splint for six weeks. On removing it, we were gratified to find the stubborn fracture had firmly united, and the patient shortly afterwards returned to active employment on the railroad, where he worked steadily for just thirty days, when he was again overtaken by misfortune. On going home from his work in the darkness of the evening, he unluckily fell into a cow-catcher and broke the middle third of the same unfortunate bone, nearly three inches below the old fracture of the upper third. But little trouble was experienced by this last affair, as, under the ordinary treatment, firm union took place in forty-five days, and again the patient resumed his duties on the road, and still remains there, a much esteemed employee of the same company.

Notwithstanding the amount of satisfaction experienced on the termination of cases similar to the above, yet nothing can be more vexatious to the surgeon than the occurrence of delayed union, in any case of fracture entrusted to his care. The limb may have been quite properly put up, and from time to time sufficiently examined without unnecessary disturbance; in every way treated secundem artem; the patient in apparent good health; the case, in fact, promising recovery in the usual period allotted for cure. The dressings are removed: the parts present a fair appearance as to position; ends of fragments apparently in apposition; the contour of the limb symmetrical; but, on handling it motion is discovered, and, to the dismay of the surgeon, he finds that he has an ununited fracture, and that to deal with. Such an unlooked for result may occur to the most skillful practitioner, and that indeed without any obvious pre-existing condition to render him apprehensive of non-union. In most systems of surgery, many, possibly too many, causes are assigned for the failure of ossific deposit, and the long list of causes is followed by one still longer of remedies, or plans of treatment. Considerable experience has led me to believe that the causes of deficient deposit are

far more limited than surgical writers are in the habit of enumerating. Of these conditions, constitutional and local are the principal. From the first we may have general physical debility and consequent atony of the injured parts; a lack of vascular action and supply, not only in the broken bone, but also in other parts of almost paramount importance, namely; the structures and soft tissues immediately surrounding the broken fragments. As to the local causes; occasionally it may be somewhat difficult to arrive at their precise nature, but, as Gross observes, it is not improbable that their influence has been greatly exaggerated.

Some writers would fain persuade us to believe that the absence of reparation in these cases altogether depends on the relative situation of the fracture and nutrient vessels of the bone, as for instance, that fractures in the upper part of the shaft of the humerus fail to receive sufficient nourishment in consequence of the downward course of the nutrient arteries, and in like manner we are given to understand that when the lower ends of the bones of the fore-arm, or femur, are broken, that we must expect union to be more or less delayed, because the arteries of the bone take their course upwards, and thus forsake the damaged parts. But it is certainly fortunate as well as true that in spite of the opposite course of these nutrient vessels, union is generally obtained in very good time. The soundness of such a theory is very questionable, for many of the best practical surgeons tell us that they have met with cases of delayed union where the fractures have occurred in those parts of the bone usually traversed by the nutrient arteries, about as often as in parts which are said to labour under the disadvantages of deficient supply, and that, in either situation, the length of time required for final and complete consolidation has been about the same. With this statement I fully concur, after experience in and observation of these matters for the last forty years. Norris, in his analysis of forty-one cases, found that twenty-seven were in the direction of the nutritious arteries, and only fourteen in the parts *supposed* to be less nourished.

In these unpromising cases, it is always expedient to obtain consolidation by the safest and most simple method, studiously avoiding all extreme measures, for the mere irritation produced by a seton will occasionally lead on to diffuse inflammation, suppuration and very disastrous results. Excision is still more hazardous, for, although the operation has been successful in some cases, in others it has proved fatal to the patient; moreover, instances are recorded in which these operations have been well borne, but yet entirely failed to cure the fracture. A very interesting case of the sort is detailed in part forty-seven of Braithwaite's Retrospect.

Celsus, in his eighth book, says:—"If the fracture is of long standing, the limb must be extended to create a fresh injury, the bones must be separated by the hand, and the surfaces may be roughened by rubbing against each other, and if there be any fatty substance it may be abraded, and the whole may become as it were recent."

This plan of the old Roman doctor has been much too sparingly employed, even down to the present time. Some surgeons of the present day know its value, and generally adopt it in the treatment of their cases; but the majority incline more to the high pressure system, and regard the good old plan as too slow and tedious, and though it may appear so to them, it is certainly, on the whole, by far more reliable than any other method, when patiently and properly carried out, having in very many instances succeeded after all other means had utterly failed.

STRANGULATED FEMORAL HERNIA.—SUCCESSFUL OPERATION AFTER TEN DAYS' STANDING.

BY WELLINGTON N. CAMPBELL, M.D., NEW YORK.

Late House Physician and Surgeon to the 99th street Hospital; late Ambulance Surgeon to Bellevue Hospital; late Assistant Sanitary Inspector to the board of Health; Attending Physician to the New York and Northern Dispensaries.

On the morning of the 22nd of December, 1877, I was called to see W. W. Bingham, aged 53 years, painter, and found him suffering from a tumor in his left groin, which, on examination, proved to be a strangulated femoral hernia. The patient states that the rupture first appeared about eighteen months ago, after lifting some heavy merchandise upon a truck; but he had always been able to reduce it, by lying in a prone position and performing taxis, up to the 12th of December, 1877, when, painting at a height that required some effort to

reach, he found that it had suddenly enlarged, and from which he experienced special pain for the first time. Upon going home he performed taxis as usual, while in the prone position, but was unable to return it. He vomited from this date (12th) to the 17th, when he took two cathartic pills to move his bowels, and applied a mustard plaster over the tumor; but, finding no relief, he applied to a physician in Jersey City (18th) at which time he had stercoraceous vomiting, and he advised him to go to the hospital. He came to New York on the 19th, and I saw him on the 22nd. I found him prostrated from protracted efforts to vomit, and deemed it inadvisable to use prolonged taxis in attempts to reduce it, on account of its having been strangulated for so long a period. Having called to my assistance Drs. Dennis, Williams, Crawford, Schapps and Bargar, of this city, we immediately proceeded to etherize the patient, and when under its influence performed gentle taxis, but being unable to reduce it, proceeded to the operation without delay. Upon cutting down to the sac, we found it deeply congested, being of a reddish-purple color, and the fact of strangulation having existed for so long a time, we thought it safer to enter it, when we found, as we had previously diagnosed, an entero-epiplocele; a coil of the sigmoid flexure of the colon, was enveloped by a segment of the omentum, and was of a purplish colour; but no signs of decomposition had taken place, and there was scarcely any serum in the sac. The protruding mass was tightly grasped by Gimbernat's ligament. The stricture was divided by cutting upwards and inwards, and the contents of the sac returned with but little difficulty. Having cleansed the wound thoroughly, three interrupted carbolized silk sutures were applied, leaving the most pendant portion open for drainage; then applied a compress dipped in tepid water, enveloped by a spica bandage. One grain of opium was administered every two hours during the night and every four hours during the day, as occasion required, until the 25th. On the day following the operation (23rd), pulse 72, tem. 99¼; 24th, pulse 70, tem. not taken; 26th, bowels not having moved was given an enema of oat-meal gruel and castor oil, which produced a movement that evening. Patient was kept on a fluid nutritive diet, consisting of corn-starch and arrowroot, farina, barley-water and ice for a day or two, then allowed beef-tea cold. The sutures were removed on the fourth day, and a poultice of linseed meal applied daily, for three days, to aid the suppurative process; then renewed the warm-water dressing with spica bandage, the limb being flexed and retained in that position to relieve all tension. There were no signs of peritonitis, except slight tympanitis, which, I presume, was due to the opium administered, and which readily yielded to the application of turpentine stupes applied over the abdomen. January 13th, 1878,—Wound has healed, and the patient is walking about, feeling perfectly comfortable. The peculiarities of this case, as you will perceive, are as follows:—

1st. The fact of its being a femoral hernia in the male.

2nd. There being no gangrenous condition of the intestine, even after ten days strangulation.

DOUBLE OVARIOTOMY.

BY A. GROVES, M.D., FERGUS, ONT.

In October, 1876, Mrs. M., aged 35 and mother of seven children, consulted me with reference to an enlargement of the abdomen, which she had first perceived several months before. She had no pain, but noticed that the enlargement was steadily increasing. On examination, I found a tumor of the left ovary, about six inches in diameter. As the tumor gave very little trouble, I advised that nothing be done except general tonic treatment. In September last, seeing that the tumor had increased until she was stouter than she had ever been before her confinements, and that her health was giving way, I advised immediate operative procedure, to which she consented. On drawing out a little of the fluid, it gave more than two-thirds of its bulk of albumen. The operation was arranged for the 18th of September, and for a considerable time previous to that, she took iron in moderate doses. This seems to me to be a means of great importance for the prevention of erysipelatous forms of inflammation, and it certainly invigorates the system and increases the reparative power of the blood. On the day appointed, being the tenth after the cessation of the menstrual flow, I proceeded to operate in presence of Drs. Henderson and Carter, of Arthur; Thom and Tamblyn, of Douglas, and Orton, Griffith and Johnson, of Fergus.

Chloroform was carefully administered by Dr. Thom. An incision about six inches in length was made between the umbilicus and pubes, and on opening into the peritoneum the tumor at once bulged forward. It was now found that there were no adhesions, except to the mesentery, and that these were easily detached. Having tapped the tumor with a large trocar and canula, sixteen pints of dark fluid were withdrawn. The sac now easily slipped out of the abdomen. A great number of small cysts existed in the wall of the parent cyst, but none of them required puncturing. The pedicle, which was long and moderately slender, was tied in two parts with a strong hempen ligature, and divided with the ecraseur. The ends of the ligatures were drawn out of the lower angle of the wound, and the pedicle dropped back into the abdomen. On examining the right ovary, a cyst was found in it about the size of a marble, and consequently it was also removed, the pedicle being treated in a similar manner to that on the left side. After carefully sponging out the abdominal cavity and inserting a rubber drainage tube, the abdominal wound was brought together by six silver plated needles, passed so as to include the peritoneum, and wound round with thread in the ordinary figure of 8 form. A large compress of batting and a bandage completed the dressing. The patient was now put to bed, in one hour from the time she began taking chloroform, and a hypodermic injection of morphia given. Six hours afterward, great pain and soreness complained of, which was considerably allayed by half a grain of morphia. Patient slept part of the night, and said she felt well. On the third day persistent vomiting came on, which continued until the following morning; blood also came from the vagina, and did not cease for two days. The case after this progressed most favourably. Three of the needles were taken out on the seventh, and the rest on the eighth day. On the fourteenth day patient sat up. On the 24th of October one of the ligatures came away, and between this time and November 18th the remaining three came away. Since that time she has remained in the best possible health and spirits.

- DR. BIGELOW reports in *The Practitioner* a case of tetanus caused by a rusty nail in the foot, which was relieved in less than thirty minutes by introducing a drachm of chloral hydrate into the wound after it had been enlarged by incision.

A CASE OF ARSENICAL POISONING TREATED BY DIALYSED IRON.

BY JAMES HAYES, M.D., C.M., SIMCOE, ONT.

The notes of this case I had prepared some time ago for publication, but laid them aside, and had almost forgotten them until I read the report of a similar case in the January number of the Lancet.

About six o'clock, on the evening of November 14th, last, I was summoned by Mrs. B., to see her char-woman, who, it was stated, had accidentally taken arsenic. Placing a bottle of (Wyeth's) Dialysed Iron in my pocket, I proceeded at once to the house and immediately administered a powerful emetic to the patient, and while this was producing a free evacuation of the contents of the stomach, I learned the following particulars:—

Mrs. B. had purchased a package of arsenious acid, for the purpose of destroying mice, and, this morning, had spread at least half a teaspoonful of the poison upon a slice of bread and butter, and placed it on a shelf in the pantry. During her absence from home for a short time, late in the afternoon, the woman went into the pantry and, seeing the bread and butter and not being aware that there was any poison upon it, ate the whole. She afterwards stated she thought it was rather gritty. On Mrs. B.'s return a few minutes after, the woman complained of being sick, with cramps in her stomach, and wished some ginger tea to relieve them. Mrs. B. then went to the pantry for the ginger, when she found the poisoned bread gone. On asking the woman, Mrs. B. was horrified to learn that she had eaten it. These were the particulars I learned after my arrival.

As before stated, I administered the emetic and promoted vomiting by large draughts of warm water. After the stomach had been thoroughly emptied, I gave a tablespoonful of dialysed iron, diluted with water, which was rejected in a few minutes. I then repeated it in thirty drop doses every twenty minutes for two hours, and afterwards at longer intervals. About two hours after my arrival, alarming symptoms of collapse showed themselves; the pulse became extinct at the wrist; the skin cold and clammy, etc.: but by giving brandy freely, with the application of hot bottles and friction, she began to revive, and went on gradually improving until, in about ten days, she appeared to be restored to her accustomed good

health. The only unpleasant symptoms she complained of during her convalescence were weakness, thirst, and a burning sensation in the stomach.

I attribute this woman's recovery entirely to the Dialysed Iron. It appears almost incredible that recovery should have taken place, considering the amount of arsenious acid swallowed. There must have been fully half a teaspoonful of the acid, which was lying in the stomach from half an hour to one hour before I saw her.

I have used this preparation (Dialysed Iron,) in very many cases, as a tonic, where other preparations of iron could not be tolerated, and always with satisfaction to myself and patients. I consider it a valuable addition to our materia medica, and trust that many of our nauseous drugs may be put into as palatable a form as this preparation of iron.

Correspondence.

To the Editor of the CANADA LANCET

SIR :—My attention having been called to a letin the Canada Lancet for January, headed "G. W. R. Medical Tariff," and signed "D. D. P.," I wish to make a few comments thereupon.

In the first place, it is not accurate to state that "The G, W. R. Co. has adopted and officially promulgated a singular tariff of medical fees," etc., etc. What has been done is as follows :—It has been my earnest wish ever since I came to Canada, frequently expressed and still more frequently thought over, to establish a Provident Society for the men employed by the company, both for their own physical benefit and for the indirect advantage of inculcating habits of thrift. Obstacles, however, of various sorts prevented the idea from taking a practical shape until last autumn, when, after a great deal of consultation amongst those most interested in the matter, and with the promise of very material aid from the company, the "G. W. R. Provident Society was finally established. The expenses of management have, on my recommendation, been assumed by the company ; but the Constitution and Rules have been drawn up and a tariff of fees adopted by the managing committee, composed chiefly of delegates from the different departments, and ratified by the members of the society, and for them the company, as such, is not responsible.

That the fees are small according to the present scale, must be admitted as well as regretted. A young institution of this character is naturally not in a position to offer, at first, very high remuneration for any services ; but as it may be expected that the experience of a year's working will show the advisability of making alterations in some details, so it may reasonably be expected, in view of the fact that 2,300 men have already joined the society and that the number is steadily increasing, that the committee will also be able at that time to revise the scale of fees.

Your correspondent affirms that the small fee offered by the society is supplemented only "by a free ride over the line to and from their patient." Let me say that the medical officers who so kindly responded to the application made by them by promptly accepting the office offered to them, have a free pass extending for a considerable distance beyond the limits of their professional district ; and they also know that a trip pass to any point on the line is at their service whenever they choose to make application for it—advantages which, I am sure, are very considerable, and are appreciated by the profession. In addition, these gentlemen who act for the Provident society are also recognized as medical officers of the company in the same district, and will be entitled to ordinary medical or surgical fees when their services are required.

Another correspondent, in your issue for February, states very candidly that he cannot see the difference between accepting an appointment from a railway company and from a lodge or an order on the same low terms, and I am encouraged to think that the majority of medical men take the same view, and are not inclined to agree with D. L. P., as considering the fees offered by the G. W. R. Provident Society as "an insult to the profession." At least, whether the result be due to an appreciation of the other advantages accruing to them, or from expectation that the fees may be increased, or from an honest desire to assist in carrying out a good work, I am happy to state that, out of twenty-eight gentlemen to whom I, on behalf of the company, offered the appointment of District Medical Officer, two only have declined to accept it.

Yours faithfully,

F. BROUGHTON.

HAMILTON, Feb. 6th, 1878.

ABSENCE OF ANUS AND PERINEUM.

To the Editor of the CANADA LANCET.

SIR;—I send you a report of the following case which is interesting chiefly on account of its anomalousness, and the adaptability of nature to preternatural anatomical conditions.

On December 30, 1876, I was called to an obstetrical case a few miles away. My patient, Mrs. C——, was rather less than medium-sized; weight about 100 lbs., aged probably 22 years, and had been married two years. Digital examination revealed a double os uteri, with but a single uterus. These two mouths—or rather what appeared to be two, were caused by a portion of the uterine tissue stretching across the otherwise normal os, and thus forming two openings.

The next discovery was a valvular orifice in the posterior wall of the vagina. This orifice commenced about one and a-half inches above the posterior commissure of the vulva, and led into a roomy canal, extending upwards and backwards, and really into the rectum. My patient had neither anus nor perineum, and nature not to be thwarted in her purposes, had instituted this new departure In this case, then, we have the ordinary vaginal opening as the channel, through which must pass all fæcal matter, in common with all other normal discharges in connection with the genito-urinary system of the female. With the above mentioned exceptions, this woman was well formed and natural for her size in every other respect. She was delivered in a reasonable time of a fine healthy child. A few months after her marriage she aborted once. From an elder sister I learned that the above unique condition of affairs had existed from birth, and was consequently congenital.

Yours, &c.,

W. B. TOWLER.

Wingham, Ont., Feb. 10th, 1878.

ETHER IN SUSPENDED ANIMATION.

To the Editor of the CANADA LANCET.

SIR;—As the following case may be of interest to some of your readers, I send it for publication in the LANCET:—

In Dec. '77 I attended Mrs. C——, æt. 23, primipara. Recognized a face-anterior presentation, with anterior fontanelle low down. After 10 hours labor, pains flagged, and I then gave ether and applied the forceps, the head being in the middle strait. After 10 or 15 minutes traction, the delivery was effected. The child did not breathe, and so it was placed in a bowl of warm water, sprinkled on the chest with cold water, and Sylvester's method of artificial respiration was practised upon it. At the end of 10 minutes, estimated time, there was no sign of life. I then caught sight of my ether bottle upon the bed, and Verneuil's subcutaneous use of the drug in collapse floated across my mind. Having a hypodermic syringe, I at once injected between 3 and 4 minims of ether deep into the child's arm. Within a minute the child gasped, and in two or three minutes it was breathing well enough to enable me to cease the artificial respiration. We have all seen children suddenly "come to life" from the use of the classical means which were first used in this case, and also from mouth to mouth insufflation, a stinging slap on the nates, &c. Where the respiratory forces should begin at any moment, it is difficult to ascribe the exact value to the action of any stimulus, but in this case it certainly seemed to me that the child would never have breathed but for M. Verneuil's suggestion.

Should occasion require I propose further to test the value of the procedure. In this case no depression followed the stimulation, and no local trouble resulted from the injection.

Yours truly,

Edgar, Feb. 8th, 1878. N. A. POWELL.

LARGE STONE.

To the Editor of the CANADA LANCET.

SIR;—An article headed "LARGE STONE" on page 182, last number of the LANCET, induces me to send the following:—

On Jan 26th 1875, I removed by lateral operation a stone weighing two ounces and six drachms, from a boy fifteen years old, but who was remarkably small of his age. Recovery perfect. If the stone removed by Dr. Gross, in the article referred to, is considered unusually large for a boy, what will you think of this one?

Yours truly,

D. W. LUNDY.

Albany, Ill., Feb. 5th, 1878

Selected Articles.

DISEASES OF THE NERVOUS SYSTEM.

A Lecture delivered at Bellevue Hospital Medical College,

BY C. E. BROWN-SEQUARD, M.D.

Gentlemen:—At the last lecture I referred to a number of cases, with the purpose of showing that any lesion in the side of the brain can produce the greatest variety of forms of paralysis—the greatest variety as regards the extent, the degree, and the persistence of paralysis. This, of course, has led a number of you to think it to be extremely difficult to make a diagnosis of the locality in the brain of the disease which produces paralysis. No doubt, it is extremely difficult, but as you will see, from what I shall say to-day, there are features which can lead to diagnosis of locality of lesion, even when what we observe is entirely in opposition to the views which are generally accepted.

But before I speak to you of those facts which lead to diagnosis of the seat of the disease that has produced the paralysis—the symptoms of the disease—I have a few more words to say upon a point which escaped notice in the previous lectures. It is this; the theory published by Dr. Broadbent has been put forth with the view of explaining certain difficulties which we find as regards paralysis. As I told you yesterday, most cases of brain disease producing hemiplegia consist almost exclusively of paralysis limited to the arm, the leg, and to some of the muscles of the face. There are many parts of the body which escape paralysis in the immense majority of cases of disease of the brain. These parts are the muscles of the trunk, the muscles of the neck, those muscles which go from the trunk to the limbs—the arms or the legs. These muscles escape paralysis more or less, rather more than less, in the immense majority of cases. Dr. Broadbent has tried to explain this fact in admitting that there are certain parts of our body which depend on a centre located in the medulla oblongata or at the lower part of the pons varolii, and which has the power to act upon both sides of the body. So, admitting that one side of the brain is destroyed totally, including that nerve centre-centre which is the corpus restiformis upon the same side, the corpus restiformis upon the other side is alone sufficient to move the two sides of the body, and thereby the muscles which have escaped paralysis. The view is certainly true in a great measure, but it is faulty in this: Dr. Broadbent, as well as most medical men, considers the corpus restiformis as a motor-centre. The reality is, as I hope to be able to demonstrate, that a small part of one side of the brain is sufficient for both sides of the body, not only for the muscles which escape paralysis but for the muscles of the limbs as well.

I now pass from this to what I have to say regarding the significance of certain symptoms in the diagnosis of the seat of the brain disease which causes paralysis. There is one fact, very important indeed for you to understand fully before I enter into details upon this point. As you well know, there are nerves arising from the base of the brain, nerves which serve as centres, which serve for general tactile sensibility, and also as nerves of motion. Then you must make a distinction between cases of paralysis of those nerves dependent upon disease which strikes at the very place from which those nerves arise, in which case the trunks of the nerve itself or its immediate roots within the base of the brain are implicated, and those cases in which these nerves are paralyzed when the lesion is beyond the place of their entrance into the base of the brain.

Suppose, for instance, a lesion occurs in the medulla oblongata in the immediate region where the root of a motor-nerve has its origin; if the disease strikes there, it of course destroys some of the fibres of the nerve, and it destroys the cells also from which the nerve-fibres arise. But let the disease be located in another part of the brain—at a point beyond—where there are no nerve-fibres arising which form a connection with the nerve which goes down from the medulla oblongata, then you will have a result completely different from what you have when the cell itself of the motor-root is struck by the disease. In those cases of paralysis of nerves in the base of the brain dependent upon destruction of the cell which gives rise to the nerve-fibre, or striking the root itself before it reaches these cells, you have just the same result produced as if the nerve-trunk had been affected outside the brain.

Something quite different takes place when the disease is beyond the origin of these nerve-fibres. In what I have already said in a previous lecture with reference to paralysis of the muscles of the face, muscles of the eye, paralysis in the tongue, in the neck, and elsewhere, I had in view only those cases in which the paralysis depended upon disease inside of that zone or layer of nerve-cells which gave rise to the motor nerve-fibres going to the tongue, to the eye, etc. There is no question that, when you find disease in the base of the brain striking the nerve or its roots before they reach the cells of origin, there will be paralysis upon the same side of the body in which the disease is situated. It is quite evident that it must be so. You have a cause acting the same as if you had divided the nerve itself outside of the brain, and of course you have paralysis of the nerve.

In what I have now to say, you will find that what I have just mentioned is of the greatest importance; I will illustrate at once the meaning of this. You will see that in case of disease of the pons varolii, for instance, a little above the place of

origin of the facial nerve—the nerve which acts upon the muscles which give expression to the face—there is a characteristic condition produced.

If the disease is upon the roots of the facial nerve, or upon the cells which give origin to these fibres of the facial nerve, the muscles of the face upon the same side of the seat of the disease will be affected. If the disease is elsewhere as a rule, the muscles of the face upon the side opposite to the seat of the disease will be affected. So you see that in disease in the same organ, the pons varolii, you may have results just the reverse of each other. The face may be paralyzed upon the right or upon the left side; but as regards the limbs, as a rule, you will find them paralyzed upon the side opposite to the seat of the lesion. What I wish you now to fully appreciate is the fact that, when the disease strikes at the origin of the nerves, necessarily it produces paralysis in the nerve; that nerve may be the olfactory, the optic, or any one of the cranial nerves. In any of these cases the very same thing will occur with regard to the seat of the paralysis; it will always be upon the same side with the lesion.

DIAGNOSIS OF HEMIPLEGIA.

I come now to the diagnosis of various cases of hemiplegia. I must first point out the fact that disease of one-half of the spinal cord, as well as disease at the base of the brain, can produce hemiplegia, and how you are to determine where the seat of the disease is, is what I will try to explain. You may find two persons struck down suddenly with loss of consciousness, sometimes with convulsions—convulsions are not essential, however—and after there is recovery from the shock, you find that there is paralysis, in both cases, on one side of the body. We will suppose that the right side is paralyzed. One of these persons makes grimaces upon the side of the face corresponding with the side on which there is paralysis of the extremities: so you may be inclined to think that there is paralysis of the face upon the opposite side.

NEW POINT IN DIAGNOSIS.

This point in diagnosis, so far as I know, has not been mentioned except by myself, and as it is a constant phenomenon in certain kinds of lesion of the spinal cord, I wish you to be quite aware that in that case there is merely an appearance of paralysis upon the side of the face opposite to that on which there is paralysis of the limb. If you pay attention only to the appearance of paralysis of the left side of the face and on the right side of the body, and establish the fact that the man has had an attack of apoplexy, loss of consciousness, etc., you will certainly, and quite naturally, according to the teachings of science until now, be led to admit that there has been somewhere in the brain a lesion which has produced all these symptoms. That may be a mistake, or it may be correct; because lesion in one-half of the spinal cord near the medulla oblongata can produce all these symptoms. I will say at once that when you examine the face, you will find that the side which seems to be paralyzed is not the paralyzed side. You will find that there is no paralysis of the face upon either side in that case. You will find that the appearance of paralysis comes only from the fact that, on the side of the lesion in the spinal cord, there is simply a spasmodic state of certain muscles of the face.

In case of spinal hemiplegia, paralysis of one side of the body, depending upon disease high up, and limited to one-half of the spinal cord, you will find that there is a series of symptoms such as I mentioned a moment ago. You will find features which certainly will distinguish these cases from cases of hemiplegia, depending upon disease of the brain. If you examine the patient carefully, you find that there is paralysis, and, as I have supposed the lesion to be in the right half of the cord, the patient is paralyzed in the right limbs; but there is no diminution of sensibility. On the contrary, there is considerable increase of sensibility, as measured by the esthesiometer. The hyperæsthesia may be extremely great. Indeed, in the case of one of my dear friends, Mr. Charles Sumner, at the two points in the spine which had been injured by a cane in an assault made upon him in the Senate Chamber, both points of the instrument could be distinctly recognized, no matter how near to each other they were placed.

That kind of feeling—that of touch—may be increased considerably in many other cases; but in spinal hemiplegia the tactile sensibility is increased in the paralyzed limits to a considerable extent.

Other kinds of feeling are also increased. Painful feeling is often considerably increased, and sometimes it is so great that a mere touch produces a scream. There is also an increase in the power of detecting differences of temperature. There is lack of power of enduring the contact of anything very cold, or very hot, as these things will produce decided pain. There is besides an increased sensitiveness to tickling. But there is another feature which will assist in making a diagnosis between this form of paralysis and that form dependent upon disease in the base of the brain, and that is the condition of the muscular sense. When the patient has but little power of motion the muscular sense is very good indeed, and he will know perfectly well where his limb is without the necessity of placing the hand upon it to determine its location.

Now, in the contrasting condition, there is loss of sensibility of all kinds. The loss may be absolutely complete, so that the patient is not able to feel any blow, prick, tickling, galvanism, etc.

As regards the temperature in the limbs there is another distinguishing feature. You will find that the limbs are very much warmer where the muscles are paralyzed, and lessened in warmth upon the opposite side. There is then a double effect upon the temperature; increase upon the side of the lesion, and diminution upon the opposite side. But these are not the most interesting features of such cases. You will find that the face is warmer upon the side of the lesion, and that is because the fibres of the sympathetic nerves going to the blood-vessels of the head are divided upon that side of the spinal cord. There is higher temperature in the face, higher sensibility, and greater redness of the eye and ear. There is also a symptom to be observed in the eye; and that is dilatation of the pupil upon the side of the lesion. These are effects which we know will follow galvanizing the sympathetic in the neck. All these effects are found in connection with disease of one-half of the spinal cord.

The fact that the muscles are contracted is in consequence of the greater afflux of blood to the part; it is not due to changes occurring in the nerve centres, but to the local fact of being fed far more abundantly than in health. Hence they are in a state of greater tonicity, as it were; but there is no trace of paralysis on either side of the face. That fact will serve as a diagnostic feature between the form of hemiplegia depending upon disease of one-half of the spinal cord, and hemiplegia depending upon disease in the base of the brain. Besides there are a great many symptoms of disease in the base of the brain which do not exist with disease affecting one-half of the spinal cord.

I now pass to other facts. In cases of disease of one-half of the spinal cord, you will find that there is usually a feeling of stricture about one-half of the body at a level with the seat of the cord.

ZONE OF ANÆSTHESIA.

At that place there is something that can be recognized which is very interesting indeed, and which is in harmony with the view regarding the origin of nerve-fibres. As the lesion in the spinal cord necessarily destroys some nerve-fibres which do not supply the motor-trunk, there is a zone of paralysis of sensibility at the level of the injury in the cord. Some of the sensory roots are involved: hence the loss of sensibility in that circumscribed region. We have hyperæsthesia below and above the seat of the lesion, and a small zone of anæsthesia at a place where the lesion occurs, so that the body is separated into *three* zones—*two* of hyperæsthesia and *one* of anæsthesia. Nothing of this kind is present in hemiplegia depending upon disease in the base of the brain. You can already see that diagnosis can be easily established, and you will see this much more clearly as I come to speak of the symptoms of hemiplegia depending either upon disease of the medulla oblongata, or other parts of the brain.

GENERAL SYMPTOMS.

When there is disease in the medulla oblongata, or pons varolii, there are general symptoms which are of great interest, not so much for diagnosis, as for prognosis. They are important in deciding upon the chances for restoration to health, and the chances of death; and also the means of treatment are not the same as when the disease exists in other parts of the brain. These general features are that, according to the seat of the disease in the base of the brain, there are nerves implicated which show where the disease exists. Supposing it to be in almost the entire length of the base of the brain, from the origin of the optic bands down to the spinal cord, you will find that all the nerves which take their origin in that part are more or less implicated in the disease. If you know what these nerves are, you can easily understand what the symptoms will be. I will simply mention that as the *third* pair of nerves is implicated, certain results will be manifest in the eye, and you will find the pupil affected, and the motion of the eye will be affected. Other nerves are implicated, and the effects are exceedingly complex, but they are in perfect harmony with the known functions of the nerves, having their origin at the base of the brain. So the diagnosis may be perfectly clear, and you will find as a rule, that the paralysis, instead of being upon the same side, as in the case of disease of one-half of the spinal cord, is upon the opposite side of the body. If there is loss of feeling, it is where the loss of movement exists.

DISORDERS IN THE KIDNEYS, LUNGS, AND HEART, ETC.

But there are other features: there are disorders which take place in many of the organs of the body. The urinary secretion is disturbed; sometimes increased immensely, with or without the presence of sugar. When sugar is present, the quantity of urine is not so much increased as when the sugar is absent; but it may be considerably increased in quantity. We may have them in both forms of diabetes—insipidus and mellitus. These two forms of diabetes are found in connection with all diseases in the base of the brain, but they may exist in connection with disease very far from the brain. To my knowledge, these forms of diabetes never exist when the spinal cord is the seat of disease.

There are many other features. I have shown that lesions of the pons varolii, or medulla oblongata, affect the lungs almost at once. That is the fact in most cases in which the lesion is made in animals. I may say that it is frequently so in man.

One of the chief effects produced by lesion in the pons varolii in man is considerable congestion of the lungs. Another effect, which depends almost only upon lesion in the pons varolii where the crus cerebri comes into it, is hemorrhage into the lungs. This occurs very frequently indeed; sometimes it is slight, and sometimes enough to destroy life rapidly. It was known that hemorrhage into the lungs occurred in connection with hemorrhage into the base of the brain, but it had been supposed that it took place because of the same alteration in the walls of the blood-vessels in the lungs as was present in the blood-vessels in the brain. My friend Professor Charcot and Bouillaud made the great discovery that hemorrhage in the brain depended almost always upon the rupture of small aneurisms—miliary aneurisms. It was imagined, and it has been found to be the case, that the blood-vessels in the lungs also have the same kind of aneurismal dilatations, and it was thought that in those cases in which hemorrhage, either small or large, took place in the lungs, after having hemorrhage into the brain, it was dependent upon the same cause. Without doubt it is so in some cases, but, as a rule, when the hemorrhage in the lungs appears very quickly after that which occurs in the brain, it is produced in a direct manner by an alteration in the circulation in the lungs.

I have asserted that the breaking of blood-vessels in the lungs depends upon this change. The arteries and veins become so contracted that there is not a trace of blood in them, and then the congestion goes so far that a capillary breaks, and there is hemorrhage. It is one of the causes of death in disease in the pons varolii, or perhaps at other parts of the base of the brain.

This cause of death has not been sufficiently guarded against, and it very frequently happens that no examination of the chest is made in these cases. This is a fault which I myself have fallen into, but it should always be kept in mind that great alteration can take place in the lungs in consequence of disease in the base of the brain.

The opposite may occur, perhaps, in one out of ten cases.

We have, then, *first*, congestion of the lungs, and, after a time, there may occur, foci of inflammation in connection with acute disease in the base of the brain. As the patient has more or less difficulty of breathing, on account of the brain disease itself, the disease of the lungs passes unnoticed, and no local treatment is applied which could be of great service to the patient. I have no doubt that we may recall to memory a great many cases published as fatal cases of disease, occurring at the base of the brain, which terminated fatally, not because of the brain disease itself but because of subsequent disease of the lungs, which passed unnoticed during life.

There is, therefore, in cases of disease of the brain, an effect, which is of great importance, produced upon the lungs. Another effect which is of great interest can take place. As you well know, the par vagum takes its origin in the medulla oblongata. And you know that if this nerve is galvanized, the heart's action is arrested. Well, acute disease in the medulla oblongata, or close to it in the pons varolii, will produce irritation of the par vagum, and may reduce the heart's action to such an extent as to prove fatal. You doubtless know that there are a number of cases upon record in which death was caused by pressure upon the medulla oblongata, from displacement of bones, or some other cause. There is this feature, then, in connection with disease in that region: that is, there is a diminution in the beat of the heart—a diminution in force rather than a diminution in speed.

There are other features belonging to lesion in those parts. As you well know, the œsophagus, the pharynx, and the larynx are supplied with nerves which arise from this region. There may be spasm in these organs. In a case which I shall always remember, for it occurred in the person of a most dear friend of mine, there was such a spasm in the œsophagus that it was absolutely impossible to feed him by the mouth; not even a tube could be passed through the œsophagus, so great was the spasm, and we were obliged to sustain his life by nutritious injections into the bowels. The material used was the fresh pancreas of an animal, with hashed meat. The fat is removed from a fresh pancreas, and the influence of the remaining portion upon nutrition is pretty nearly the same as if a series of meals were taken in the usual manner. In the case of my poor friend, life was maintained eight days solely by this process of eating.

There is, therefore, an effect produced upon these parts by disease situated at the base of the brain, as mentioned. There are other features of interest. You may diagnose very easily, for instance, whether there is disease present upon the origin of the trigeminus nerve by change in the state of the cornea. The cornea becomes somewhat inflamed and after a time the eye may be destroyed. You already know that Magendie has long ago shown that when the trigeminus is divided in an animal there will follow impairment of nutrition in the eye, and after a time the organ will be lost. Magendie also has shown that all the senses are affected by division of the trigeminus—the sense of sight, of audition, of olfaction, as well as the sense of taste. This conclusion of Magendie would not have been drawn had he been familiar with the phenomenon of the loss of function. When the trigeminus is diseased or divided, the nerve-fibres produce no action, and that result is quite sufficient to produce loss of sensation, and the nutrition of other organs of sense is disturbed by such result.

A blow upon the frontal nerve, for instance, may

be sufficient to cause loss of sight, and, besides, a considerable alteration in the nutrition of the eye. Irritation produces loss of all the senses, and in that case it may be from reflex action affecting the blood-vessels, thus changing the nutrition. Disease of the optic thalamus, for instance—a part far away from the origin of the trigeminus—can produce by its effect, through the trigeminus, an alteration of sensation, and an alteration of nutrition in the cornea and loss of the eye, the same as if the trigeminus itself was diseased or divided. Therefore, when you find loss of nutrition upon either side of face, and alteration of sensation upon that side, you can judge that the cause or lesion is upon the side where the trigeminus is disturbed.

Now comes something in the way of diagnosis that is of the greatest importance. In a case I found these symptoms associated with paralysis of the limbs upon the same side. I concluded, therefore, that the lesion was upon the pons varolii in the origin of the trigeminus, and I concluded so from the fact that there were present the changes in nutrition and sensation which I have just described. The patient died subsequently, and Dr. Edes, of Baltimore, found the lesion at the exact point at which it was thought to be situated. There was no special maturity in making the diagnosis, but I mention the fact simply to show that you may find disease upon one-half of the pons varolii producing upon the same side paralysis of motion and changes affecting the sensation and nutrition of the eye, upon the same side. But disease at the same point can produce just the reverse, and we may have paralysis upon the opposite side, anæsthesia upon the opposite side, and rigidity of the muscles. So you may have paralysis upon the same side with the lesion, or paralysis upon the opposite side. I will add that you may have motion lessened in that part, with clear symptoms belonging to the trigeminus, without paralysis in the trunk or in the limbs. There is in this last case, perhaps, some difficulty in diagnosis. You may think that the trigeminus alone if affected, but it is not necessarily so; for a great part of the pons varolii may be destroyed without producing paralysis, except in the nerves which arise from that region of the brain. Those nerves have been most affected, but in some cases, one especially published by Stanley, a tumor had destroyed one-half of the pons varolii, and there was only incomplete paralysis upon the corresponding side.

The diagnosis in that case would have been clear, from the fact that the trigeminus was affected completely, and the eye was destroyed. There was also present a symptom which is not rare in connection with irritation of the trigeminus, and that is paralysis of the face. There is, therefore, no great difficulty in diagnosis of disease affecting these parts. Another feature you will find very frequently in these cases of disease at the base of the brain. You will find that there is, instead of paralysis of the limbs, anæsthesia or a great deal of hyperæsthesia.

ABSENCE OF CONVULSIONS IN DISEASE OF THE PONS VAROLII.

You will also find that there is a remarkable absence of symptoms. The pons varolii has been considered as a part perfectly able to produce convulsions. It is so in animals, and convulsions are readily produced by irritating that part of the brain; but it is not so in man. Disease there produces convulsions less frequently than disease elsewhere in the brain. So if you find that convulsions are not present, and there are symptoms showing that the nerves arising from this part of the brain are affected, you will almost certainly be led to admit that there is disease at that point. There is a part close to the pons varolii which may give rise to most interesting features, and indeed it is not rare that disease in the pons varolii produces some of these symptoms. It is that part which is close to the edge and unites the pons varolii with the cerebellum, the crus cerebellum. When this part is irritated, a rotary movement of the body is produced. It is not special to irritation of that part, however, but irritation of the crus cerebrum and other parts of the brain may produce the same kind of movement.

DIAGNOSIS OF DISEASE OF THE CRUS CEREBELLUM.

Diagnosis of disease of the crus cerebellum alone is usually very easy. Hemiplegia depending upon disease of the crus cerebellum may appear upon the same side or upon the opposite side of the body. As a rule, it appears upon the opposite side. But there are two cases out of the entire number, which is not large, of disease of the crus cerebellum, in which paralysis was present upon the same side. The crus cerebellum has been considered as the point of union of those parts of the brain which produce voluntary movements with those parts which produce sensation. So you see that in case of disease of one crus cerebellum you should have always complete paralysis of movement, and complete anæsthesia upon the opposite side of the body. This is absolutely false. Out of some thirteen cases of this kind upon record, complete paralysis is not at all frequent, and cases of complete anæsthesia are very rare—indeed, I know of only two such cases. The facts, then, are not in harmony with the theory that the crus cerebellum is a part containing all the motor and sensitive fibres going to the opposite side of the body. So little is that true that there are cases in which destruction of the crus cerebellum has occurred without paralysis at all. Certainly, there are ten cases on record in which the entire mass of the crus cerebellum has

been destroyed without producing paralysis upon the opposite side, and without producing anæsthesia. I have said paralysis in some of these cases *seemed* not to exist at all, but it is quite an essential matter that, in the future, more reliable means are employed to ascertain whether paralysis is present or not, than those which are usually employed.

PARALYSIS A CONSTANT SYMPTOM OF BRAIN DISEASE.

If you see a man walk about, see that he is able to stand firmly upon his legs, and that he grasps with both hands firmly, etc., you are at once inclined to think that there is no paralysis. I must say that, although there are many cases of disease of the brain in which there is not marked paralysis, my belief is that, in every form or kind of brain disease, were we in the habit of studying the patient more carefully, we should have a great chance of finding some degree of paralysis.

Most of the instruments employed for this purpose are exceedingly defective.

[A description of an instrument was given. The inventor is one of the Professor's friends. It gives a very clear measure of the strength of the legs, and it can be used to measure the strength of any part of the body.]

I do not think that we can find the exact strength a patient who has the brain disease possesses, unless it is measured by some reliable instrument. When I say that sometimes disease almost entirely destroys one corpus cerebellum, or any other part of the brain, without the production of anæsthesia or paralysis, I only mean that so far as the cases have been recorded, no paralysis have been noticed, but I suspect that some degree of paralysis was present.—*Med. Record.*

INJURIES OF THE HEAD.

BY JOHN ERIC ERICHSEN, F.R.S., F.R.C.S.,

EXTRAVASATION OF BLOOD ON THE DURA MATER, &c.

GENTLEMEN,—I wish to direct your attention to a peculiar class of cases, which is amongst the most interesting of those that are connected with injuries of the head, both in the peculiarity of the symptoms and the accuracy with which the diagnosis can be made, and in which you can give absolute relief to the patient—I mean those cases in which there is an extravasation of blood between the skull and dura mater. They are a class of cases that engaged the attention of surgeons very many years ago. This subject attracted the attention of, and was very closely investigated by, surgeons of a past generation. You will find that we have really at the present day been able to add very little to the information that can be obtained from the memoirs of the French Academy of Surgery and the writings of Pott, Abernethy, and Sir Charles Bell. You will find in their writings much valuable information on all subjects connected with head injuries, and I cannot but fear that the study of the works of these great surgeons is too much neglected at the present time. But before I proceed to discuss these extravasations, let me relate a few cases which are interesting, amongst other reasons as showing what very slight injury may occasion a fatal extravasation.

Some years ago a little girl was going down stairs *with her mother to dinner. She said,* "I will go first mamma," and started to run down stairs, but she missed her footing and fell forward. Striking her head slightly against the wall, she felt a little dazed at the time, but went to her dinner, ate it, and afterwards felt slightly sick. She was sent to bed, slept soundly, and was dead next morning. There was a clot found between the dura mater and the skull on the side of the head that had been struck, but without any fracture.

Many years ago I was called to see a lady who had come up to town for a few days to amuse herself. She went to the opera, and in going down the stairs caught her foot in the train of a lady's dress. She fell forward and struck her head slightly against the opposite wall. She felt a little giddy, and said that she would not go into the theatre, that she would return home. She went to bed, fell asleep, and about ten in the morning, when the maid came to wake her, she found her so fast asleep that she did not like to disturb her; but about twelve o'clock the friends got alarmed, and they sent for a neighbouring medical man, and he came for me. I found her comatose, suffering from compression of the brain, and went home to get my trephines, but when I came back she was dead. A post-mortem examination was made, and we found a clot of blood the size of a small saucer on the side that was struck, between the skull and dura mater over the course of the middle meningeal artery, but without any fracture of the skull.

Some years ago a cabman was thrown off his box, and he became slowly comatose. Three days after the accident he was brought to the hospital. When I saw him he was suffering from profound coma, and there was some paralysis of the side opposite to that on which he had been struck. I cut down upon the skull, and found a starred fracture in the right temporal bone. I trephined him, and found a large clot of blood under the bone. Some blood welled out rather freely, evidently from the middle meningeal artery. The flaps of scalp were laid down, and he made a very good recovery. During his convalescence he presented one of those peculiar psychological phenomena I mentioned in a former lecture. He commenced to swear "like a trooper." Some four or five years after this, one day, as I was going home, a cabman came up, touched his hat to me, and said, "Do you recollect

me, sir?" I said "No." He said "I am Jim. I dare say you recollect me, sir, because I used to swear so horribly." I found that he was quite well, and able to go about his ordinary avocation as if nothing had occurred, though he had a deep depression at the seat of the trephine opening.

On the 11th of December a similar case was admitted into the hospital. The patient was a brewer's drayman, and while driving his cart on the evening of the 11th fell off from the driving seat into the road, a crate also falling with him, and bruising the right side of his face and head. He got on to his box, and drove some distance, then, feeling giddy, lay down in the van, and in about half an hour he was noticed by his mate to be quite unconscious, and was driven at once to the hospital.

On admission, the patient was completely unconscious; the pupils were widely dilated and fixed; stertorous breathing, 18 per minute; complete general paralysis; pulse very full and tense, 32 per minute; slight bleeding from right nostril; over the back of the left parietal bone slight puffy swelling; left temporal fossa fuller than right, puffy. A stimulant enema was given, and at once returned.

Mr. Beck came about 10 P.M., examined the patient, and found his condition unaltered. He at once trephined over the left middle meningeal artery, an inch and a half above the zygoma, and an inch and a half behind the left external angular process. Here he found a fissure in the bone, and on removing the crown, the groove of the artery was found upon it, divided by the fissure. Fluid blood and soft coagula at once welled up from the wound. There was a very large clot underneath the skull, which was removed by the lithotomy scoop. The dura mater was uninjured, depressed from the bone for two inches, and separated as far as the finger could reach in every direction. At first very free hæmorrhage occurred from the inside of the skull, the blood welling up; no artery could be seen or felt. Compression of the common carotid did not appear to have any effect on the hæmorrhage, which after a time got very much less. During the operation the patient's pulse rose to 60 per minute. A fold of lint wet with iced carbolic lotion was applied to the wound. Pulse was much smaller, irregular, occasionally intermittent, 52: paralysis and other symptoms remained in the original condition.

Jan. 12th at 7 A.M. patient vomited; at 8 A.M. he died.

The following notes are taken from the case-book as entered by the ward clerk:—

Autopsy, by Mr. Beck, five hours after death.—Head: A little blood under the scalp on the left side, and in the left temporal muscle. A fissure was found running from just above the left parietal prominence into the trephine wound, and from the further side of that downwards and forwards, ending just below the outer end of the lesser wing of the sphenoid bone. At one place in the very thin squamous bone it was starred. The trephine had been used two inches behind the external angular process and an inch and a half above the zygoma. The head was then opened. Longitudinal sinus healthy. Surface of brain dry; convolutions very flattened. A slight bruise on the under surface of the anterior end of the right temporo sphenoidal lobe just opposite the point struck. Another slight bruise in the under surface of the same lobe on the left side just beneath the point struck. No meningeal hæmorrhage. A considerable quantity of clear fluid in ventricles; no blood. Veins of Galen distended with blood. The left corpus striatum projected considerably further into the ventricles than the right. No hæmorrhage into or laceration of any part of brain or medulla; nothing to account for persistence of compression symptoms apart from the clot under the skull. The dura mater was found to be detached from the skull on the left side for a space several inches in diameter, extending forward to the small wing of the sphenoid, downward to the petrous portion of the temporal bone, upward nearly to the middle line, and backward to the middle of the posterior fossa of the skull. It was separated some distance form the skull, and the space filled up with a soft black clot about the size of the hand. The middle meningeal artery was found to be torn, but not divided, at a point opposite to the starred fracture, just behind and beneath the small wing of the spheniod. Lateral sinus uninjured. No other injury detected.

Now, let us briefly consider the main facts of this very typical case. The man, when admitted, was found in a state of profound coma, slow pulse, and breathing eighteen times a minute, &c. Mr. Beck was sent for, and finding him in this condition, very properly cut down upon the left temporal fossa, and some blood was seen oozing from a fissure in this region. A fissure was seen in the bone, blood was oozing from this fissure, and it was evident, from the gradual supervention of coma, that the man was suffering from cerebral compression, the result of extravasation. The trephine was applied in such a direction as to cross the course of the middle meningeal artery, a large clot was scooped out with the lithotomy scoop, blood welled up, and it was difficult to get it all away, but the finger could be passed up between the dura mater, which was separated several inches. The brain did not rise and push out through the large trephine opening, nearly an inch in diameter, as if there had been the natural upheaving of the brain. The man continued in a somewhat comatosed and paralysed state, and died the next morning. On examination after death, the dura mater was found injured, a starred fracture was discovered, and the middle meningeal artery was found torn at a point opposite the fracture, and had been torn as it passed in the canal in the parietal bone, by the same force which had occasioned

the fracture. Well, here is a typical case, then— as typical a case as it is possible to have,—of a wound of the middle meningeal artery giving rise to extravasation of blood. Just let me go over what took place.

In the first place, the man received a blow from falling off his box. He was concussed, but he completely recovered his concussion; so much so as to be enabled to drive, and that shows that he was completely free from paralysis. After having driven some little distance, he felt giddy, and resigned the reins to his companion, lay down in the bottom of the van, and gradually became comatose. He was brought to the hospital, and found in a state of profound coma; widely dilated pupils and slow pulse —in fact, he was exactly in the condition of a man with atheroma of the arteries of the brain, one of which had given way and occasioned fatal apoplexy.

The trephine was applied to the left temporal fossa. Now, why was it applied to the left temporal fossa? For this reason: because it was more bulging than the right. And why was it more bulging than the right? Because there was a fissure through which blood was oozing, and had given rise to the projection of the temporal muscle. The trephine was applied, and it was applied in the course of the middle meningeal artery. Now, gentlemen, if any of you were asked the question elsewhere, How would you apply the trephine so as to strike the middle meningeal artery? you would give this answer: you would take a point an inch and a half above the zygoma, and an inch and a half behind the external angular process of the frontal bone, and where these two points meet you will find the middle meningeal artery.

A large clot was exposed; and when you expose a large clot, what are you to do? Leave it or remove it? The better plan will be to remove it. Sometimes the brain will upheave and push out the clot; but sometimes it does not upheave. In this case the brain did not upheave, and the man died speedily comatosed. You should remove the clot, and, having removed the clot, what do you do with the middle meningeal artery? If it is torn, as in this case, you cannot stop the hæmorrhage; and there is no necessity to do so; you will find the hæmorrhage cease of itself. There is a very curious condition connected with this middle meningeal artery, and it is this: when it is wounded in such a place, and is exposed, it bleeds a little, but it does not bleed *per saltum*; the blood merely wells out from it, and the hæmorrhage very soon ceases. Probably the artery contracts; but in this case it did not do so, because the artery was only partially divided; it could not contract and retract.

Now these are some of the chief points in connexion with these cases; but there are one or two others to which I have to direct your attention. One is, the size of these clots; they are very large. This one, after it had been removed, weighed three ounces and a half. The largest I have found was somewhere about four ounces and a half. They are very thick in the middle, and flattened out at the edges. Usually they are black, and there is very little serum in connexion with them. Well, now, there is a last point to which I wish to direct your attention. When the finger was introduced, the dura mater was found to be separated to a considerable extent. The man did not live many hours after the accident, and this large clot was extravasated after an hour or so. This leads me to a brief discussion on the causes of hæmorrhage on the dura mater, and the cause of the separation of the dura mater from the skull. I need scarcely tell you that the dura mater is the internal periosteum, so to speak, that upon the dura mater the vessels that supply the cranium ramify, and that the dura mater is very closely applied to the skull. In post-mortem examination you will find that you have to tear the dura mater from the skull, it is so closely adherent to the bone that lies immediately upon it. This has a very distinct bearing upon the cause of these extravasations of blood. They are very commonly attributed to rupture of the middle meningeal artery, and, in some cases, with justice. But there are cases in which you get these symptoms without any laceration of the middle meningeal artery. The vessel, after death, is found lying uninjured in its osseous canal.

The explanation of these cases given by Sir Charles Bell many years ago showed experimentally how these extravasations are occasioned. He took a wooden mallet and struck a forcible blow upon the side of the head of a body in the dead-house. On removing the skull-cap he found that the dura mater was detached from the seat of the blow, although there was no fracture. He went further than this; he made the same experiment upon another subject, and after having made it he injected it with soft size. He injected this into the arteries, and found, after the size had been allowed to cool, that it had become extravasated, and had formed a large clot between the dura mater and the skull. There you get the exact condition of things that we meet with in the wards and operating theatre —namely, a separation between the dura mater and the skull, and an extravasation of blood between the dura mater and skull where they are separated. From these interesting observations it would appear that there are two distinct sources of hæmorrhage between the dura mater and skull. In the first case the middle meningeal artery is torn across by a fracture travelling across the anterior inferior angle of the parietal bone; and in the second case, in which the artery is not torn, but an accumulation takes place from the smaller branches that get torn at the time the shaking occurs which separates the dura mater from the skull, and which allows oozing to go on, and produces a slow supervention of coma —what you may call "surgical apoplexy." It has

been supposed that the separation between the dura mater and skull was effected by the impulse of blood driven out from the torn middle meningeal artery which pushes away the dura mater from its connexions with the skull, and as it pushes away the dura mater the cavity so formed is filled with blood. Sir Charles Bell conclusively proved, by the experiment to which I have referred, that separation of the dura mater was the primary condition; and there can, I think, be little doubt that the detachment of the dura mater is the result of the blow on the head, and the filling is the consequence of that detachment, and that it could not take place if the detachment had previously occured. The vacant place gradually gets filled up with blood, more rapidly if the trunk of the middle meningeal artery be torn across, when it will become full in the course of half or three-quarters of an hour after the accident. When the main trunk escapes, and it is only the terminal branches that get torn, you get that set of cases in which the accumulation of blood goes on much more slowly, and only compresses the brain to such an extent as to give rise to coma in the course of several hours.

Now there is a third condition, and that third condition is a very important one. I will relate one case, and report the post-mortem of another. Last spring I was called to see a gentleman living a few miles from town, who was out riding with his daughters when his horse picked up a stone. He let his daughters go on, and got down to see what was the matter, but finding that their father did not follow them the young ladies returned, and found him lying on the ground in a state of insensibility. The precise nature of the accident did not transpire, but it is probable that the horse turned its head and struck him when he was trying to remove the stone. Anyway he was seen and attended to immediately after the accident; not more than two or three minutes could have elapsed, but yet abundant hæmorrhage had occured. There was a large pool of blood in the road, and blood was welling freely out of his left ear. The daughter took his head on her lap, and her habit was soon saturated with blood. Some assistance was got from a neighbouring cottage, the bleeding ceased, and in the course of an hour or so he was able to walk to a neighbouring railway station, took a train for some miles, and afterwards walked from the station home, a distance of about a quater of a mile. There was no question about the quantity of blood that had been lost, because the young lady's habit was soaked through and through, and a large quantity lay in the road as well. I saw him the same evening. He was somewhat concussed, but had no paralysis, no coma, no dilatation of pupils, and no signs of intracranial extravasation or compression. The bleeding from the ear had ceased, and he thought there was nothing much the matter with him. He remained very quiet under my care and that of Mr. Evans, of Hamstead, for some weeks. He made a slow recovery, but apparently a very good one, the only trouble left being deafness of the ear on the injured side. At the end of a couple of months or so he was able to go to the city, against our advice, however, but he did do so on some business matters of importance. He now gradually became melancholic, and got religious delusions. It was thought that a change of air would be of advantage, and he went to Scotland with his brother, and in about a week he suddenly got worse, had some epileptic seizure, and died in a very short time.

There was, unfortunately, no post-mortem examination in this case, so that we could only guess at the source of the sudden and copious hæmorrhage. But in the next case which I shall relate there was a post-mortem, and in all probability the post-mortem in this case throws some light on the one just given. I will read it to you as reported in the case-book, and from Mr. Beck's notes.

On Aug. 16th, W. P——, aged about thirty-two. received a severe blow on the left side of the head from some bars of iron projecting beyond a railway truck. On admission he was unconscious, but struggled when the wound was examined. The wound was about two inches in length and irregular in shape, and situated about two inches and a half above the left mastoid process. On examination with the finger, a large piece of bone could be felt to be deeply depressed, the upper part being depressed below the lower. A small loose fragment could be seen. This was removed with a pair of forceps, and sufficient room was so obtained to insert an elevator beneath the depressed fragment. The moment it was raised, a stream of blood about as thick as the top of a finger, and rising to the height of about three-quarters of an inch, poured out of the wound. The depressed fragment was immediately seized in a pair of sequestrum forceps, and pulled out. It was about two inches and a half in length by one inch and a half in breadth; it included the lower and posterior part of the parietal bone, but the groove for the lateral sinus was not included. Its surface was covered in part by the fibres of the temporal muscle. It was now seen that the blood came from under the lower margin of sound bone, and, in order to arrest it, plugs of lint had to be pushed in between the dura matter and the bone. From the situation of the fracture with relation to the lateral sinus, it was evident that the depressed fragment had been driven downwards and inwards, and its point had lacerated the sinus, but was partially plugging the wound it had made. On raising the fragment, the blood burst out through the wound. The fracture was just above the sinus, and the depressed fragment was driven downwards, and inwards into it. The plugs of lint inserted in order to stop the bleeding lay in the same position, and instead of pressing together the two sides of the sinus, they propped the

wound open and projected actually into the cavity of the sinus, a condition almost absolutely certain to cause decomposition and breaking down of any clot that might form, and so give rise to septic embolia and pyæmia.

If the surgeon in charge could possibly have fully comprehended the situation, the proper line of practice would probably have been to cut away the bone with the trephine or Hey's saw till the sinus was brought fully into view, and then to apply direct pressure. This operation might have been easily performed while the plugs were arresting the hæmorrhage. But such minute diagnosis is impossible. On the fourth day the temperature rose to 102°, and he had a rigor. On the fifth day the plugs were removed, but the blood poured out just as at first. The plugs were immediately re-applied. On the same day convulsions commenced. They began by twitching of the right side of the face and turning of the head to the right side; then the right arm twitched, then the right leg, and finally the right arm. At this time there was some evident want of power in the right side, but this disappeared in a few days. He had become more conscious, and seemed to know his name when spoken to. On the sixth day he had twenty-seven convulsions. Temperature rose to 104·5°, and he had another rigor. The convulsions continued till the eleventh day, when they ceased. He had then regained consciousness to a great extent, knew his wife, and could answer questions. On the tenth day another attempt was made to remove the plugs, and the greater part was got away, but on trying to remove the deeper part hæmorrhage again commenced, but ceased at once on applying a new pad over the remnant of the old one. On the fifteenth day the plugs were successfully removed. The symptoms of pyæmia were, however, now well marked, and the patient ultimately died of this disease on the 31st day. A few days before death, a large abscess formed in the neck below the mastoid process, on squeezing which, pus could be made to pour out from the hole in the skull.

The post-mortem showed the conditions above described in the bone and sinus. The sinus was not firmly occluded, being filled on each side by soft decolorised putrid clots. This condition of thrombosis and decomposition of the thrombus had extended into the mastoid vein and through the mastoid foramen, and it was this that had caused the abscess in the neck, on squeezing which the pus found its way by the mastoid foramen into the lateral sinus, and from that through the opening in it into the wound in the head from which it flowed. The rest of the post-mortem was characteristic of the pure embolic form of pyæmia. Every organ of the body was typically healthy, except the lungs, which were riddled with secondary abscesses, evidently of embolic origin. The kidneys presented the usual swelling found after death with high temperature.

Now here was a case, then, of extensive intracranial hæmorrhage, not from an artery but from a sinus—one of the venous sinuses; and you can easily conceive that if there had not been a very free outlet to this blood it might readily have accumulated within the cranium, and you would have had compression of the brain from venous blood, as you got it in the other case from arterial blood. You got in this case that peculiar train of symptoms that used to puzzle the older surgeons—namely, the occurrence of pyæmia, and the tendency to secondary deposits, especially in the liver. There was no doubt of the pyæmia in this case, and it was due to the large wound of this venous sinus, and the consequence of a plug which could not be removed, leading to general blood-poisoning.

There is only one point more that I will speak about to-day, and it is that these cases of blows on the side of the head with detachment of the dura mater seem also to explain the occurrence of intracranial suppuration. It has been well-known to surgeons that after blows on the side of the head without fracture an abscess will form between the cranium and the dura mater. That abscess no doubt forms just as the clot does in the vacant space between the cranium and the detached part of the dura mater, but in order that it may form something more is necessary than the mere detachment of the dura mater—the mere detachment of the dura mater will not give rise to abscess. These abscesses only form if the portion of skull which has been struck loses its vitality, just as we get acute subperiosteal abscess on the tibia of a child. The stripping off of the dura mater, which is the chief organ of supply of blood to the cranium, is not, however, sufficient, because the cranium receives blood through the anastomoses of the diploe, and also receives blood from vessels that take their origin from the exterior of the skull. In order that abscesses should form you must have the periosteum stripped off, and you have this stripped off at the same time that the dura mater is detached. You will have the vascular supply of the bone so seriously interfered with, both from within and from without, that it loses its vitality, and thus, like all necrosed bone, becomes a source of irritation and of abscess.—*The Lancet.*

THE BLOOD IN DIPHTHERIA.—MM. Bouchut and Dubrisay communicated to the Paris Academy of Science (*London Med. Record*) the results of the counting of the blood-corpuscles in diphtheria. The numerations were made by Hayem's process; and the writer proved that in diphtheritic angina the number of white corpuscles is considerably augmented, whilst that of the red corpuscles is diminished. The increase of the white corpuscles varies directly with the gravity of the disease.—*Clinic.*

THREE CASES OF STRANGULATED INGUINAL HERNIA; OPERATION IN EACH CASE WITHOUT OPENING THE SAC; RECOVERY.

Under the care of Mr. Geo. Lawson. Middlesex Hospital.

An operation was performed in each of the three cases of strangulated oblique inguinal hernia here recorded, and the protruded intestine returned without opening the sac. When the hernia can be reduced by a simple division of the external stricture, and without exposing the intestine, the patient is naturally exposed to far less danger than when the sac is opened; but, unfortunately in a large number of cases of strangulated hernia, and especially in the inguinal variety, it is absolutely necessary to open the sac, either to relieve the stricture within the sac, or else to ascertain the condition of the bowel, in order to decide whether it is advisable or not to return it within the cavity of the abdomen. It is important to note that all the patients were taken to the hospital at an early stage. In the first two cases the symptoms of strangulation were most acute, but as only four or five hours had elapsed from the first symptoms of strangulation, there was reason to hope that the bowel was not much damaged, and that if it could be returned it would soon recover from the effects of the constriction to which it had been subjected. These cases illustrate very clearly the advantages of an early operation in all cases of strangulated herina.

In Cases 1 and 2 the symptons were so acute that there was reason to fear that if the operation were delayed some hours a fatal result would follow. In Case 2 the strangulation had existed only four hours, and yet the bowel was evidently considerably damaged, for pain, tympanitis, and vomiting continued for three days after the operation, but gradually yielded to fomentations and opium. All the patients recovered.

Case 1. *Strangulated oblique inguinal hernia; operation without opening the sac; recovery*—William K——, aged sixty-four, a labourer, was admitted on July 9th last, suffering from a very acute strangulation of an inguinal hernia on the right side. The hernia had existed since the previous September, but was easily reducible by the patient himself. He had never worn a truss. On the evening of his admission into the hospital, whilst walking, a large portion of the bowel suddenly came down into the scrotum. Pain and vomiting quickly followed. When he reached home he made many trials to return the hernia, but failed. The pain and sickness increasing, he was taken to the hospital. Ice was applied to the tumor, a full dose of opium was given by the mouth, and gentle taxis was applied by the house-surgeon. Although only four hours had elapsed since the descent of the hernia, the symptoms were most intense. The belly was tympanitic. The tumor, the size of the fist, was very tense and tender. There was severe pain in the abdomen, accompanied by stercoraceous and almost incessant vomiting. Mr. Lawsom was sent for, and determined at once on operating. The patient having been put under ether, a small incision, about an inch and a half in length, was made over the neck of the tumour, and the external ring, which was tightly girting it, was divided, but the sac was not opened. With a little manipulation, the contents of the sac were returned into the abdomen. The wound was closed with two sutures, and a pad, with a little weak carbolic acid lotion (one part in a hundred of water) was applied, with a bandage, and the patient placed in bed with his legs bent over a pillow. All symptoms ceased immediately after the operation. The bowels acted on the eighth day after a dose of castor oil, and on the twelfth day the wound was completely healed, and a truss was ordered.

Case 2 *Strangulated oblique inguinal herina; operation with opening the sac; recovery.*—William L——, aged thirty-eight, coachman, was admitted on Nov. 8th last, suffering from an acutely strangulated inguinal hernia. He had been ruptured for over twelve months, but had never worn a truss, and had been always able to return the hernia himself. About two hours before his admission he was riding a horse, when the hernia suddenly descended, but this time it was much larger than on any previous occasion. He went home and endeavoured to reduce the hernia, but without success. As the belly was very painful, and he began to vomit, he was taken to the hospital, where ice was applied to the tumour, a full dose of opium given internally, and a little gentle taxis tried. The symptoms, however, rapidly increased, the pain in the belly became very severe, the vomiting stercoraceous and frequent, and the tumour, about the size of an orange, very tender to the touch, and tense. Mr. Lawson saw the patient between four and five hours after the descent of the hernia, and as the symptoms were urgent, at once decided to operate.

The patient having been put under ether, an incision was made over the neck of the tumour, upon the external abdominal ring, which tightly gripped the hernia. The ring was nicked freely with a hernia-knife, and the intestine returned into the belly without opening the sac. The wound was closed with sutures, and a pad of lint, wet with a little weak carbolic-acid water, was bandaged firmly over the wound. Half a grain of extract of opium in a pill was given every four hours. He was sick three times after the operation, but next morning he felt easier, and the pain in the belly was less.

On the 10th he was still frequently sick, but vomited only the contents of the stomach. Fomentations to the belly were applied, and opium pills continued. The wound looked well, and was nearly united. On the 11th the sickness had ceas-

ed, but there was still pain in the belly, which was rather tympanitic. On the 12th the tenderness of the belly had passed away, and the opium pills were omitted. The patient continued from this time to do well. On the 21st, twelve days after the operation, the wound was quite healed. A truss was ordered, and on the 30th the man left the hospital.

CASE 3. *Strangulated oblique inguinal hernia; operation without opening the sac; recovery.*—Edward W——, aged twenty-three, a porter, was admitted on Dec. 4th last suffering from a strangulated oblique inguinal hernia of the right side. He was ruptured last Easter for the first time whilst lifting a heavy weight. He had worn a truss ever since. On the morning of his admission, at about 6 A.M., whilst coughing, the hernia again came down, and he was unable to reduce it. Feeling sick, and having pain in his belly, he applied to the hospital, and was admitted at about 8 o'clock, two hours after the descent of the rupture. Ice was applied over the tumour, opium given by the mouth, and the taxis was tried, but without success. As the symptoms were not urgent, this treatment was continued until 2 o'clock, when Mr. Lawson saw the man. By this time undoubted symptoms of strangulation had set in; there was then a tense irreducible inguinal hernia filling the right side of the scrotum. There was dragging pain in the abdomen, extending downwards from the umbilicus, together with regurgitant vomiting of dark-green bilious matter.

As the symptoms were now becoming urgent, Mr. Lawson decided to place the man under ether, and, if he did not succeed in returning the hernia by taxis, to operate. Ether was accordingly administered, and as the hernia would not yield to moderate taxis, a small incision of about one and a half inches in length was made over the tumor upon the external abdominal ring, which was apparently the seat of constriction. This was divided, and the bowel was returned within the abdomen without opening the sac. The wound was closed with two sutures, and dressed as in the other two cases.

The patient received immediate relief from the operation. The pain and vomiting ceased. On the fifth day after the operation the bowels acted voluntarily. On December 20th the wound was healed. On December 26th the patient left the hospital quite well, and wearing a truss.—*The Lancet.*

THERAPEUTIC USE OF IODOFORM.

Locally, iodoform, as a dry powder, brushed lightly over the surface with a moistened camel-hair pencil, has been for three years my almost invariable treatment of venereal sores, especially the local chancre. During the last few months, I have often substituted for the dry powder an ethereal solution (one part of iodoform in six or eight of ether). The sore is touched or dabbed with a pencil dipped in the ethereal solution, according to its size and depth, lightly or copiously. The ether quickly evaporates, leaving a thin pellicle of iodoform, that as effectually stays the spread and produces healing of chancres as does the more copiously applied dry powder. Thus the surface is covered more exactly, and the disagreeable smell of the iodoform is too faint to attract attention. The sore is well washed with water and dried before the idoform is applied, and the surface is lastly protected by a bit of dry lint. When the secretion is abundant, the dressing must be renewed twice daily, but in three or four days the amount of discharge becomes so scant that one dressing *per diem* suffices.

In this way, venereal sores heal quickly. Pain subsides at once; the sore is well in a week or ten days, and the chances of consecutive inoculation or bubo are greatly lessened. In a very few cases, the application of iodoform gives momentary smarting, which is very bearable; even the ethereal solution does not hurt, and usually the patient declares the application to be quite painless. I avoid using iodoform on inflamed sores, or on simple granulating wounds; but indolent non-specific ulcers are rapidly improved by iodoform locally applied.

Lately, I have given iodoform internally with great benefit. It acts more rapidly than potassic or other iodides, and, judging from experience thus far, is as readily borne as are those salts. I have given it in one-and-a-half-grain doses as a pill with extract of gentian. Three pills are given each day, increasing gradually till eight or ten pills are taken in twenty-four hours.

I have used it with excellent effect in cases of obstinate syphilitic ulceration of the tongue, where the dorsum is covered with rugged thickened epithelium, which is constantly splitting into deep fissures, and thus causing continual severe pain to the patient. This affection is often quite insensible to mercury, alkaline iodides, or arsenic—the remedies usually beneficial. In three of these obstinate cases, where I had been treating the patients at intervals for years with the remedies just mentioned with little lasting benefit, iodoform-pills have acted like a charm. Pain, immediately lessened, in two or three days ceased wholly; and the fissures healed rapidly, while the tongue soon shrank to its natural size. How long the relief will endure, time alone will show; but any interval of only apparent cure of this very painful affection is a great blessing to the sufferer, and time is given for the exhibition of mercury if required. In December last, I had under my care in University College Hospital a patient with ulcerated and protruding gumma of the left testis, non-ulcerating gumma of the right testis, and ulcerating gummata of the skin

over the upper end of the right tibia, with other syphilitic affections. Iodoform was administered in pills, and water-dressing applied to the ulcers. Rapid healing and subsidence of the swellings took place, notwithstanding that, when the dose of eight pills *per diem* had been reached and administered for three days, an outbreak of pyrexia, coryza, and iodic acne rendered it necessary to drop the drug completely for a short time. In three weeks, the patient left the hospital almost healed, and continued his treatment as an outpatient. Again, a lady who has during the last two years consulted me occasionally for intensely agonising pain in the head caused by syphilitic pericranial and cranial disease, for which a customary dose was thirty grains of sodium iodide three times daily, was at once relieved of pain by the iodoform pill taken three times daily, though on the third day, nausea became too urgent to allow the iodoform to be continued in that quantity; it was at first diminished till pain ceased, and then discontinued altogether. This small experience has satisfied me that in iodoform we have a very useful addition to our store of weapons for fighting syphilis. Further observation will enable us to apply it more exactly and when most suitable.—*Dr. Berkeley Hill, in Brit. Med. Journal.*

CHLORAL-HYDRATE IN DELIRIUM TREMENS.

A short time ago, I was almost despairing of a case of delirium tremens. The man was most violent, and in a fearful state of excitement; and the remedies adopted appeared only to increase his activity and make him more and more unmanageable. The treatment had been Battley's solution in half-drachm doses; afterwards pure solution of the hydrochlorate of morphia by subcutaneous injection, as much as one grain repeated every two hours. There was no vomiting of the mixtures given on any occasion; these being, in addition to the liquor opii sedativus just mentioned, half-drachm doses of tincture of digitalis given every two hours, etc. After two or three days of the above treatment, and no improvement taking place, I determined to try the chloral-hydrate. Accordingly at 5.10 a.m. I gave him half a drachm (thirty grains), and the same quantity at 5.40. At 6.00, he had a subcutaneous injection of half a grain of morphia. At 6.10, forty grains of chloral were given; at 6.25, two-thirds of a grain of morphia were injected; and at 7.45 he was asleep. The man slept for eight hours, and awoke without headache or other unpleasant feeling except great thirst. He was now supplied with good nourishing food (beef-tea, etc.), and he was put out walking next day. The quantity of the chloral given was one hundred grains, and of morphia one grain and one-sixth, in the space of an hour and fifteen minutes. Previously to the administration of chloral, the pupils were contracted to a point: an indication, of course, that the previous mixtures had been absorbed, but, as we have seen, with the effect only of increasing the excitement. Considering that the preparations of opium given previously had not conduced to somnolency, I attribute this condition to the chloral-hydrate chiefly, if not entirely. In another obstinate case of delirium tremens, in which the usual treatment by digitalis, morphia, etc., was ineffectual, I had recourse to chloral, repeated every ten minutes till one hundred and sixty grains had been taken. The patient then fell over, and, after sleeping for seven hours, was, on awaking, altogether a changed man.

I may add that, during the first two doses, there is always increased excitement, the patient becoming garrulous—indeed, *intoxicated*, to all appearance; but this soon gives place to thick speech, inarticulate mumblings, and peaceful sleep.—*Dr. J. Farrar in Bri. Med. Journal*, Jan. 20, '78.

SLEEPLESSNESS AND ITS TREATMENT.

Dr. Ainslie Hollis, in writing on this subject, maintains that, although the quantity of blood in the brain is diminished during sleep, this diminution is not the sole cause of slumber, for we may have the former without the latter. An increase in the cerebral blood-supply, however, may produce wakefulness, as in the paresis of the cerebral vasomotor nerves from exhaustion. Sense impressions have the same effect by the continual stimulation of the higher nervous centres. An increase in the velocity of the blood-current through the brain is a frequent cause of wakefulness, as in the irritable and hypertrophied heart. The wakefulness of anæmia is ascribed by Willemin to changes in the nervous elements of the brain, and a consequent modification of the circulation therein.

The treatment for wakefulness he classified under two heads:

1. The induction of natural sleep.
2. The production of narcosis, or artificial rest.

One of the most efficient means of inducing natural sleep is the application of mustard plasters to the abdomen. According to Schuler, this produces first dilatation, and subsequently contraction of the vessels of the pia mater; changes due to the constriction or dilatation of the peripheral current-areas of the skin. Preyer, of Jena, advocates the administration of a freshly made solution of lactate of soda, or of some milk, or whey, on the hypothesis that sleep may be induced by the introduction of the fatigue products of the body. Where the insomnia depends upon brain exhaustion, Dr. Hollis recommends the administration, just before

bed-time, of a tumblerful of hot claret and water, with sugar and nutmeg. The alkalies and alkaline earths are useful when acid dyspepsia is associated with insomnia. Electricity has been used in the paresis of the vaso-motor nerves due to an overworked brain. In hot weather, sprinkling the floor of the sleeping apartment with water lessens the irritant properties of the air, adding much to the comfort of the sleepers; possibly the quantity of ozone is at the same time increased.

The artificial rest obtained by the use of narcotics seems to be due to a direct interference with the functional activity of the nervous system. Dr. Hollis does not consider the bromides to possess hypnotic properties, although they undoubtedly act as sedatives on the nervous system, and as such may occasionally induce sleep.—*The Practitioner.*

PARACENTESIS OF THE PERICARDIUM, WITH AN ANALYSIS OF FORTY-ONE CASES.

Dr. John B. Roberts,[1] of Philadelphia, gives an interesting *résumé* of this operation from the earliest times, with the indications for treatment and the general results that may be expected. Riolan first proposed it in 1649, and Romero performed the first successful operation at some time before 1819. Paracentesis is indicated when the effusion is large and threatens to destroy life, ordinary treatment failing to produce absorption. The period that the surgeon must allow to elapse before tapping, is as yet undecided. As a method of giving relief in chronic cases it is probably no more open to objections than is excision of the breast or tongue for cancer. The particular method of operating is now tolerably uniform. A small aspirating needle is to be used,—so small that it simply makes a fine puncture that would not harm the lung if that were pierced. The point recommended by Dieulafoy is in the fifth interspace, about three quarters of an inch from the edge of the sternum. In fifteen out of thirty-four cases this point was chosen. The dangers to be dreaded are wounding of the internal mammary artery, and striking the heart as it is thrown forward in systole. By adopting Dieulafoy's plan the artery is avoided, as it lies from a quarter to half an inch from the edge of the sternum. Injury to the heart may be avoided by having a canula slide over or within the needle, thus guarding its sharp point. The heart may probably, however, bear a certain degree of injury with immunity, according to Eve, Steiner, and others. Baizeau and Roger tapped the ventricle without doing harm, both patients surviving the operation, though in one case one hundred and fifty and in the other two hundred and fifty grammes of blood were drawn. As for the danger of the operation in these forty-one cases, regarding one in which the final result was not given as a fatal case, the mortality was 53.66 per cent. But then the effusion in many of them was merely a single factor of disease; in fact, in seventeen there were other concomitant and often incurable affections. In five fatal cases no other disease was mentioned, which puts the mortality at 12.19 per cent., supposing it to have been from cardiac dropsy alone. Since the year 1850, of the uncomplicated fatal cases the mortality has been 21.45 per cent., which, though not so low as the figures given for all the uncomplicated cases taken together, is perhaps as low as in many other operative procedures that are regarded as perfectly justifiable. In acute rheumatic pericardial effusions the results have been excellent; where, however, the disease becomes chronic a perfect cure is almost hopeless, for, owing to the long continuance of the inflammation, the maceration of the heart, and the pressure of the distended sac, the tissues have assumed new pathological characters.—*Boston Med. Journal.*

[1] New York Medical Journal, December, 1876. New York Medical Record, January 20, 1877.

THE ADMISSION OF WOMEN TO MEDICAL DEGREES.

Dr. Tilbury Fox in a recent number of *The Lancet* says, I hope you will allow me to direct attention to the kind of examination—as shown by recent papers—which women will have to undergo, in company with young men, in order to gain admission to the medical degrees of the University of London. I ask this in the hope that many of the Arts, Laws, and Science graduates who read *The Lancet* may be enlightened upon this particular point.

On turning to the examination-papers for the last half-dozen years, I find, amongst others, the following questions, set by the examiners:—

First M.B., July 30th, 1877.—"Describe the membraneous portion of the male urethra, and the structure in *immediate* relation therewith. Mention the chief points of difference in the female subject."

M.S., 1872.—"Describe fully the character of so-called soft and hard chancre, &c."

Second M.B., 1873.—"Give an account of the modes in which syphilis becomes propagated; the details by which the poison is diffused throughout the system, &c."

First M.B., 1873.—"Describe the connexion of the lower four inches of the rectum in the male, the naked-eye character of the coats of the gut for the same distance, &c."

First M.B., 1875.—Give an account of the genito-urinary organs of the human male."

B.S., 1876.—"Describe in the order of their frequency the several growths which affect the testis, and mention the signs on which you would chiefly rely in the diagnosis of each."

Second M.B., 1875 (Honours).—"What constitutes rape. Mention the lesions which may result from rape (*a*) in the case of adults, and (*b*) in the case of children, pointing out the local affections of the genital organs which may simulate the effect of rape, &c."

Is it surprising that the great majority of the medical graduates view with "destestation" the proposal that women should be admitted to the same degrees as men; the possibility that young women and young men should be subjected to a precisely similar examination, at the same time, and in the same testing-room, upon the topics dealt with in the above quoted questions, and that they should similarly undergo the necessary anatomical and clinical training to fit them for passing such an examination; and, lastly, that women should be encouraged and actively aided to enter the list in honours, in competition with young men at the same table, and, if possible, to carry off the palm for a more intimate acquaintance and superior knowledge upon such subjects as diseases of the testicles, rape, and the like. To my mind the thing is revolting in the extreme, and I believe that when the real facts of the case are known to them, very few non-medical graduates would countenance, *in its present form*, the proposal to admit women to medical degrees in the University.

Excision of the Superior Maxillary Bone.—M Létiévant gives details of a case of very large fibrous nasal polypus, for which he excised the upper jaw. The patient was a young adult, and the tumor protruded into the pharynx, filled up the antrum, and had caused absorption of the hard palate. The operation was one of great difficulty, the bleeding being very profuse, and the danger of asphyxia great. At one time M. Létiévant says he was doubtful if he should be able to complete his operation, "but thinking of a new instrument, the *pinces à résection* of Farabœuf, I applied it to the tumor, and making by its aid a violent effort, tore out, at length, *en bloc*, the whole morbid mass together with the osseous plates to which it was attached." The patient made a good recovery, healing taking place with the rapidity usually noticed in this operation. While the case thus detailed is in itself instructive, the chief interest of the paper lies in the modifications which the surgeon put in practice in the resection of the bone, and which he offers for the acceptance of surgeons. His aim has been,—1st, the conservation of the infra-orbital nerve; and 2nd, the preservation of three spicules of bones intended to form a sort of tripod for the support of the cheek. He accomplishes the first of these ends by cutting out a triangular portion of the bone, just over the infra-orbital canal, by means of a mallet and chisel, the rest of the canal he lays open with bone forceps, and then lifts the nerve out of its resting-place, and keeps it lying on the deep surface of the flap. The three processes of bone he obtains in the following manner:—1st. On the inner lip of the notch made in the separation of the infra-orbital nerve he cuts, by means of forceps, an osseous slip, consisting of the orbital border of the bone and its connection with the nasal process, which latter he also separates from the body of the jaw. 2nd. On the outer lip of the same notch he cuts a second osseous band, which consists of the malar portion of the orbital border and its continuation into the body of the malar bone; then he cuts the malar away from the maxilla. 3rd. The gum and mucous membrane is scraped from the vault of the palate and alveolar process on the diseased side, and with the cutting forceps or chisel a section is made commencing behind the lateral incisor tooth, running into the anterior palatine canal (taking, indeed, the line of separation of the pre-maxilla and maxilla proper); from thence it is carried directly backwards in the middle line, so as to sunder the two palate process as far as the affected border of the soft palate. M. Létiévant quotes Longet in proof of the loss of muscular power which results from section of the sensory nerves of the face, and draws the following conclusion: "It is then evident that it is not enough to save the facial nerve in order to preserve to the facial muscles their muscular irritability after the operation of resection of the superior maxilla, but that it is necessary to preserve also the infra-orbital nerve. The preservation of this moreover, while it retains the motor power, retains also the sensibility, which is a point not to be disregarded."—*Lyon Médicale*, 16th and 23rd Sept., 1877.—*Glasgow Med. Journal*

Battey's Operation.—Dr. J Marion Sims, now in Paris, writes to the *Medical Times and Gazette* an account of Battey's first case of so-called normal ovariotomy, and concludes as follows: "I would like to see this operation recognized by the profession as 'Battey's operation.' I think he is entitled to that honor. He was the first to grasp, in its widest range, the influence and effects upon the general system of what he calls an 'unrelieved menstrual molimen.' He was the first to suggest a method of cure. He was the first to carry out his own suggestion, and to perform an operation for the cure of a disease that had never been cured before. He performed the operation on his own responsibility, without the co-operative aid of a single member of the profession. He has demonstrated the correctness of the principles upon which it was based, and proved its success in practice. He has established a precedent that may now be

followed with safety, and opened up a new field of observation that promises results as grand as those now achieved by ovariotomy. He has raised sorrowing women from a perfect slough of despond, from indescribable suffering, from epileptic convulsions, from repeated pelvic inflammations, hæmatoceles and abscesses, from vicarious and alarming hemorrhages, from threatened insanity, and, in some instances, from impending and certain death, and restored them to health, to friends, to usefulness, and therefore to happiness."

"We have precedents enough for naming diseases and operations for those who have been the first to discover and describe the one, or to originate and perform the other. I may name Bright's disease, Addison's disease, Colles' fracture, the Hunterian operation, Syme's operation, Pirogoff's operation, Graefe's operation, etc. The moment they are named, we recognize each operation, and the manner of executing it in its manifest details. Let us honor Battey by calling this 'Battey's operation.'" —*Clinic.*

THE PANCREAS IN DIABETES.—M. Lancereau laid before the Académie de Médicine some specimens exhibiting extensive lesions of the pancreas in subjects of diabetes, and having related the histories of the cases whence they were derived, and referring to others already on record, went on to say that it was thus evident that, at least in some cases, diabetes is accompanied by great alterations in this organ. In these cases the progress of the disease has been relatively rapid, and has been attended by polyphagia, polydipsia, excessive emaciation, and abundant glycosuria—in fact, by all the characteristics of saccharine diabetes. So, also, animals from which the pancreas has been removed, became voracious and rapidly emaciated, and die very quickly. There would seem, therefore, to be no doubt that there is a casual relation between these changes in the pancreas and the disease in question. This form of diabetes may be distinguished by the relatively rapid occurrence of emaciation with polyphagy and polydipsia and by the peculiar character of the alvine evacuations. Its prognosis is most unfavorable; the indication for treatment consists in suppressing alimentary substances that are digested by the pancreatic juice, in favor of those which undergo digestion in the stomach.—*Gaz. des Hop.—Medical Times and Gazette.*

A LADY PRACTITIONER IN DISGUISE.—A Dr. James Barry served as surgeon in the British Army for more than fifty years, during which time he held many important medical offices, and gained an enviable reputation as a cool and skilful operator. He was of a very irritable temper, and, while stationed at the Cape of Good Hope, fought a duel. Notwithstanding frequent breaches of discipline, he attained high rank in the army, served in many parts of the world, and in 1865, his name stood at the head of the list of inspectors-general of hospitals. In July 1865, the eccentric surgeon died, and the next day it was officially reported that the doctor was a woman. No suspicion of the surgeon's sex seems to have been entertained, even by his most intimate associates. In addition to his other accomplishments, Dr. Barry was an inveterate smoker.—*New York Journal.*

ACETIC ACID IN PSORIASIS.—Dr. Jansen (*Revue Médicale*) finds acetic acid the most effectual application. After a bath of hot water and soap to soften the crusts, the scales are to be removed by a small brush. The acid is then applied by means of a sponge. Very soon the affected parts become pale, then injected, and finally slightly inflamed. There is a feeling of smarting, which lasts half an hour. The crusts fall off, and in some cases appear no more after the fifth or sixth application; in others they reproduce themselves for a longer time, gradually becoming less and less thick. Only one application in the twenty-four hours should be made, and the parts should be carefully bandaged. —*Clinic.*

OVARIOTOMY.—Prof. Donald Maclean of Ann Arbor has within the past few months performed the operation of ovariotomy six times. Several of these cases were very complicated, requiring the removal of both ovaries, etc. The result has been, five cases of complete recovery, and one death. In the latter case the tumor was of over twenty years' growth and weighed upwards of one hundred pounds. These cases show a mortality of but $16\frac{2}{3}$ per cent., which is the best result yet obtained in the Northwest. The doctor promises a detailed report of his cases for an early number of the News. —*Michigan Med. News.*

FRAUDULENT LENSES.—*The New York Medical Record* reports that quite an excitement has been created in that city by the discovery that one of the leading opticians is in the habit of importing from Paris ordinary commercial lenses, remounting them after the English style, and palming off such inferior productions as the lenses of the best makers. The fraudulent practice has probably been carried out by American opticians for a long time.—*Clinic.*

The French have passed a law that "Every person who may be condemned by the police force twice for the crime of open drunkenness will be held incapable of voting, of elective eligibility, and of being named for the jury or any public office."

A FIBRO-CYSTIC tumor of the uterus cured by ergot is reported in the Boston Medical and Surgical Journal. The ergot was given in half-drachm doses thrice daily.

THE CANADA LANCET.

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TORONTO, MAR. 1, 1878.

THE LATE DR. HODDER.

It becomes our sad and painful duty to announce the death of Dr. E. M. Hodder, of Toronto, after a short illness, at the age of 67. Dr. Hodder was the son of Captain Hodder, R. N., and was born at Sandgate, Kent, England, in 1810. He was educated, when a boy, at Guernsey grammar school, and afterwards at St. Servans, France. In 1822 he entered the navy as a midshipman under his father, but left the service at the expiration of one year, and having great taste for medicine, he soon after commenced its study under the celebrated Mr. Amesbury, with whom he was articled for five years. He passed the examination of the Royal College of Surgeons, England, in 1834, and received the diploma of membership, after which he spent two years in Paris in the prosecution of his studies, and subsequently visited Edinburgh, where he remained some time. He commenced practice in London, England, where he remained two years and afterwards removed to St. Servans, France. After remaining there about a year he visited Canada, but returned in a few months to St. Servans, where he remained for three years in the practice of his profession. He now determined to try his fortunes in the new world, and came to Canada. He first settled in the Niagara district, where he remained five years, and then removed to Toronto in 1843, where he practised with great success both as a physician and surgeon, until the time of his death. Dr. Hodder was married to a daughter of Captain Tench, H. M. 87th Royal Irish Fusiliers. Besides his widow, he leaves a large family of sons and daughters to mourn his loss.

He received the degree of C. M. from King's College, Toronto, in 1845, and M.D., from Trinity College in 1853. In 1854 he was elected a Fellow of the Royal College of Surgeons, England, and in 1865 a Fellow of the Obstetrical Society of London, and was one of the honorary local secretaries of the latter society.

He was Prof. of Obstetrics in the Medical Department of Trinity College, Toronto, from 1850 until its discontinuance in 1857. Subsequently he lectured on the same branch in the Toronto School of Medicine for several years. On the revival of the Trinity College Medical Department in 1870, he was unanimously appointed Dean of the Faculty and in 1877 he was reappointed Dean of the newly incorporated Trinity Medical School. He held a position on the acting staff of the Toronto General Hospital for a period of 20 years, and was appointed on the consulting staff in 1872. He was also consulting surgeon to the Burnside Lying-in-Hospital, Children's Hospital, &c., &c.

He was a most enthusiastic yachtsman, and for many years past held the position of Commodore of the Royal Canadian Yacht Club.

Dr. Hodder was a prominent member of the Canada Medical Association and was elected President at the meeting in Halifax in 1875. He was also a member of the Medical Council of Ontario from 1872 up to the time of his death. As a surgeon he was bold yet cautious, and was very successful in all his operations. As an ovariotomist he was admittedly the most successful in Canada. He was the author of several papers on medical and surgical subjects, published from time to time in the medical Journals. He was the first to inject milk into the veins in collapse. This he did in the stage of collapse in cholera during the epidemic of 1842.

Dr. Hodder had not been in good health for several months past. He complained of more or less constant headache over the left temple, with weakness of voice, thickness of speech, and general debility. On the 15th of January he was suddenly seized while sitting at his dinner-table, with complete paralysis of speech and deglutition. There was also inability to protrude the tongue, and rigidity of the right arm. These symptoms partially disappeared in a day or two, and he was able to speak indistinctly in monosyllables, but almost invariably said "yes" for "no" and the reverse. At the end of ten or twelve days he so far recovered as to be able to move about with a little assistance. His mind was tolerably clear at times, at other times

very hazy. Though there never was any paralysis of the extremities, yet he never attempted to help himself, and appeared to have great difficulty in finding words to express his wishes. Aphasia was well marked. His progress towards recovery was never satisfactory. About a week before his death his strength began to fail and he was obliged to remain in bed. Symptoms of serous effusion set in, and he became comatose about forty-eight hours before his death. The diagnosis was white softening of the left anterior lobe of the brain. There was no *post mortem*.

His death is a loss of no ordinary value, and will leave a blank very difficult to fill, for medical men of his ripe experience and acknowledged skill are very few in number in this or any country. He was much beloved by those of his patients and friends who knew him best. Although sometimes brusque and abrupt in manner, he was yet kind at heart, and his loss will be sadly felt by many patients and friends all over the country. In his death the profession also loses one of its brightest ornaments; one whose gifts were of no ordinary character, and whose talents were almost entirely consecrated to the faithful discharge of professional duty and the well-being and advancement of the highest interests of his profession.

His funeral was largely attended by the students and members of the Faculty of both medical schools, the medical profession and the general public.

SANITARY BOARDS.

It is a matter for congratulation that the Legislature has appointed a commission to enquire into the best mode of procedure for guarding against the numerous factors of disease now existing in our cities, towns, villages, and country generally, and that to assist in this important task, they have availed themselves of the experience of a number of competent medical men. We would fain hope that the commission will not confine itself to the task of devising the best scheme for the government, in the future, of Boards of Health, but to that labor add another very important one, viz., an improvement in the means at present employed for collecting medical statistics. Averages, as Sir H. Holland observes in his "Notes and Reflections," may, in some sort, be termed "the mathematics of medical science," and the success with which it has been employed of late by many eminent observers, particularly Mr. Simon, affords assurances of the results that may hereafter be expected from this source. We must compare together, says M. Louis, (Memoires de la Societ Medicale d'Observation de Paris) "a great number of cases of the same disease of equal severity, some relating to subjects in whom the disease was left to itself, others of individuals to whom certain medicines were given. After doing this, we must study the action of the same therapeutical agent on those in whom the disease was severe, and on those in whom it was slight, or those on whom the remedy has been used in large or small doses at a period near to, or remote from the commencement of the disease. This last circumstance is very important. So, likewise, we must mention whether the medicine is used alone, or in conjunction with other remedies. But not only does this method require much labor, but it also supposes a considerable series of facts, the connection of which is difficult, especially when treating severe affections in which we are accustomed to make new attempts, and which will not allow of our remaining a mere spectator of the progress of the disease. For it must be evident that we do not seek to know by approximation what remedies have *appeared* to be more or less successful, but to demonstrate in a rigorous manner, that a certain remedy, or certain method is useful or hurtful, and in different degrees, according to the manner in which we employ it." A glance at the history of medicine shows, that it has suffered more from faulty observation and false facts, than from false theories; for after all most of the theories have been based upon fancied observation. Averages and numerical methods can in no case, however, afford more than an approximation to the truth, yet the approximation is closer than can be attained in any other method. Accuracy in diagnosis is the first essential. If, as there is too good reason to suppose, in epidemics of diphtheria, ordinary cases of inflammation or ulceration, are included in the estimate of number, what value attaches to the percentage of deaths and recoveries, or to the therapeutic agent employed? Without that accuracy, what reliance is to be placed in the vaunted cures of "all the ills that flesh is heir to," by the most recent craze electric baths? History repeats itself; some sixty

years ago Miss Porter's magnetized beefsteaks were the specifics in vogue. Might not the advocates of the baths, accelerate the cure of their patients by such a diet?

There has been doubtless an immense accumulation of *quasi* facts in every department of medicine; but the most pressing want under which our science at present suffers is the due elimination of the false from the true. It is only by the statistical test that we shall finally arrive at correct conclusions. Let us hope, therefore, that the mode of collecting these statistics will be so improved on as to reduce to a minimum the errors resulting from a false diagnosis. In framing a bill for the better carrying out of sanitary laws, we trust the Government will bear in mind the indisposition that all municipal bodies display in carrying out the essential reforms in the usually existing faulty drainage, sewerage, and disposal of sewage, inasmuch as such changes involve a large expenditure; and to enable the members of Boards of Health satisfactorily to discharge their onerous and responsible duties, they should be armed with plenary powers, whenever the report of the Government engineer endorses that of the local. We consider also, that every local Board should have at least two Government nominees. In cases where the magnitude of the work requisite for sanitary purposes would be beyond the means of the ratepayers, a very slightly increased county rate would without being onerous on the inhabitants, be necessary. The local boards should insist upon the latrines being placed at least a hundred yards distant, and not in a direct line with the wells. In small towns where no water-works exist, the dry earth or Rochdale system might be tried. As a rule the police officer appointed by the board to see their ordinances properly carried out, should be instructed to report immediately any non compliance with the laws, and the onus of enforcing them should rest on the board, and not on the officer.

KEEP THE MOUTH CLOSED.

In these times when people are becoming alive to the nature of many contagious diseases through a better acquaintance with the "germ theory," and when diseases of a preventable class are so prevalent as to be quite alarming, it is well to enquire into some of the most convenient means of prevention.

Now granting that "disease germs" are everywhere found floating in the air, even from the dust arising from the carpet on which the satin slippered lady may be treading, a little advice about keeping the mouth closed and thus excluding them from the system, may be seasonable, and of advantage, for although we write for the professional reader, yet a gentle reminder on a subject so important may lead him to repeat the advice to his patients with the endorsation of his own authority. 'Keep your mouth shut," used to be said to us in our noisy boyhood days, when we happened to cause a little annoyance to older people with our rompings; or when we artlessly were inclined to tell all we knew, and a little more, to the newest arrival; but there is a more important sense than this in which the mouth should be kept closed.

By the evil habit of breathing through the mouth, we take in mouthfuls of unstrained air, full of dust or disease-germs, as the case may be; and in cold weather predispose ourselves to sore-throats and bronchitis by bringing into direct contact with the throat and air-passages, air full of frozen particles of moisture, which cause considerable irritation. In this way incipient lung affections are established and much trouble occasioned; common sense should suffice to teach people that the nostrils, not the mouth were evidently constructed for breathing through. These are the natural channels of ingress and egress of the air. Moreover the air-passages are provided with a natural strainer, in the form of a lining of hairs, which, in some degree at least, prevents the ingress of dust and other noxious matters, in the air we breathe. Besides, by drawing our breath through the nostrils only, the air is warmed by coming in contact with the membranes before it reaches the lungs, and in this way congestions or inflammations of these organs are avoided.

It has been confidently asserted by some, who pretend to have tested the matter, that *miasms* are prevented from entering the blood, if the breathing is performed through the nose. All the air taken into the lungs, in this way, comes in contact with the mucous membrane of the nose, and this is supposed by those who have travelled and dwelt much in malarious districts to possess some power of neutralizing malarious and contagious poisons.

They have lived in malarious districts, slept on the banks of malarious rivers for years, without contracting any of the forms of fever peculiar to such neighbourhoods, and ascribe their exemption solely to the habit of breathing through the nose.

In cities and other centres of contagion many examples of the unnatural "mouth" respiration may be seen, which is always hurtful. No perfect rest in sleep, can be obtained with the mouth open, and quiet rest is a valuable consideration; it is nature's great restorer. Mr. Catlin in his little work entitled "Shut your mouth and save your life," contrasts the natural repose of an Indian child, with the uncomfortable slumbers of an infant of civilization, with its wide open mouth and gaspings for breath." The Indian child, was never allowed to sleep with its mouth open; as it fell asleep the savage mother never failed to press its lips together, till she had fixed a habit that was to last for life; for when these children grow up, waking or sleeping they keep their mouths shut." And to this habit, he ascribes the immunity that the native race of America then enjoyed from the deplorable diseases and mortality rate among civilized people. Among two millions of these people that he had visited, he never saw or heard of a hunchback or crooked spine, an idiot or a lunatic, whilst premature death was quite uncommon. The mouth should be kept closed when in a crowded or dusty room, when among a crowd at any time, when on the street, in the field, work shop or mill —in fact at all times when possible so to do. If the habit is once acquired and put into practice, it will pay in improved health and prevention of disease. A firmly closed mouth also promotes personal beauty; open mouths cause the best features to wear an insipid and unattractive appearance.

LEGISLATIVE SANITARY COMMITTEE.

The committee recently appointed by the Ontario legislature to enquire into and report upon the sanitary condition of the Province have issued a number of questions addressed to medical men with the view of collecting as much informaiton on the subject as possible. As was to be expected some physicians who have paid attention to such matters have sent replies, but the great majority have taken no notice of them—but were rather disposed to laugh at the absurdity of some of the questions. Many of the questions were most important and should have been replied to. We have before us the replies given by Dr. Philip of Brantford, to one of the questions with its subdivisions A, B, C, from which we take a few excerpts.

A.—Drainage—nature, extent, etc. There is practically, no drainage in the city of Brantford, except private drains. In most cases, house drainage passes into large cess-pits at a distance from the houses of from ten to one hundred yards. When these are full, other pits are dug alongside of the old ones. Most of these cess-pools are in close proximity to wells, in some cases not more than five feet away. In not a few cases, especially in the older parts of the city, the back yards are saturated with *ordure*. The result of this state of things is simply pollution of the soil in proximity to dwellings, which, if persevered in must engender zymotic diseases. Of this there is clear evidence in the constantly recurring cases of virulent diphtheria, typhoid fever, *et hoc genus omne*.

B—Nature of soil and distance to bed rock. The soil on the surface is mainly sand and gravel. The city is built in a basin of the grand river valley the sides of which rise to about 100 feet all around, enclosing an area of about 1½ miles in breadth and 3 in length, the high lands draining naturally down to the river. The natural drainage is thus good, and the facility for artificial drainage, the best that could be secured. The sand and gravel vary in depth, from a slight covering in the low grounds to from 50 to 60 feet in the high; below it, lies clay, yellow and blue which has a thickness of from 50 to 150 feet, and in some places probably more, before the Onondaga lime-stone is reached.

C.—Depth of wells, quality of water, supply, ample or limited. Wells, dug from 20 to 30 feet deep, are generally abundantly supplied with water from the clay beds. That the wells and springs are supplied, in part, from the surface water, due to the precipitation of rain and snow, is very manifest. The increase of late in the number of wells is lowering the water level and diminishing the flow of the springs. This being the condition of things, the water in the wells and from the springs naturally holds, in both chemical and mechanical solu-

tion, the moveable and soluble elements of the soil through which it passes, and cannot fail to be affected by the numerous cess-pools that lie in its path. Besides the wells, there is an artificial supply of water from certain springs, forced by steam power through mains laid along the principal streets but this is so impure, that it can only be used for washing or mechanical purposes and for extinguishing fires. No conditions could thus be more favorable for generating and propagating zymotic disease." Most towns and villages by reason of their sanitary condition, (being generally such as exist in Brantford) are as much exposed to disease of the zymotic type as are the crowded parts of large cities. There is besides, such almost universal ignorance of general uncleanness, and indifference to its dangers, that little or no hope can be entertained of voluntary local improvement. To effect a change for the better, aid and compulsion must come from the Legislature.

MEDICAL CONTRACT SYSTEM.

In another column will be found a letter from Mr. Broughton, manager of the Great Western Railway Company Hamilton, in regard to the tariff of medical fees adopted by the Provident Society belonging to that Company. In inserting the letter, we do not wish to be understood as in any way endorsing his views. From our experience of the medical contract system, both here and elsewhere, either in connection with wealthy corporations or charitable societies, we have no hesitation in saying that it is most pernicious in its tendency, and highly injurious to the best interests of the medical profession. This question is rapidly looming up, and will sooner or later come before the profession for settlement. The matter is entirely a professional one, and must be dealt with chiefly by the members of the profession themselves. The profession has itself entirely to blame for the state of matters complained of. So long as medical men are ready to accept any offer which may be made them by secret orders or societies, to become "club doctors" for the sake of the notoriety it gives them, and the opportunity it affords them of a possible extension of their practice, just so long will "societies" take advantage of their impecuniosity. For our part, we quite agree with the statement of our correspondent, that we can see no difference between accepting one dollar per head from the provident society of a railway company, and accepting a similar appointment from a lodge of "Odd-fellows," "Orangemen," or "Foresters." The principle is the same in both cases, and utterly at variance with sound business principles, as well as derogatory to the dignity of the profession. We have nothing to say against charitable societies; they are very useful in their way when properly conducted, but they have no claims upon the medical profession for what is next thing to gratuitous services, any more than they have upon the legal or any other profession. Who ever heard of lawyers giving their legal services to a body of men associated together, or a society or lodge, for so much per head per annum? On the other hand, we believe the members of the society are not as well cared for, as if they were attended in the ordinary way. There is a disposition to reduce to a minimum the services rendered, under the circumstances of such low fees. It is also a well-known fact, that the societies are not able to secure the services of the ablest and most experienced physicians, for as a rule, these are too busily engaged in their private practice to undertake work of such an unremunerative and unsatisfactory character—nor will any physician, no matter how skilful he is, be acceptable to every member of the society. The result is, that many of the members, although they pay their quota towards the physician, never send for him in case of sickness or accident. There can be no objection to members of societies or lodges assisting each other in case of sickness or accident, by contributing a certain sum to pay for medical attendance, but each member should be left free to call in the physician of his choice, who should be paid his ordinary fees out of the funds so contributed. This plan, which has been adopted by several charitable societies in this city and elsewhere, is the only rational one.

NEW THERAPEUTICAL NOTES.—In the new form of in-stitch, introduced this month by the firm of McKesson & Robbins, will be noticed some therapeutical notes on new remedies prepared by them in the form of gelatine coated pills, and granules. These preparations are most elegant in appearance, easy of administration and well worthy of the careful consideration of the profession.

MEDICAL LEGISLATION.

The Executive Committee of the Ontario Medical Council has framed and introduced a Bill into the local Legislature to amend and explain the meaning of the Ontario Medical Act. It has been taken in charge by Dr. Clarke, M.P.P., for Norfolk. With the provisions of the Bill as it stands, and the clauses that are likely to pass, there can be no objection, but it does not go far enough. There should be increased territorial representation, and the medical men in the House will fail in their duty if they do not introduce an amendment to that effect. The period of membership should also be reduced from five to *three* years. The Medical Council should also have power given to it, similar to that which obtains in the Law Society, of regulating the internal discipline of the college; and of striking from the roll any who are guilty of flagrant violation of its rules and regulations. The matter of admitting to registration, without further examination, *Canadian graduates* with additional British qualifications, after an extra course of medical study, should be also provided for. We also trust that a clause will be introduced regarding the appointment of the examining board. It is a monstrous thing that the members of the Council should have power to constitute themselves the examiners, and also pay themselves $100 each, for the performance of that duty. This has done more to bring the council into disrepute than almost any other act. But for this circumstance, we never would have had those disgraceful proceedings of two years ago at the Toronto University. We trust that the members in the House will not allow the opportunity to slip, of making certain amendments which are much more necessary than those now introduced.

OVARIOTOMY.—Our subscribers will doubtless be pleased to learn that the paper on Ovariotomy, prepared for the late meeting of the Canada Medical Association by Dr. J. W. Rosebrugh, of Hamilton, will be commenced in the April number of the LANCET. As Dr. Rosebrugh is understood to have had considerable experience and very good success as an ovariotomist, his paper, we are sure, will be looked for by our readers with much interest.

MONTREAL MEDICAL LICENCE CASE.—The defendants in this unusually protracted case, contrary to the expectation of many of their friends in Montreal and elsewhere, have been committed for trial in a higher court, by the magistrate who made the preliminary investigation, and were obliged to give bail. It will be much to be regretted, if this case should be again dragged into the courts. The College of Physicians and Surgeons should have plenary power to deal with all such cases as affect its interests, without having recourse to a public tribunal. No one doubts that Drs. Worthington and Fenwick were guilty of a very "grave irregularity," but they have been punished already fully equal to the sum of their offence. Let there be a complete acknowledgment of their error, and an ample apology in writing to the President of the College and any others who have been affected, and let the matter be dropped for ever.

MEETING OF THE ONTARIO MEDICAL COUNCIL.—It would be very desirable if the meeting of the Ontario Medical Council could be called early in June this year. There are several members of the council and others who take an interest in the proceedings, who intend to go to the Paris exhibition during the summer months, when practice is usually quiet. An early meeting would therefore be a great accommodation to such persons, and in no way injurious to the interests of the council.

ALCOHOL IN THE TREATMENT OF HYDROCELE.—A favourite plan for the treatment of hydrocele by many eminent surgeons of the day, is to inject —by means of a hypodermic syringe—from a few drops to one fluid drachm of alcohol (Spts. Vin. Rect.) into the sac. The heat of the scrotum is increased, temporarily, but the process of coagulation of the albumen of the fluid at once takes place, and a complete cure speedily follows.

TELEPHONIC AUSCULTATION.—The latest novelty in medical practice is telephonic auscultation. In a British exchange the writer says: "he listened to a young lady's chest with a telephone; she stood in the hall and he was thirty feet away in the dining-room. He heard the healthy sounds of a very healthy chest quite distinctly." This plan would be suitable for very modest young ladies and will no doubt become popular with a certain class.

BULLOCK AND CRENSHAW'S SUGAR-COATED PILLS.—We desire to call the attention of the medical profession in Canada to the sugar-coated pills and granules manufactured by Messrs. Bullock & Crenshaw, of Philadelphia. After a most critical examination by medical men of skill and ability they were awarded a Centennial medal for superiority of finish and purity of ingredients. Messrs. B. & C. have long since established their reputation for the purity and excellence of their pharmaceutical preparations, and we have no hesitation therefore in giving their preparations our unqualified endorsation. The price of their pills has been reduced to suit the times, but at the same time they guarantee that their reputation for excellence shall be scrupulously maintained.

NEW METHOD OF REDUCING DISLOCATION OF THE HIP.—Dr. Allen of Vermont (*Journal of Materia Medica*) describes a new and simple method of reducing dislocation of the hip-joint. After the administration of chloroform the leg is flexed upon the thigh, and the thigh at right angles to the body. The surgeon then steps upon the bed, places the leg of the patient between his legs with the dorsum of the foot against the nates; he then grasps the leg at the bend of the knee, lifts the hips from the bed, and holds the patient in that position for a few seconds when the head of the dislocated bone slips into its socket. The principle, viz., vertical extension, is not new, but the mode of putting into practice is certainly original.

THE DISCOVERER OF FŒTAL AUSCULTATION.—The discoverer of fœtal auscultation, the Count de Kergaradec, died lately in Paris at an advanced age. He was the first to apply auscultation for the detection of the fœtal heart sound. His son in announcing his death to the French Academy said: "among his children who stood around his death-bed was that beloved daughter, the beating of whose heart her father heard while she was still in her mother's womb."

POST CARD "SPECIMEN COPY" MEN.—In accordance with a suggestion of the American Medical press we publish the names of the following members of this *genus*. Frank J. Godfrey, M.D., Bennington Vt.; C. Seymour, M.D., Northampton Mass. Pass them around.

SALICYLIC ACID IN DIPHTHERIA.—Dr. Letzerich has made a number of experiments in regard to the action of salicylic acid upon the organisms found in diphtheritic deposits, the result showing that this acid possesses the power of killing the germs in question. He has also used salicylic acid in seven cases of the disease, five of which were mild, and two severe. In the former cases a gargle according to the following formula was employed:

℞—Acidi Salicylici,	grs. xv.
Solve in Spts. Vin. Rect.	m. xxx.
Aquæ Déstillat., ad	℥ viij.—M.

Under the frequent use of this gargle the diphtheritic membrane disappeared from the throat entirely in from two to four days. In the severer cases the treatment was both internal and external. Four and a half grains of the powder with an equal quantity of sugar were administered every two hours, and the throat was swabbed with a solution of the acid in alcohol and water (five parts acid, one part alcohol, and fifty parts water). In addition the throat was occasionally touched with a damp camel's hair pencil dipped in the powdered acid. The results were so favourable that Dr. L. urges its further trial. The addition of carbolic acid has been tried with success in this country, the following formula being employed:

℞—Acidi Salicylici,	grs. xx.
Acidi Carbolici,	grs. xxx.
Sodæ Bibor.,	℥ j.
Glycerinæ,	℥ j.—M.

SIG.—Apply to the fauces by means of a camel's hair brush every three hours.

HYPODERMIC INJECTION OF ARSENIC IN ASTHMA.—Dr. Martelli in the *Gaz. Med. Ital.* reports a case of nervous asthma of long standing which was perfectly cured by subcutaneous administration of arsenic. He used Fowler's solution diluted with two parts of water, and injected of this from 2-3 grammes; no unpleasant results either local or constitutional followed its use.

SUBSCRIBERS IN THE MARITIME PROVINCES.—Our many subscribers in the Maritime Provinces would confer a favor by remitting in *Dominion of Canada Bills*. There is a discount here on all local bank bills, other than those of Ontario and Quebec.

RESIGNATION.—Drs. DeWolf and Fraser of the Hospital for Insane, Halifax, N. S., have resigned the offices of medical superintendent and assistant medical superintendent respectively. Troubles of a religio-political nature are the reasons assigned.

G. T. McKeough, M B. Trinity Medical School has passed the primary examination of the Royal College of Surgeons England. Also D. H. Dowsley, M.D., Kingston, Ontario.

The death of Claude Bernard, the discoverer among other things of the glycogenic function of the liver is announced. He was 65 years of age.

The death of Dr. E. R. Peaslee of New York was announced on the 21st of January.

APPOINTMENTS.—Dr. A. P. Reid has been appointed medical superintendent, and Dr. Geo. L. Sinclair assistant medical superintendent of the Hospital for the Insane, Halifax, N. S. They are both members of the Faculty of the Halifax Medical College.

R. J. Mattice, M.D. of Moulinette, to be an Associate Coroner for the united Cos. of Stormont, Dundas and Glengarry.

N. Brewster, M.D., of Ridgeway, to be an Associate Coroner, for the Co. of Welland.

H. N. Elliott, Esq., of Manitowaning, to be an Associate Coroner, for the District of Algoma.

J. A Sinclair, M.D., of Hastings, to be an associate coroner for the Counties of Northumberland, Durham and Peterborough.

J. R. Anderson, M.D., of Ailsa Craig, to be an associate coroner for the County of Middlesex.

P. L. Graham, M.D., of Bothwell, to be an Associate Coroner for the County of Kent.

Reports of Societies.

WESTERN AND ST. CLAIR MEDICAL ASSOCIATION.

The annual meeting of this Association was held at Chatham in January last. The members present were as follows:—Drs. Bucke, Fraser, Beemer, Mitchell, Samson, Van Velsor, Tye, Smith, Graham, Rutherford, Lumley, Bray, Holmes, Murphy, Richardson, Bright, Fleming, Van Allan, Sivewright, Abbott, Winter, Professor McGraw, of Detroit, and Dr. Tates, of Washington.

The minutes of the last meeting, held at Sarnia, were read and adopted. Several communications were read—one from the Secretary of Brant County Medical Association, relative to contract practice; also letters of regret from Drs. Brodie, J. M. Fraser and Edwards.

It was moved and seconded that Drs. Bucke, Fraser and McLean constitute the Printing Committee for the year ensuing, and that they be empowered to exercise their option with respect to the publication of papers in the forthcoming transactions; *carried.*

On motion it was decided to hold the meetings semi-annually in future, at Detroit in June and London in January.

The following officers were elected for the ensuing year;—Dr. Tye, President; Dr. McAlpine, Vice-President for Middlesex; Dr. Lougheed, Vice-President for Lambton; Dr. Lambert, Vice-President for Essex; Dr. Samson, Vice-President for Kent; Dr. Fraser, Treasurer; Dr. Beemer, Secretary; Drs. Bucke and Richardson, Auditors.

Dr. Fleming read a carefully prepared paper on the "Causation and Pathology of Typhoid Fever."

A long and spirited discussion followed upon this subject, which was very ably dealt with by a number of gentlemen present, among others by Prof. McGraw, of Detroit. The conclusions arrived at were that typhoid fever may be, though rarely is, communicated from the patient to a healthy person, or may result from imbibition of impure water or by inhalation of poisonous atmosphere. A vote of thanks was tendered Dr. Fleming for the paper.

Dr. Bucke, Superintendent of the London Asylum for Insane then read an elaborate and wholly original essay on "The Moral Nature and the Great Sympathetic" for which he received the thanks of the association. Prof. McGraw was elected an honorary member of the association. Papers were promised for the next meeting by Drs. McGraw, Holmes, Lumley, and Rutherford. The meeting then adjourned, after which the members enjoyed the hospitality of the Chatham Medical Association at the Garner house.

FAMINE, of a terrible character, prevails in several of the northern provinces of China; immense districts are almost depopulated. The same state of affairs obtains in several large districts of British India.

Books and Pamphlets.

CYCLOPÆDIA OF THE PRACTICE OF MEDICINE.—Edited by Dr. H. von Ziemssen. Vol. XIV. Diseases of the Nervous System and Disturbances of Speech. New York: Wm. Wood & Co. Toronto: Willing & Williamson.

We have received from the publisher the 14th volume of this extensive work. Professor Eulenburgh of the University of Greifswald, deals exhaustively with the subject of Vaso-Motor and Trophic neuroses including Hemicrania, Angina Pectoris, Unilateral Progressive Atrophy of the Face; Basedow's disease—characterized by palpitation with accelerated pulse, swelling of the Thyroid gland and exophthalmus; Progressive Muscular Atrophy; Pseudo-Hypertrophy of the Muscles—evidenced by an abnormal increase of size in certain muscles, accompanied by a diminution or loss of their functional energy, the direct cause of which is chronic disturbance of the nutrition of such muscles; and True Muscular Hypertrophy. The subjects Epilepsy and Eclampsia are treated of by Professor Nothnagel. He considers that the designation eclampsia should be made use of for those cases of epileptiform spasms which independently of positive organic disease, present themselves as an independent and acute malady, and in which so far as our present knowledge allows us to judge, the same processes arise generally in the way of reflex excitement, and the same mechanism in the establishment of the paroxysms, comes into play, as in the epileptic seizure itself. Hughlings Jackson considers that the great tendency of the nervous system in childhood to react upon peripheral sensory excitement, is due to the fact that the nervous system of children is in the first place still undeveloped, and in the second is undergoing development. The treatise on Tetanus is written by Professor Bauer. He considers it inadmissible to consider tetanus as an inflammation, of the spinal cord, as was formerly done. The anatomical changes of the cord do not support such a view, as they are also too inconstant. Neither can the existence of a degenerative process, with proliferation of connective tissue in the sense indicated by Rokitansky be proved. This anatomical explanation appeared from the beginning to be insufficient to account for the symptoms, since the anatomical changes correspond to no single form of disease, but the same changes are found in connection with very different diseased conditions. In certain stages, tetanus may be confounded with cerebro-spinal meningitis, even with tubercular basilar meningitis, and both give rise to stiffness of the neck. But in the two latter there is rarely trismus, and the accompanying symptoms of both would prevent any prolonged mistake.

Catalepsy is treated of by Professor Eulenberg. The etiology of uncomplicated, idiopathic catalepsy is almost entirely unknown. Eulenberg assumes that catalepsy belongs to the large class of diseased conditions designated by Greisinger constitutional neuropathies, whereby its near connection with other neuroses of this group, hysteria, insanity, epilepsy, and chorea is indicated and also that a predisposition dependent upon congenital preformation of certain portions of the central nervous system generally precedes the appearance of the cataleptic attack. Professor Eulenberg treats also in this volume of tremor, paralysis agitans, and of an affection somewhat resembling paralysis agitans that he designates *Athetosis*. This affection was first described by Hammond in 1871 as a combination of symptoms somewhat resembling paralysis agitans, the chief characteristic of which is a ceaseless motion of the fingers and toes, which does not permit them to remain in any position in which they are placed. Hammond supposes the seat of the affection is in the intercranial ganglia or upper portion of the spinal cord. Chorea, is taken by Professor Von Ziemssen. The dance of St. Vitus made its first appearance as a wide spread mental disorder in the second half of the fourteenth century in the neighbourhood of the Rhine. Under the magistrates' orders those affected were led in troops to the chapel of St. Vitus, that they might be quieted by processions, masses, &c., &c. Subsequently the name chorea St. Viti was extended to the sporadic cases of spasmodic movements of the body. To Sydenham is due the conception of chorea as now entertained, and the separation of it from the foreign element, the term then being applied, of the chorea minor sive Anglorum in contradistinction to the chorea major sive Germanorum. Von Zeimssen considers that the group of symptoms called chorea major is not a disease *sui generis* but is only the product of genuine psychosis and cerebral maladies on the one hand, and of hysteria and wilful simulation on the

other. The other subjects treated of in this volume are Hysteria by Prof. Jolly, and Disturbances of Speech by Prof. Kussmaul. The latter is a most recondite and learned disquisition.

THE SCIENCE AND ART OF SURGERY. By John Eric Erichsen, F.R.S; F.R.C.S., Eng., Prof. of Surgery & Clin. Surgery, University College. Seventh edition improved, enlarged and illustrated with 862 wood engravings. Two volumes. Philadelphia: H. C. Lea. Toronto: Willing & Williamson.

This work is so long and favourably known to the profession, that nothing more is necessary than the simple announcement that a new volume of this standard work on surgery has been issued from the press. It cannot be spoken of too highly, both as a text-book for medical students, and a work of reference for the practical surgeon. We have often had occasion to consult this classical work and never have been disappointed either in the matter of advice or suggestion which it contains. It should be in the hands of every medical practitioner.

A TREATISE ON PRACTICAL AND ANALYTICAL CHEMISTRY, by F. Clowes, D.S.C.. London. Illustrated. Second London edition. Philadelphia: H. C. Lea. Toronto: Hart & Rawlingson.

This work is intended to furnish a course of instruction on practical chemistry in public and other schools. Its object is to give all necessary directions, so fully and simply, as to render almost unnecessary the services of a teacher. The description of the different apparatus and how to use them, is given in the fullest manner, and yet the size of the work is kept within very moderate limits.

SCRIBNER'S MONTHLY, FOR 1878:

We invite the attention of the *Canadian* public to *Scribner's Monthly*, which has a large circulation in England, and now, at the beginning of its eighth year, deservedly ranks among the best illustrated periodicals of the world. During the past year several papers have appeared in *Scribner's Monthly* devoted wholly or in part to Canada. During the year 1878, there will appear beautifully illustrated articles on Caribou-Hunting, Moose-Hunting, Seal-Fishing, The Thousand Islands, etc., etc., besides a charming paper by John Burroughs, entitled, "Following the Halcyon to Canada." CANADA LANCET and Scribner's, $5.00 in advance.

THE POPULAR SCIENCE MONTHLY AND ITS SUPPLEMENT FOR FEBRUARY, 1878.

These favorite journals have come to hand, and as usual are full of valuable information. Among the numerous articles this month we would call especial attention to "The Evolution Theory and its relation to the Philosophy of Nature," by Prof. Haeckel, and "The Liberty of Science in the Modern State," by Prof. Rudolf Virchow. Dr. Pettenkofer has also an excellent paper on "The Hygienic Influence of Plants."

SYCOSIS -prize essay for 1877 of the Bellevue Hospital Medical College Alumni Association, by A. R. Robinson, M. B., L. R. C. P. AND S., Edin., New York. New York: D. Appleton & Co.

CLINICAL REPORT ON 3873 EYE PATIENTS, treated at the New York Ophthalmic and Aural Institute, during the year 1876. By Dr. Ad. Alt, M. C. P. & S. O., Toronto; (late resident assistant Surgeon to the above Institute.)

ON THE DRESSING OF STUMPS.—Old method—Lister's antiseptic plan—the Bordeaux treatment of stumps, Burow's plan modified by the author—comparative statistics, by Louis Bauer, M.D., M. R. C. S., Eng., St. Louis.

WHAT ANÆSTHETIC SHALL WE USE?—by Prof. Julian J. Chisholm, M. D., Baltimore.

EXCISION OF THE LOWER END OF THR RECTUM, IN CASES OF CANCER—by John B. Roberts, M. D., Philadelphia: Sherman & Co.

RETARDED DILATATION OF THE OS UTERI IN LABOR—by Albert H. Smith. M. D. Philadelphia.

A DOCTOR'S COUNTER-IRRITANT.—The prescribing druggist.—*Punch.*

Births, Marriages, Deaths.

On the 9th Feb. at Orono, the wife of Dr. RUTHERFORD, of a daughter.

In Toronto, on the 20th ult. Dr. E. M. HODDER, aged 67 years.

In Montreal on the 29th of January, Dr. R. S. MACDONNELL, from injuries received while attending the funeral of the late Dr. Peltier.

* *The charge for notice of Births, Marriages and Deaths, is fifty cents, which should be forwarded in postage stamps, with the communication.*