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CANADA

MEDICAL & SURGICAL JOURNAL.

Analysis of Milk. By GILBERT PROUT GIRDWOOD, M.D., M.R.C.S., England. Professor of Practical Chemistry, McGill University.

For some time past we have had a by-law of the corporation, professedly intended to prevent the sale of adulterated milk, and for punishing those who infringe the law. This has been altogether a dead letter, and productive of no result; the new inland revenue act against the adulteration of food and drink which was passed last year has now come into force. The difficulty of efficiently carrying out any such law, is the necessity for exactness in the determination of the standard of excellence as a point of comparison. In a city like Montreal, where a large supply of milk is required, there must be both large and small suppliers; one may have a cow giving very rich milk, another very poor, and there may be difficulty in determining the value of the milk given by each, and at different seasons, and hence determining whether the milk is adulterated or not.

For the purpose of trying to give a standard I have been engaged since last September in making a series of analyses of milk. The milk I obtained from my own cow which is stall fed, upon hay, 2 bundles a day; 1 small bran mash night and morning, and such scraps from the house as are fit for her; and, from milk supplied to me by Mr. de Bellefeuille MacDonald, of the Grey's Creek farm, who keeps together 150 cows so that what I received from him may be taken as an average of milk from that number of cows. Mr. MacDonald, whose cows I have seen here in

Montreal, are fed almost exactly as my own ; but besides the 150 in town, he has 150 more cows at his farm near Cornwall, so that practically the average is from 300 cows. That from my own cow is I know a richer milk than is usually met with.

These examinations have been made, from time to time daily, during a period of seven months, and the average as given, is the result of the mean of these observations, they are recorded in a tabular form and compared with the analysis of milk as given by different authors, I have not taken milk from animals fed on grass, as my object has been rather to arrive at a standard of what milk should be as supplied during the winter months than of what is obtained during the summer. I am not prepared to say what will be the average for the summer months,when cows are fed upon grass at pasture but, even during the summer, numbers of cows are fed in stall upon hay. I purpose however, extending my observations during the coming summer and will give you the results so that if any alteration becomes necessary for a summer standard it may be made.

Considering that milk contains all the constituents necessary for the growth and development of the animal and that too in a very easily assimilated form, that it forms the principal food of children, and of sick persons, the only food of young infants, and that the due proportion of each ingredient is undoubtedly arranged by nature so as to be properly adjusted the one to the other, so as not to overload one portion of the body at the expense of the remainder it becomes of paramount importance, to the well being of children and the sick, that the proper equilibrium of food should be kept up.

I have divided the food contained in milk into four heads for the purpose of simplifying analysis and conparison, namely, water, butter, or fat, the heat producing or respiratory element of milk. Cazeine, Sugar, &c., which principally supply nutritious elements or elements used in digestion and last salts or earthy constituents used in the formation of the skeleton, and in the process of digestion.

The process adopted in these analyses has been the actual weighing of each of these four classes of constituents.

In the first place the specific gravity was taken. One thousand grains accurately weighed out, and carefully evaporated to dryness in a platium dish and weighed repeatedly till weight remained constant, the weight of dish subtracted yields the total solid constituents in 1000 grains, the difference between this weight and 1000 grains is the water lost by evaporation.

Residue exhausted with Ether is deprived of all the butter, the residue again dried and weighed gives the Cazeine Sugar, &c., and Ash.

Cazeine Sugar, &c., burnt off the residue is the Ash.

The Etherial solution evaporated till all Ether is gone, and residue weighed gives the amount of butter.

Of course this process may be still further increased by ascertaining the properties of the component parts of the Ash such as the quantities of Phosphoric acid, Lime, Chlorine, &c., the separation of Cazeine, Sugar, &c., but for purposes of ascertaining the purity I think the above is sufficient, at any rate at present; when ingenuity in adulteration is carried further, other more elaborate analysis may be necessary.

TABLE OF COMPARISON.

Name of Authority.	Professor Miller.	Dr. Atfield.	Sir Robert Kane.	Dr. Girdwood.	Dr. Girdwood. McDonald supply.
Water	874.00	864.00	859.10	828.90	848.00
Butter	40.00	36.00	39.30	38.58	31.60
Cheese, Cazeine, &c.	79.00	93.00	98.70	123.79	114.00
Ash	7.00	7.00	2.90	8.73	6.40
Total	1000.00	1000.00	1000.00	1000.00	1000.00
Specific Gravity	1030 to 1035	1034.00	1034.80	1034.60	1032.80

In the last column is the result of the average of 150 cows—during a period of 7 months, the variation being so light as not to be worthy of note.

I think from these results that for stall-fed cattle the average of the last column may be taken as a practical standard for the autumn and winter months; at any rate any deviation from this, say in reduction of fat, would indicate the abstraction of cream, and the milk should be sold as skimmed milk, which for many purposes is as good as if the cream were left in, but under the new act such abstraction will be punishable. In like manner any decrease in the quantity of cazeine or salts would indicate the addition of water, the specific gravity alone can give but little information as to the purity or otherwise of the milk. Nor does the quantity of cream alone give an idea as to whether adulteration has been practiced, but the four conditions taken together are likely to be near the proper result.

Since writing the above, I have received The "Chemical News" for February 5th, wherein is a paper on milk, by C. A. Cameron, M.D., Professor of Hygiene in the Royal College of Surgeons, Ireland, who gives the result of his experience in Dublin milk, as per 1000 parts:

Water, - - -	870.00
Fats, - - - -	40.00
Cazeine, &c.	83.80
Mineral, - - - -	06.20
	1000.00

The same number also contains a report of the proceedings of the Society of Public analysts who establish the limits for the constituents of milk as follows:

"Milk shall contain not less than 2.5 per cent of butter fat." These limits are given as the minima of quantities. I should be harder on the milk vendors, and require a higher standard. And if the cow will not give a milk up to the standard, it were better to fatten her for the butcher, and raise one that will give richer milk, this will tend to improve the breed of cows.

Division of the Isthmus to relieve Dyspnœa in certain cases of Bronchocele. By SIR G. DUNCAN GIBB, Bart., M.D., LL.D., Physician to Westminster Hospital.

In the course of an experience of many years several cases of enlargement of the thyroid gland, affecting one or both of the lateral lobes and implicating the isthmus, have come under my observation. When the isthmus is enlarged, there is usually present a feature of great significance that is the precursor of future mischief—namely, the presence of dyspnœa from pressure upon the trachea, to which very soon it becomes strongly adherent. If not relieved by treatment, the lateral lobes—which in their enlargement sometimes spring from the isthmus itself—may extend on either side of the trachea itself and completely encircle it. The consequence of this is that the tube is compressed laterally, and its form becomes oval, with a very narrow passage to breathe through, which sooner or later ends fatally. An instance of that kind in a young Oxford man was under my observation in 1869, in whom the enlargment was attributed to a cold caught whilst sleeping with the window open. The progress of extension around the trachea was rapid; the compression was so great that fatal dyspnœa occurred in January, 1870, and after death a narrow oval fissure was found to be all that the patient could breathe through during life. Tracheotomy was ineffectually attempted by a skilful hospital surgeon, and, as no relief was afforded, the belief was entertained by a physician of eminence, who saw the case *in extremis*, that an aneurism might be present to account for the symptoms. As I had given the opinion to the father that nothing was wrong beyond the bronchocele and its influence on the trachea, an autopsy proved that only such really existed, and the heart and other organs of the body were healthy. In stating this no blame whatever could be attached to the physician who saw the patient in the hour of his extremity. I could cite other examples, where the disease was gradually progressing towards the same result, and no doubt

they are familiar to those in the habit of seeing bronchoceles. However, in some of our hospital museums the preparations themselves show how hopeless are all means of cure when once the trachea is grasped by the tumour. I had long thought over the matter, and came to the conclusion that the only remedy in such cases was to remove or divide that portion of the bronchocele which was in contact with the trachea itself—namely, the isthmus,—*before* it had commenced either to encircle the tube or had become too firmly adherent to it. This last summer the opportunity was afforded me to have this practice tried, and I am happy to say with the best results. The symptom that was the most urgent was dyspnœa, owing to the pressure of the enlarged isthmus, which had formed a distinct tumour over the trachea nearly the size of a walnut. This was adherent to the deep fascia over the trachea, and moved up and down with the tube and thyroid cartilage in the act of swallowing. Great distress and discomfort, and feelings of the most miserable and desponding nature were almost constantly present, invariably aggravated by attacks of recurrent dyspnœa. I was satisfied the lateral lobes were dipping backwards, and in a few weeks or months would have irretrievably compressed the trachea, as in the case of the young Oxford man. The details are briefly these:—

Margaret H——, aged twenty-nine, from Shropshire, a cook some years in London, was sent to me on April 27th, 1874, complaining of great discomfort and tension about the neck, and dyspnœa, from the presence of an enlarged thyroid gland, that had been enlarging on both sides of the neck for two years, but especially so on the right side. She described the feeling about the neck as a smarting one, and the swelling she said "draws the neck"—i. e., made the neck feel very tense, as if tied round with something. This had caused nausea and vomiting for some ten days. She was most desponding, quite pallid, and had changed from a stout to a thin girl. The goitre was distinctly prominent on the right side, and not so visible on the left, but the

enlargement was unmistakable on both sides, and the intervening isthmus was continuous from one lobe to the other, and decidedly enlarged, taking the form of a distinct rounded, somewhat projecting tumour over the trachea. In swallowing she felt as if something were pressing on her windpipe, and the isthmus moved up and down synchronously with the thyroid cartilage, showing that it was not only in close contact with the trachea, but possibly attached to it. She was treated by a combination of the iodide and bromide of ammonium with other adjuvants, internally, and an ointment externally of the bromide of lead. She greatly improved, and the swelling on the right side of the neck became freely movable; the trachea could be more distinctly traced from below upwards, the isthmus was decidedly less prominent, and all the other symptoms referable to the breathing got better. She took, for a short time afterwards, the bromide of ammonium and citrate of iron. Her mistress finding she was in delicate health, declined to keep her, and all the old symptoms returned with great tension and hardness of the isthmus. I told her the nature of her complaint, and stated she might now and then improve, but the cure of the attacks of dyspnœa was impossible without the removal of that portion of the tumour over the windpipe. To this she consented, and was accordingly admitted into Westminster Hospital on July 2nd, and placed under the care of my colleague, Mr. Holthouse. I had previously explained my views to him, which he perfectly comprehended, as we had discussed the matter several times.

On the 11th, after chloroform had been given, an incision was made through the integuments in the median line over the trachea, about two inches long, the superficial fascia and then the deep were divided on a director, and, finally, the surface of the tumour was exposed, which in size approached that of a flattened walnut. The isthmus on either side of this was more slender and smaller in bulk than the tumour which permitted of a strong ligature being placed on either side of it with the aid of an aneurism needle.

The isthmus was then freed to the inner side of each ligature, divided, and wholly removed, the trachea being observed to be quite free. There was not much bleeding, although several small veins ramified on the surface of the tumour. Subsequent examination showed the removed isthmus to be partly cystic in its character. for on section, one cyst especially was divided, giving exit to some fluid; the remaining portion looked like degenerated glandular tissue.

By the 14th the wound was nearly healed; on the 17th the ligature came away. A few days later the wound was perfectly healed, and she left the hospital, feeling no inconvenience about the trachea in breathing or swallowing. The relief afforded by the removal of the isthmus may be described as truly wonderful.

On the 16th November she called upon me in perfect health; she had got stouter, had married, and there was not a trace of her old symptoms. The trachea could be felt uninterruptedly free from the root of the neck upwards, and the enlarged thyroid gland on either side seemed to have receded from the median line, and was less prominent.

The results in this case fully justified the hopeful view entertained of the operation, and it was not long after that another opportunity was afforded of again trying its effects, under circumstances somewhat differing and even more unfavourable.

Alice D——, aged seventeen, a healthy-looking girl, was sent to me by my friend Mr. M. W. Chambers, of Sutherland-street, Warwick-square, with general swelling of the entire front part of the neck, especially above the clavicles, from enlargement of the thyroid gland, which, it appeared, had existed since her birth. Whilst there was an unusual fulness of the neck, there was not the great prominence observed in most cases of bronchocele; yet the swelling was traversed by numerous enlarged and tortuous veins, through its extension behind the clavicles and pressure upon the subclavian and other deep-seated veins. This gave rise to

some facial turgescence and a ruddy complexion. The isthmus was felt continuously from the one side to the other, and was closely applied to the trachea, giving rise to occasional dyspnœa, dysphagia, laryngeal cough, and general discomfort, which had induced the girl's mother to seek advice for her. She was admitted into Westminster Hospital under my care, and put upon preparations of iodine internally, and the use of the bromide-of-lead ointment, as in the first case. She certainly improved, and the swelling became softer. But in the early part of December she had symptoms that simulated an attack of laryngitis with such extreme dyspnœa for two or three nights that the house-surgeon was called up to open the trachea. Fortunately relief was obtained without resorting to that measure, and she got better; but as it was hopeless to expect a cure, or even permanent relief, whilst this enlarged isthmus remained, I concluded that surgical interference might do more than medicine, and requested Mr. Holthouse to see her. As everything was favourable he consented to remove the isthmus. On the 15th December she was narcotised with chloroform, and as she had eaten some food shortly before, this was vomited, and during the act the prominent isthmus was seen to move up and down synchronously with the thyroid cartilage, pointing to close and firm attachment to the trachea. An incision was made one inch and three-quarters long below the thyroid cartilage, which divided a small vein that had to be tied; another, rather large, coursed upwards from right to left, which was avoided. The superficial and deep fascia being divided upon a director exposed the isthmus, which suddenly cropped up like a hernial tumour. This was found to be fully an inch wide, proportionately thick and firmly attached to the trachea. Mr. Holthouse cautiously detached it by means of curved scissors, and then passed an aneurism needle under it, armed with a double ligature permitting it to be tied in two places, as wide apart as possible. As these were likely to become detached in the event of division of

the isthmus, it was considered prudent, with my concurrence, to leave them in to slough out, and thus avoid the risk of hæmorrhage. The wound was closed and the patient conveyed to bed. Without giving the progress from day to day, it may be stated that everything went on well, the ligatures came away in reasonable time; there was some free suppuration of the portion of the isthmus between the ligatures, and finally the wound healed. The general turgescence of the face seemed to have wholly gone, and the decided prominence of the neck became less, the circumference having become reduced from $14\frac{1}{2}$ to $13\frac{1}{2}$ inches. There was a disappearance of several of the cutaneous veins, except at the lower part nearer the clavicles. The relief to the general tension across the neck was the chief point gained, and no discomfort was experienced such as had been present before the operation. This can be well understood, on reflecting that the isthmus was then exerting a pressure upon the trachea and adjacent parts like a strong band tied around the neck.

That the results will be as favourable here as in the first case there is good reason to believe, but I should prefer as a rule a good large portion of the isthmus to be removed to simple division, as there is less likelihood of any subsequent adhesion to the trachea; and as to the hæmorrhage from a divided portion of the gland, I think the danger to be feared from it is much overrated.

Although the enlarged thyroid gland has been wholly removed several times with success, and quite recently by my friend Dr. Fenwick of Montreal, by Dr. Wolfred Nelson of the same place, and by Dr. Beaumont* of Toronto, yet I believe that this is the first occasion in which the isthmus has been either wholly removed or divided, at my suggestion; and the extreme importance of the subject is my excuse for bringing it before the notice of the profession. I have no doubt that this new remedial measure will receive a fair trial, and I feel confident that it will become one of extreme value and importance in a very dangerous class of cases.

Bryanston-street.

* Sir Duncan Gibb is in error; it was Dr. Hodder of Toronto, not Dr. Beaumont, who removed a part of the Thyroid body.—Ed.

Hospital Reports.

MEDICAL AND SURGICAL CASES OCCURRING IN THE PRACTICE OF THE MONTREAL GENERAL HOSPITAL.

Case of Paralysis Agitans under the care of W. Wright, M.D., Professor of Materia Medica, McGill University. Reported by Mr. HERBERT L. REDDY.

A. McD., born in Glengarry, Canada West, aged 58, a married man with eight children, was admitted into the Montreal General Hospital under the care of Dr. Wright on the 4th December, 1873. He is a large heavily built man, height 6ft 3 in., weight about 220 pounds.

Family history.—His father enjoyed good health up to his 70th year when he was struck with hemiplegia on his right side. After 3 years he partially recovered but died soon afterwards from old age. Mother was healthy. Has two brothers and three sisters, all are now living and healthy as far as he knows. Has been living near Cornwall, occupation whilst living there has been that of a farmer, formerly in the winter months he used to cut timber and drive it in the spring. He was thus employed during these months for 9 years, but he has not been so engaged for the last 19 years. In the spring whilst driving the timber he was continually subject to wet. About 8 years ago he drank pretty hard, but has been moderately temperate of late. He has enjoyed good health up to about 5 years ago, being only occasionally troubled with rheumatism in his hip and shoulder joints. About 5 years ago his right arm began to get weak and painful and constantly trembled. These symptoms gradually increased until he lost almost all power in the arm, from this it went to his left arm, and from that it has since spread all over the body; the arms being the most affected. When he first noticed it he was working on a railroad in Nova Scotia, and thinks that these symptoms were induced by sleeping in a damp cold bed.

Present symptoms.—General trembling and weakness accompanied with nervous excitability and loss of memory. Any noise or even talking to him increases trembling. He complains of soreness and pain in the back. The pain complained of is situated over the crest of the shin, these pains occur at short intervals and are most severe when in the recumbent position. He has no pain along the spine, he sleeps moderately well, being only occasionally awakened by the pain. He is free from trembling when asleep. His bowels are generally rather costive. He walks without keeping his eyes on the ground as he would were it locomotor ataxy. The only thing noticeable in his walking is a hesitancy and sinking at each step due to weakness of the knee joint, he can walk with his eyes shut but is unable to turn very quickly. His eyesight has not been very good since he first noticed the disease. Stimulants such as brandy seem to have no effect in stopping the trembling motion as it generally does in this disease. Of late these symptoms have become so troublesome that he was persuaded to come here in hopes that something might be done. He has been under the treatment of several doctors in the country from some of whom he believed that he derived slight benefit.

Dec. 4th.—It was determined that the alkaloid hyosciamia would be likely to prove beneficial. A couple of drachms were procured from Hamburg. When it arrived it was a liquid very like sherry in appearance, it had a peculiar smell and a very bitter taste. The following prescription was then ordered.

Hyosciamia gtt i
Aq ad ℥vi
℥i tid.

Dec. 6th.—The electro-magnetic machine was used with a view of ascertaining the effect on the paralysis. The following are the results. When the poles were applied to the arms the trembling was very much increased in both

arms and head; but when applied to the legs it did not seem to affect them.

Dec. 8th.—Amount of Hyosciamia in his mixture was increased.

Hyosciamia gtt ii.
Aq ad ℥vi.
℥i. tid.

Dec. 11th.—The dose of Hyosciamia was increased from the one twenty-fourth which he was getting to the one twentieth of a drop. The trembling is evidently much benefitted already although only 7 days under treatment.

Dec. 12th.—Dose was increased to 1-10 of a drop for each dose. He has noticed that he sleeps more heavily than he did and does not dream being greatly troubled with dreams before he was admitted. His pulse which was not in any way excited when he entered was found to be 56 to-day.

Dec. 17th.—Dose was increased to 1-5 of a drop. He appears to be steadier in his movements than when admitted. This dose being much larger than could possibly have been given with the pure alkaloid it was determined that it must be a very inferior article as it was tried on a cat with the following results. One drop placed on the tongue of a cat produced no effect whatever, after a few days the cat was again caught. This time 12 drops were given without any effect. The tincture of the British Pharmacopeia was ordered.

Dec. 24th.—Tinct Hyosciami ℥i. ss.
Aq ad ℥vi.

Dec. 29th.—Was able to pull on his trowsers and waistcoat without help which he could not do before. His pulse ranged from 52 to 60.

He left the Hospital to-day. He thinks he is very little better than when admitted.

In the above case the Hyosciamia was obtained at great expense from Hamburg, when obtained it was not unlike sherry wine. The dose was increased from 1-24 of a drop to 1-5. It must have been very impure for that amount of

the pure alkaloid could never have been given without producing some effect. In this case there was little if any improvement noticed. It was determined to experiment on a cat with it. At first one drop was given and produced no effect then 12 drops and after that amount the cat was as lively as ever.

Dr. Scoresby-Jackson mentions that sheep, goats and cows can eat the leaves of the Hyosciamus plant with impunity and may it not be possible that cats enjoy a similar immunity ?

Three Cases under the Charge of Dr. Fenwick. Reported by Dr. CAMERON Assistant House Surgeon Montreal General Hospital.

The following cases are of interest from their serious nature, and favorable results.

No. 1.—Auguste De Chose, a French immigrant, a painter by trade, was working on a scaffold at Pointe-aux-Trembles on the 5th of October last ; while endeavoring to shift his position, he slipt and fell to the ground a distance of fifty-five feet. He was picked up in an insensible condition but was not conveyed to the hospital for four hours. On arriving there his right elbow was found to be very much swollen and deformed and upon careful examination, it was discovered that both the radius and ulna of the right arm were thrown backwards, neither the coronoid nor olecranon process being broken ; the dislocation was complicated however by fracture of the internal condyle of the humerus which was quite movable and gave distinct crepitation. With great difficulty chloroform was given owing to the nervous excitable condition he was in ; the dislocation was reduced and the arm placed comfortably upon a pillow in a semiflexed position. Iced lead lotion was applied over the whole arm, the joint itself being packed in ice. Opiates were administered as required. The ice was kept up steadily for five days, when the swelling had become

so far reduced that an internal rectangular splint was lightly applied. Cold lead lotions to the joint were still continued. On the 20th he was allowed up with his arm in the splint supported by a sling. Five weeks after the accident passive motion was begun. It was excessively painful at first and elicited all the grimaces and contortions so characteristic of the excitable Frenchman. A stimulating liniment was ordered, and by dint of constant frictions and the daily use of passive motion, the patient was able to leave the hospital on the 2nd of December with a very excellent arm. Very little deformity existed and the motions of the elbow joint were almost perfect. He is at work now in the city and with the exception of a little stiffness, the right arm is as useful as ever.

No. 2.—George Anderson, æt 31, carpenter. was admitted to hospital complaining of great dyspnœa and cough. He had an attack of acute pleurisy, three months before, and had been losing flesh very rapidly, ever since, and had certainly become extremely emaciated. Upon examining his chest, expansion movement on the right side was imperceptible, the whole of the right chest seemed distended, although no bulging existed in the intercostal spaces. Upon measurement, the right side was found to be two inches larger in circumference than the left. Upon percussion an absolutely dull note was elicited in front up to the lower margin of the second rib; behind the dullness was much less, being confined altogether to the infrascapular region extending to within an inch of the inferior angle of the scapula. The respiratory murmur was almost entirely absent in the dull region, and was feeble even in the upper part of the right lung. Exaggerated breathing was present on the left side. Fluid was evidently present in the right side, but the peculiar feature in the case was that the dullness extended to the lower margin of the second rib in front, while behind it reached only to below the inferior angle of the scapula. Dr. Fenwick decided to tap the right side with the aspirator, and on account of the large area of dullness in front, he

introduced the needle below, and a little to the outer side of the right nipple, at the fifth interspace. He succeeded in drawing off 54 oz. of serous fluid, which, towards the last became slightly tinged with blood. When this quantity had been abstracted, the dragging feeling about the lung became so great, and the cough so annoying, that Dr. Fenwick determined to desist. Three weeks afterwards he again used the aspirator and drew off 35 oz., which towards the end became gelatinized. The patient was kept quiet in bed for some days. Quinine, Iron and Cod Liver Oil were prescribed with a good nourishing diet. The patient become stronger, the cough less irritating, and he began to regain flesh. The right side became less prominent, measuring when he left Hospital only one inch more than the left. The breathing though still very feeble, was more distinct than before, and the dullness in front was reduced by about two finger-breadths. The dyspnœa was greatly relieved, and the night sweats completely disappeared.

No. 3.—J. L. aged 37, was admitted to hospital, complaining of obstinate constipation and great swelling of the abdomen accompanied by severe paroxysmal pains. Her face was covered with an eruption of acne.

Upon enquiring into her history it was found that she had aborted at the age of twenty-three and had flooded profusely, since which time her menstrual functions have never been properly performed. A history of syphilis before abortion was pretty clearly made out. The constipation came on gradually and she was in the habit of taking purgatives regularly for several years. About two years ago, she took as usual a dose of senna and salts, when after a very slight motion, she was seized with sudden faintness and desire to vomit; her abdomen swelled up considerably and her sufferings were severe. Since that time her bowels have never been freely moved. Castor oil seems to be the only medicine she can take at all, and its effect is peculiar; for shortly after a dose of oil she passes a small quantity of

thin semipurulent fluid containing a few small round scybalous masses; if now the dose be repeated, nothing more is passed but she immediately swells up and her sufferings become intense.

A careful examination of the rectum was made and no constriction was felt; and the long tube was passed up into the bowel without meeting any obstruction. Various purgatives were given after her admission into hospital, but with no very satisfactory result. Ordinary injections failed; the long tube was successful for a time in producing a stool which was always copious and bloody and contained a number of scybala. Oil and turpentine were used with the long tube but even they failed after a time; warm olive oil was then injected through the long tube but in a few days it too became ineffectual. At last, all injections failed and were stopped and she was put on the following treatment.

Pot. Iod. grs viii.
Ext. Sarsae fld. ℥i.
Aquae ad ℥ss. ter die.

also Ext. Bellad. gr ¼ in the form of pill night and morning.

In a few days she had a natural motion, and swelling and pain were greatly relieved. She persisted in this treatment for some weeks and finally her bowels became quite regular, her pains and discomfort gradually disappeared, and strange to say the acne, which had lasted for eight years and which had been growing worse and worse till she was quite disfigured, began to fade away, and she left the Hospital quite a respectable-looking woman. The connection between acne and a constipated state of the bowels was in this case very clearly exemplified.

There may be some doubt entertained as to the cause of the disappearance of the acne; from the history of Syphilis it may possibly have been due to the effect of the Iodide of Potassium.

Reviews and Notices of Books.

A Guide to the Practical Examination of Urine. For the use of Physicians and Students. By JAMES TYSON, M.D., Hospital Lecturer on Pathological Anatomy in the University of Pennsylvania, &c., &c. With a plate and numerous illustrations. Philadelphia: Lindsay & Blakiston, 1875.

Dr. Tyson has already published two carefully written and useful works, "The Cell Doctrine," and "An Introduction to the Study of Practical Histology," and the present hand-book will supply the want which many practitioners must have felt, of a work, which in a moderate compass might give sufficient information on this important subject. Although we have already valuable works on the Urine, yet some are too large for ordinary clinical use, while most of the smaller hand-books, with the exception of the admirable "Guide to the Examination of the Urine," by Dr. Wickham Legg, are too meagre in detail to be really trustworthy. Useful as Dr. Wickham Legg's work has been found by many a practitioner and student, yet we think that in the present manual, which is almost as convenient in size, will be found much useful information, which Dr. Legg, from the nature of his work, was obliged to omit, and which can only be obtained by consulting the more bulky volumes on the subject. The author gives the modes of approximate estimation used in Germany, drawing the details of them from the treatise of Hoffmann and Ultzmann, and many of the cuts of urinary deposits are from Harley's valuable work. The part devoted to urinary deposits is well and carefully written, and the illustrations are numerous and well executed. Altogether, we may safely say that in the 177 pages, of which this little work consists, will be found more useful information and practical instruction than in many a more pretentious volume, and to the busy practitioner and student it will be invaluable.

Cyclopedia of the Practice of Medicine. Edited by DR. H. VON ZIEMSSEN Professor Clinical Medicine in Munich Bavaria, Vol. 1. Acute Infectious Diseases by Professor Liebermeister, Professor Lebert, Dr. Haenisch, Professor Heübner and Dr. Oertel. Translated by Drs. Fitz, Putnam, Harlingen, Whittaker, Schauffler, Delafield, Bridge, Satterthwaite, Stimson, Emerson and Normand Smith. Albert H. Buck, M.D., New York, Editor of American edition. 8 vo. pp. 708, N. Y., William Wood and Company 27 Great Jones street, 1874.

In the circular announcement which we received from the publisher and which we noticed editorially in the August number of this Journal we were under the impression that Vol. 1 of the Series would embrace the subject of Public Hygiene, and diseases of special trades and professions to be edited by Prof. Giegel and Drs. Hertz and Merkel. A change has however been effected as Vol. 1 which is before us consists of a series of exhaustive papers on "Acute Infectious Diseases." This volume is under the Editorial conduct of Hugo W. von Ziemssen Professor of clinical medicine at the University of Munich, Bavaria. In the Biographical sketch of Prof. Ziemssen which appears on the first pages of this volume we notice that he has contributed largely to medical literature not only as a writer in Virchow's Arch: but that in 1862 he founded the Greifswald Medical reports which he edited for two years when he responded to a call from Erlangen where he maintained the position of Clinical Professor of Medicine up to the spring of last year when he assumed the clinical professorship in Medicine and director of the City General Hospital in connection with the University of Munich.

The first paper is from the pen of Professor Liebermeister the subject being Typhoid Fever. The author gives a general introduction to the infectious diseases, in this he admits the difficulty of tracing infectious diseases to the existence of organized disease germs as it cannot be re-

garded as among well authenticated facts that all infectious diseases depend for their origin on special disease germs. This statement is alone theoretical, but reasoning from analogy we are led to believe in the existence of these germs although scientific investigation has failed to satisfactorily demonstrate them. Nevertheless it must be admitted that a peculiar feature of infectious diseases is the fact that they resemble the effects produced by a poison proper—that is a constancy in the relations between cause and effect. This differs in a marked manner from all other diseases. The poison of Typhoid fever always develops Typhoid fever. No other disease can result, by subjecting an individual to exposure to that poison. On the other hand several persons are exposed to cold or wet feet. One will develop a tonsillitis, another coryza, a third bronchitis, and yet another diarrhœa or dysentery. The author clearly proves his position and shows that no amount of stench from decomposing animal or vegetable compounds will generate disease. That they favor its extension may be true, but unless the germs of the disease in question be there, no disease of what may be called infectious, can originate de novo. The author observes, "We have been convinced that in spite of the pro-
"phecies and premature reports, the investment of Metz
"was never able to produce a single case of typhus fever,
"inside or outside the city, or to transform typhoid fever,
"which prevails there so frequently, to a possibly higher
"potency, *i.e.*, to typhus fever. We have gradually reached
"the conclusion that it is only when the specific germ of
"the disease exists by itself, or has been introduced, that
"those anti-hygienic factors become active and may then
"be capable of occasioning an enormous extension of the
"disease. The germ, however, is not produced by spon-
"taneous generation." In this respect the author is in accord with Dr. Budd of whose opinion he thus expresses himself:

"This opinion that the poison of typhoid fever is propa-
"gated continuously and never originates autochthonously

" was first established by Budd. It has gained ground as " yet but slowly, but there is every prospect that it will in " time become the prevailing opinion."

With regard to treatment the author adopts what he terms " systematic treatment," which consists in giving the patient, if seen before the ninth day, from two to four doses of eight grains each of calomel in the course of a few hours; to this one or two doses are added the next day. From the time of admission the temperature is regularly taken every two hours during the day, and in severe cases during the night as well; whenever the temperature in the axilla reaches 102°, or 103° in the rectum, the cold bath of the temperature of about 68 degrees is given and maintained for ten minutes. If the condition of the patient is such that six or more baths are required during twenty-four hours, the patient is given on the second evening from 22 to 37 grains of quinine. Usually the quinine is administered in doses of 7½ grains, repeated every ten minutes until the decided effect of the drug is observable by the rapid fall of temperature; should this occur, and that the temperature in the rectum shows about 100°, the baths are dispensed with for twelve hours or longer. Forty-eight hours after the first exhibition of quinine a similar dose, or perhaps a smaller one is given; if, however, the temperature still maintains a high rate the second dose of quinine is made larger, reaching 45 grains. If this is sufficient, and that the temperature maintains a lower standard, then the same dose, or a smaller dose of quinine is repeated every second night as long as the continuance of the fever seems to demand it. In very severe cases where 45 grains of quinine seems insufficient, recourse is had to digitalis on the morning after the exhibition of the quinine. During the next 36 hours, from 11 to 22 grains of powdered digitalis is given gradually, the state of the pulse and temperature to be carefully watched, and to be our guide in the continuance or remission of the drug. " If it should happen, " as it very rarely does that no sufficient remission is secured,

" by the use of digitalis and quinine, we may still have " recourse to veratria, which sometimes succeeds in suffi- " ciently controlling the subsequent course of the fever."

There is one observation to which we must allude. The author remarks, " No educated physician now-a-days, " expects a cure from the use of chlorine-water or the " mineral acids." From the remarkable results of Dr. Chambers in his treatment of typhoid fever in the London Fever Hospital, it would appear that his success depended not so much on medication or combatting the disease by antipyretics, so much as by the support of the patient, feeding him with food that he can assimilate, and inasmuch as there appears to be an absence of the natural gastric juice, the patient is supplied with an artificial digesting fluid ; so that although the acids are not given as curative agents they act beneficially, and experience in our own hands is such that we are satisfied with the results. We are unable at present to give any statistical return of our own hospital, but we may observe that so far as we are personally concerned we have never given a single grain of calomel at the outset, nor at any stage of the disease. The necessity of properly feeding the patient, and of unremitted attention in this particular is fully recognised. The author states with reference to wine and spirits that they are admissible at any stage of the disease, even during the height of the fever, but he does not draw attention to the fact of stimulants lowering the temperature to a marked degree in some severe cases. The use of milk as an aliment for the typhoid fever patient is recognised, although not so fully as we should expect ; on this point the author observes, " The fact " is that mucilaginous barley water, thin oatmeal gruel " and the like, combined with strong meat broth, constitute " about the most desirable diet. * * " In addition to " these things, the patient may, if he likes, have milk, but " only when boiled and reduced with water, seltzer water, " tea, coffee, and the like."

We have next from the pen of Professor Lebert, treatises on Relapsing fever, Typhus fever, and Cholera. The next

paper is on the Plague from Professor Liebermeister, to which is appended a short notice of the Black Death. Dr. Haenisch gives a short *resumé* on Yellow fever. Dysentery is treated of by Prof. Heubner, and Diphtheria by Dr. Max Oertel. This latter gentleman has already published a series of articles on this subject. We regard this undertaking as a most important one, and we think that English-speaking practitioners of all countries owe a debt of gratitude to the translators for the very excellent manner in which they have performed their work. To the publishers we must observe that their task has been most thoroughly executed. The paper is of superior description, the type large, clearly impressed, and the whole work well got up. This, the American edition, is under the Editorial management of Dr. Albert H. Buck of New York, who secured the aid of eleven gentlemen in different parts of the United States in the translation of this volume. In commending this work to our readers we may observe in conclusion, that no physician who is desirous of keeping *au courant* with the subjects to be treated of in these volumes can afford to be without them. As we go to press we have received vol. 2, which we will notice in a future number of this Journal.

Periscopic Department.

SURGERY.

On a Case in which a Foreign Body remained for Five Years in contact with the Iris, without exciting Sympathetic Ophthalmia in the other eye.

In the *Annales d'Oculistique*, July and August, Dr. SAVARY (du Mans) describes a case which occurred in his own practice, that of a French lady, aged fifty who had met with a severe fall five years previously, her foot tripping upon a hard road. She was much injured by falling upon some flints. The left eye was seriously injured, but the

exact nature or seat of the hurt was not very clearly made out, although she underwent much active treatment at the time; for four months there was continued pain, at the end of which the eye, although it retained its shape and form, was quite blind. After a period of three years, the pain returned, and Madame R. sought further advice at the hands of a surgeon, who detected the presence of a foreign body within the eye, and who made an ineffectual attempt, though in what way is not clear, to remove it. After another fifteen months, and after much pain, Madame R. applied to Dr. Savary, who found the pupil of the left eye fixed by adhesions, and blocked up by pigmented membrane, through which the opaque lens could be made out. Within the anterior chamber was a grayish-white substance, adherent to the iris, and in contact with the cornea in front. This substance filled the lower part of the chamber, and the cornea over it was hazy, and presented the mark of an old horizontal scar. The globe was soft and painful on pressure, and the ciliary congestion and intolerance of light were excessive. The right eye was in every respect normal.

The diagnosis was that, in all probability, a fragment of stone was imbedded in the anterior chamber, although it might well be that the case was one of cyst of the iris from excessive exudation; in either case some interference was called for, but there would very likely be a difference of opinion as to whether some attempt should be made to find and to remove the foreign body, or whether an abscission or even the removal of the entire eye was advisable. It was determined to search for the foreign body, although the dangers and difficulties of operating upon a globe, which was disorganized by prolonged inflammation, were obvious, and not underrated. The attempt was, however, made, and without chloroform. The cornea was incised at the periphery, and a foreign body, encrusted with exudation, was readily detected, and extracted with the forceps. There was no prolapse of iris, and but a small amount of

bleeding into the inner chamber. The pain subsided in a few hours, and when the dressings were removed the following day, the wound was quite healed, and without undue reaction. At the end of the week the eye was quite quiet, and the patient was convalescent, and able to leave the hospital free from pain, and from all inconvenience, the eye, of course, remaining quite blind. The question of determining the existence of a foreign body is surrounded with difficulty, and the writings of our foremost ophthalmic surgeons give very uncertain advice as to the proper course to pursue when there is only a probability that a foreign body has remained within an injured eye. There are some who would wait the appearance of symptoms of irritation, while there are others who would at once remove an eye which was injured to a degree which would interfere with vision, quite apart from the existence of a foreign body within it. Probably these two extremes of treatment are unwise, but it must be allowed that even at this time very many cases of sympathetic ophthalmia are met with which might well be prevented.—*London Medical Record*, Oct. 28, 1874.

Case of Hernia under the care of MR. HULKE. Acute Strangulation of a Bubonocele—Limited Gangrene of Intestine—Peritonitis—Herniotomy—Death.

The strangulation was here very acute. If medical aid had been procured on the night of the accident, and the rupture been operated on immediately if irreducible by taxis, very probably the patient might have been saved. The postponement of the operation till the third evening was fatal. The propriety of replacing intestine with a small gangrenous spot, questioned by some authorities on hernia, and sanctioned by others, was justified by the agglutinations which took place between the time of the operation and the patient's death, and which would have effectually hindered

the escape of the intestinal contents into the peritoneal cavity.

A groom, aged fifty-eight, two years ruptured, riding late from the races, felt his truss break and his rupture instantly slip down, upon which he was directly in extreme pain. When he reached home no doctor was sent for, as it was night, but sundry domestic measures were tried. He spent the night in great suffering, and in the morning a medical man was fetched, who perseveringly tried the taxis without success. On the third evening the patient was brought into the hospital. An oval tumour, of the size of a small hen's egg, exquisitely tender and very painful, filled the right inguinal canal. His belly was tympanitic, and very tender and painful. He almost incessantly retched. His pulse was very small, feeble, and rapid. Chloroform was immediately given, and herniotomy done without repeating the taxis. The sac and tissues outside it were purple from congestion. On opening the sac about four drachms of fetid greyish flocculent serum escaped, and a loop of almost black small intestine came into view. At one spot the intestine was attached to the bottom of the sac by a recent adhesion, and when this was gently separated a small grey gangrenous patch was apparent. The protruded gut and sac were washed with an aqueous solution of carbolic acid of the strength of 1 per cent., and after dividing the constriction, which was very tight and situated at the internal abdominal ring, the gut was cautiously returned into the belly, the bend of the loop—where was the gangrenous patch—being left at the internal ring, in order that if the gangrene should have implicated the whole thickness of the gut the fæcal contents might, when the slough exfoliated, escape outwardly and not be shed into the peritoneal cavity. With the same object a piece of lint was placed in the external wound to prevent its closing. A large hot linseed poultice was put on the belly, and opium was ordered. Retching continued, and he died at one o'clock p.m. next day.

On examining his body, signs of general peritonitis were found—most intense near the rupture. The strangulated gut which had been replaced was already so fixed by adhesions to the abdominal wall that had the sloughy spot given way—it was lying directly at the ring—no extravasation could have occurred into the belly.

Three cases of Strangulated Epiplocele—Herniotomy—Recovery.

These cases illustrate a fact well known—viz., that strangulation of omentum produces symptoms not unlike, and often as severe as, those of a strangulated enterocele. The first case also furnishes an example of the formation of a spurious hydrocele by the accumulation of serum in the scrotal part of the sac, which had become shut off from the inguinal part by adhesions, probably induced by the pressure of the truss. Such cystiform collections of serum in hernial sacs no longer communicating with the belly are believed to be not very infrequent, and to occur less rarely in femoral than in scrotal ruptures; in a very popular surgical text-book they are stated to be very rare. In this (No. 1) it will not escape notice that the adherent omentum in the scrotal loculus of the sac was free from those marks of obstructed circulation which characterised the strangulation of the part above in the inguinal loculus of the sac. Its extensive vascularised adhesion to the sac made it very independent of blood-supply through the proper omental arteries, and moderated the congestion which would have otherwise followed pressure upon the omental veins. The preservative influence of vascularised adhesions to the sac in maintaining the life of omentum in a tightly strangulated hernia was very conclusively proved in a strangulated femoral rupture, where two adherent pieces of omentum were found living, and but slightly disordered, whilst the remainder of the omentum, non-adherent, was dead and crepitant with gas. When omentum is actually gangrenous, there is an almost unanimous agreement that it is better to cut it away than to leave it in the sac to be thrown off; and no doubt this is

the best practice, since its exfoliation is always attended with much suppuration, the products of decomposition and the pus infect the surrounding tissues, the sac itself often necroses, and puriform œdema often spreads widely in the scrotum or in the thigh along the intermuscular planes of connective tissue. This untoward course more often happens in the old and feeble than in young and vigorous subjects. Again, where the extruded omentum retains its normal structure, all agree that the proper course is to replace it; but in the third case, where the extruded omentum is only freshly congested and œdematously swollen, and this not beyond a reasonable expectation of recovery, and where it has undergone merely those chronic alterations—viz., thickening and induration—to which all long-extruded viscera are liable, no uniformity of practice prevails, some surgeons returning omentum into the belly which others would unhesitatingly cut off. Where there is the slightest doubt of the recovery of congested œdematous omentum, and where chronic induration and thickening exist in more than a very slight degree, experience proves that retrenchment of the parts thus altered yields better results than their replacement. Again, with respect to the method of removing the omentum, differences of practice prevail. Some surgeons, fearing a difficulty in dealing with the possible hæmorrhage, secure the neck of the extruded omentum with a strong ligature, beyond which they cut it off; whilst others simply cut off the omentum through the living or but slightly altered part, and secure separately all vessels which bleed. This was Pott's practice and it is to be preferred. Whichever method is adopted, one point of practice is important—not to cut through the omentum too close to the internal abdominal aperture, because, as soon as the neck of the omentum is no longer held by the constriction, there is a strong tendency for the stump to be retracted, and it may be pulled entirely inside the belly, where, if bleeding should perchance happen, the vessels will be beyond reach, and where, if the omentum has been tied in mass, the gan-

grenous stump beyond the thread may infect the peritoneal cavity, and the ligatures which have been brought out at the surface through the wound will conduct inwards the inflammatory products from this into the belly. These are not imaginary dangers. Hæmorrhage, alarming because inaccessible, and even fatal, has followed the replacement of omentum in the belly, where the divided edges have spread out and some unsecured vessel has leaked; and a sloughy stump, still encircled by its stout ligature, has been found nearly as high as the navel, with the ligatures soaked in ichorous discharges stretching between it and the wound.

Case 1.—*Strangulated Inguino-Scrotal Epiplocele—Spurious Hydrocele—Herniotomy—Sac Opened—Recovery.*

A carpenter, aged thirty-seven, was admitted into Clayton ward on July 16, 1874. For twenty-four hours he had been retching almost incessantly, and for three days he had not passed a stool. He had, he said, been ruptured for many years, and he had worn a truss latterly with the rupture partly down. The rupture had once before been strangulated, four years previously, and reduced by taxis in this hospital.

The right side of his scrotum was distended with a granular, knotty mass, painless and not tender when handled; whilst above this the inguinal canal was filled with a hard, painful, tender swelling, beyond which a fulness could be traced above the internal abdominal ring. The taxis and other measures had been perseveringly tried. It appeared imprudent to repeat them; chloroform was therefore given, and an incision was made over the external abdominal ring and upper part of the scrotum, which laid bare the sac. This was extremely thin and very transparent. It adhered very intimately to a layer of omentum which could be distinctly seen through it. On cautiously cutting through this omentum a large smooth cavity was opened, which contained serum only, and which was shut off by firm adhesions from the inguinal part of the sac. This latter contained omen-

tum only, which was congested and swollen, and contrasted strongly with the unaltered omentum of the lower loculus. The adhesions were separated; the neck of the sac notched; the finger passed through it into the belly, in order to make sure that there was any entanglement of bowel by the sheet of omentum gathered down to the ring; and the extruded piece of omentum was retrenched. The wound united prematurely, and slight suppuration followed. On July 24 he left, convalescent.

Case 2.—Strangulated Inguino-Scrotal Epiplocele—Herniotomy—Sac Opened—Recovery.

A labourer, aged fifty-eight, was admitted into Clayton ward on the evening of Angust 16, 1869, with symptoms of strangulated hernia. The left side of his scrotum, and corresponding inguinal canal, were occupied by an oblong fluctuating swelling, in which knotty lumps as of hardened omentum could be felt. This swelling and his belly, which was tympanitic, were tender and painful. He had constant nausea, and often vomited. The pulse was quick, small, and weak. He had been ruptured, he said, for twelve years, and he had usually, but not always, worn a truss. The morning before, he had foolishly omitted to put it on; the rupture swelled. and symptoms of strangulation immediately setting in, medical aid was obtained. Two surgeons had assiduously plied the taxis during four hours, and not meeting with success, had applied ice, which also failing, they advised that he should be taken to the hospital.

Chloroform was given, and the taxis was gently repeated for a few minutes, when, reduction being impracticable, herniotomy was done without further delay. It was necessary to open the sac; it contained about two ounces of bloody serum, and a large mass of knotty omentum, most of which was tied to the sac by old vascularised adhesions. These were separated, the omentum retrenched, its bleeding vessels were separately secured, and the stump was left at the external ring; the constriction, which seemed to be

constituted by the neck of the sac, having been incised. This part of the sac had been somewhat detached from the fascia transversalis, and pushed inwards by the efforts at reduction by taxis, and a subserous space had been made, into which had the sac (here deprived of its natural support) given away, its contents might have slipped, and so, disappearing from the surface, there would have been a simulated reduction—the extruded viscera all the time lying outside the peritoneal cavity. The wound suppurated; he made a good recovery. The first stool was not passed until the tenth day after the operation.

Case 3.—Strangulated Femoral Epiplocele—Herniotomy—Recovery; Six Months later, Symptoms requiring an Examination of a Knot in the Groin, which proved to be a Cystiform Distension of the Hernial Sac.

The wife of a small tradesman, aged about thirty-five, long ruptured, who had worn a badly fitting truss, which sometimes allowed the rupture to slip down, was seized after breakfast, on August 7, 1871, with violent pain in the lower part of the belly, and tenderness and pain in the rupture, which were soon followed by retching. The rupture was found to be irreducible. Next day, when seen by Mr. Hulke with her medical attendant, the rupture formed a swelling of the size of a walnut, very painful, and so tender that she could not bear it to be touched. She still retched frequently. Her bowels had twice acted slightly since the accident. The taxis had been perseveringly tried; it was gently repeated under chloroform, and, reduction being impracticable, herniotomy was done. The sac was as thin as tissue-paper. It contained only a small piece of omentum, the reduction of which was prevented, after incision of the Gimbernat's ligament, by a little thread crossing its neck within the sac. The wound was dressed with an aqueous solution of sulphurous acid, and opium was given her. She recovered quickly.

On January 22 following she began to be troubled with pinching and griping in the belly, not, however, so severe

as to wholly prevent her from attending to her shop. On the sixth day obstinate retching supervened, and it continued when she was seen two days later by Mr. Hulke. From the beginning of this attack till the seventh day her bowels had acted daily. She had now in the right groin, in the place of the former rupture, a small, very hard, and extremely tender and painful knot, from which tenderness and pain extended upwards into the belly.

The symptoms were taken to mean inflammation of the old sac and omentum, which after the operation had probably become agglutinated to the inner surface of the internal femoral aperture. The groin and belly were fomented; one grain of opium was given every six hours, and she was restricted to small quantities of milk, to which a little lime-water was added. Under this treatment the retching ceased, and the tenderness of the belly lessened; but the rupture remained hard and tender. Three days later the retching returned. The old hernial sac was now explored: the skin adhered intimately to it; it had an almost cartilaginous toughness, and was about a quarter of an inch thick; it contained only about a drachm of serum. Opium was again given. The symptoms subsided, and she recovered.—*Medical Times and Gazette.*

Case of Fracture through both Rami of the Lower Jaw, Treated by External Incision and the wire Suture. By THOMAS ANNANDALE, F.R.S.E., Surgeon to the Edinburgh Infirmary, and Lecturer on Clinical Surgery.

In September last, I was asked to meet Dr. Moodie of Stirling in consultation on the case of G. C., aged 18, who had received a severe injury to his face from a railway waggon. A few days previously to my visit, the patient, when following his employment of a clerk on the railway, was knocked down, and the wheel of a waggon passed over the lower part of his face. Great swelling of the whole face followed the injury; and Dr. Moodie, who was called to see

him, at once recognised a fracture through both rami of the jaw. Careful means were used to keep the fragments in position, but without success, and I was accordingly asked to see the patient.

An examination determined a fracture on the right side of the lower jaw at the junction of the angle and ramus, and one on the left side through the ramus, immediately above the angle. The body of the bone was uninjured. By a little manipulation and elevation of the body of the bone, the fragments could be brought nearly together; but, when the force was removed, the fragments at once separated, and the body of the jaw fell downwards so as to leave the mouth open and fixed in this position, as the patient had no control over the movements of the bone. There was a small wound on the right side of the cheek anterior to the seat of fracture, which was discharging pus freely. The experience of the treatment which had already been adopted having shown that some special means would be required to keep the fragments together, it was decided that the patient should be brought to town and placed under my care in the infirmary. Accordingly, he was admitted into my wards on September 28th; and, on the following day, I placed him under the influence of chloroform, and proceeded to secure the fragments together by means of a wire suture. Owing to the position of the fractures, it was found impossible to drill the jaw from the inside of the mouth, and I therefore made an external incision about two inches in length over the seat of fracture on the right side, exposed the fragments, and having drilled them, brought them together with strong silver wire. A similar incision was made over the left side, and the fragments were drilled and treated as on the right side The fragments on this side could not be brought accurately together, but they were secured as nearly so as possible. After the operation, there was still a slight tendency for the body of the jaw to become depressed, and, in order to counteract this, a piece of soft gutta-percha was introduced between the molars of the upper and lower jaw on the left

side, and held in this situation until it took a mould of the parts and became hard. It was then allowed to remain in this position, and a chin-bandage was applied to keep the jaws steady. The suppuration, which had existed before the operation, continued for several weeks, and from time to time small portions of necrosed bone separated, and were removed by the mouth. On November 13th, the wire on the left side being quite loose, was removed; and, on December 5th, that on the right side also became loose, and was removed. Both wires had been twisted on the inner aspect of the jaw at the time of the operation, and consequently both were removed by the mouth. After the removal of the second wire, the suppuration almost ceased, and the patient was dismissed on December 9th. On January 6th, he returned to show himself, and there was then only a small superficial wound on the right side. The movements of the jaw were excellent, and the patient could masticate with ease. When the jaws were closed together, there was a slight lateral displacement of the lower one; but with this exception, and a slight swelling of one cheek, the parts were natural in appearance.

REMARKS.—Fractures of the lower jaw have been occasionally treated by means of the wire suture (see Hamilton on *Fractures and Dislocations*, fourth edition, p. 118) and I have myself used this method in several cases of comminuted fracture of the body of the bone, drilling the bone through the mouth or through the wound which already existed. Mr. Bickersteth of Liverpool (*Medico Chirurgical Transactions*, vol. xlvii) has suggested a method of securing the fractured ends of this and other bones by means of a drill, and has given a most interesting acccount of several cases in which it was successfully adopted. The employment of special external incisions, as in the case related, has rarely if ever been practised in connection with recent fractures of the lower jaw. The objection to them is the resulting external cicatrix or cicatrices which, although not of so much consequence in the male, as the whiskers will

usually completely cover them, must cause some deformity in the female. For this reason, I would only advocate an external incision or incisions in cases which cannot be successfully treated by other means. In the removal of the tongue, or portions of it, and in some cases of tumour of the jaw, I always now bring the ends of the divided jaw together by means of the wire suture; and my experience of this method is, that it is safe, efficient, and easy of application. Since writing this, Mr. Mason of St. Thomas's Hospital has been kind enough to direct my attention to the ingenious method of employing the wire suture in bringing the end of bones together, practised by him (*Medico-Chirurgical Transactions*, vol. liv). His method allows the wire to be easily removed at any time, and is, therefore, to be preferred to that which has usually been employed, should the case admit of the needle being passed in an oblique direction through both ends of the bone.—*British Medical Journal.*

The Use of Sulphuric Ether as an Anæsthetic. By THOMAS KEITH, M.D., Surgeon for Ovarian Disease to the Royal Infirmary, Edinburgh.

I ought ere now to have communicated to the JOURNAL my experience of sulphuric ether. I have given it in ovariotomy and other prolonged operations or whenever it was necessary in feeble patients to give an anæsthetic, ever since the beginning of 1867, when I doubt if anyone used it in this country except myself.

In giving an account in the *Lancet*, August 1870, of my second series of fifty cases of ovariotomy, the following remarks were made.

"In Case LII, the excessive chloroform vomiting during the operation, and for some time after it, so prostrated the patient, that her chance of recovery was lost. In the early cases, I have frequently had to deplore the injurious effects of chloroform vomiting in ovariotomy, and so evident was

the mischief occasioned by it in this unfortunate case, that I have since then entirely abandoned the use of this agent in ovariotomy and other severe and tedious operations, and now use instead anhydrous sulphuric ether, made from methylated alcohol, administered through Dr. Richardson's apparatus. The oftener ether has been given, the more I like it. How chloroform so quickly superseded it is a marvel. The anæsthesia of ether, though at first slower, is extremely steady and quiet. There is infinitely less vomiting than with chloroform, and, instead of the pallid face and feeble pulse of chloroform, the patient, after a long operation, is put to bed with a flushed face and a great surface-circulation. In cases of non-adherent tumour, vomiting is, I fancy, of little consequence; but, where there has been extensive adhesion, and when oozing may be set up by it after the wound is closed, vomiting can be no trifle, and may turn the scale. Sulphuric ether has now been used—at first with a small proportion of chloroform—in 53 cases of ovariotomy (of which 46 recovered), and something has been gained from the use of it. I would put in a word for the old anæsthetic. Chloroform certainly saves the surgeon five or ten minutes of time, and a little trouble. Had it never been heard of, I doubt if humanity would have suffered from the want of it."

This opinion was looked upon here as heretical, and, being adverse to chloroform, was attributed to personal motives; yet after four years, I have little more to add than simply to endorse it.

The case above referred to was at the time published in the *Edinburgh Medical Journal*, and I felt so certain that chloroform vomiting killed the patient, that in the case which came next I took to sulphuric ether in a sort of despair. It was not new to me, for in 1847–48 we all looked upon ether as a good practical anæsthetic. When I began again to use it, a small proportion of chloroform was added; for the best English ethers were found to be very impure, and it was rare to get one with a specific gravity under .750

At length, Dr. Arthur Gamgee put into my hands a perfectly dry ether made from methylated spirit. It is manufactured by those conscientious chemists Messrs. Macfarlane. Its specific gravity is .715 to .717. It cost me three shillings a pound of twenty-four fluid ounces, and it answers admirably for local anæsthesia. For the last six or seven years, nothing but this ether has been used, except twice, when bichloride of methylene was given, and once, a few months ago, when operating at Newcastle, when chloroform was used. The apparatus employed has been the mask of Dr. Richardson's apparatus, with a sponge fixed in the bottom. It might easily be improved; but it answers its purpose well enough, though there is great waste with it. For many years, the ether was administered by my brother Dr. Keith; of late, it has been given by Dr. Foulis, who will at an early day give his observations upon it. There has been no difficulty in bringing patients under its influence. It is given freely, and plenty of air gets in with it. We have not observed the excitement which is said to accompany the inhalation of ether. It is always taken by the patient in bed, and no one is allowed to be in the room but the administrator and nurse.

But the great advantage of ether over chloroform in such operations as ovariotomy lies in the almost complete absence of after-vomiting. Vomiting with an open wound is of no consequence. With chloroform, after-vomiting was the rule, and, in the afternoon and first night of an operation, the nurse required to be always at hand with a basin for the vomiting. With ether, after-vomiting is quite the exception, and it is never severe or continued; while some patients sleep on, and often remain two or three hours without moving after being placed in bed.

My confidence in sulphuric ether as the best practical anæsthetic we yet have does not thus diminish. Its low specific gravity must make it less dangerous than the others. It is not perfect, but it answers my purpose better than any other. It saves my patients from the misery of after-vomit-

ing, and, in ovariotomy, from the chance of losing their lives in certain cases of bad adhesion from bleeding being set up by the sickness after the abdomen is closed. Whether of itself it diminishes the risk of operations, I cannot tell; but I am inclined to think that it does often save the feeble ones. This much I can say, that ether has now been given in one hundred and thirty-five cases of ovariotomy, and in two cases of successful removal of the uterus for fibro-cystic tumour. In every case, the anæsthesia was profound, many of the operations were very tedious, and, of the last sixty-six operated on, sixty have recovered.

In the beginning of 1848, Sir James Simpson wrote in the *Edinburgh Medical Journal* an elaborate statistical paper, showing that the mortality after amputation of the limbs, especially of the thigh, performed in hospitals under ether was much less than before ether was known. The results of upwards of three hundred amputations were obtained by circulars sent out in the usual way. This paper is worthy the attention of those interested in the statistics of the more recent results of operations in hospitals. Either chloroform has increased the mortality of hospital operations, or, in the early days of anæsthesia from ether, the results were better than at a later period. It may be also well to note that, when this paper was reprinted some years afterwards the words ether, etherised, and etherisation were in almost every instance displaced by the words anæsthetic, anæsthetised, and anæsthesia. Perhaps the results of operations were then considered too good for ether, which latterly came to be given the merit of being only an improvement on the mandragora and other rubbish of the middle ages.—*British Medical Journal.*

A Suggestive Incident which occurred during Etherisation. By FURNEAUX JORDAN, F.R.C.S., Surgeon at the Queen's Hospital, and Professor of Surgery at the Queen's College, etc.

Every surgeon, it may be presumed, desires to use the safest and most effectual anæsthetic. Those who prefer

chloroform believe that, in expert hands, it is safe, and has fewer drawbacks than ether. Conceding much on this point, we must not forget that, while narcotisation is everywhere a daily, an almost hourly need, its induction does not always fall into experienced hands. If, then, anæsthetics must be frequently administered and administered with variable degrees of judgment and experience, a growing amount of evidence points to ether as the safer anæsthetic.

Recently, I was about to place a ligature on the femoral artery for popliteal aneurism. The patient having been etherised by my colleague Mr. Priestley Smith, who is very familiar with the use of ether, I made the usual incision in the integuments. The patient showed no sign of pain; but I had scarcely completed the incision, when the limb was seized with a marked tremor of the muscles. To clean a large artery with a sharp knife (and I believe, with the late Mr. Syme, that to dissect an artery with a sharp knife is less mischievous than to contuse it with blunt instruments) in a violently trembling limb is not a desirable proceeding. At my desire, more ether was given, but the tremor continued unabated. I again desired that more ether should be given. Mr. Priestley Smith's immediate and significant reply was this: "The man is as much under the influence of ether as it is possible to put him." With the assistance of firm pressure on the muscles of the thigh, I completed the operation; and I may add, that the man has (fourteenth day) done perfectly well.

From the incident just related, a few useful conclusions may be drawn. The most important is this: the profoundest anæsthesia of ether is not so deep as to prevent reflex muscular tremor from following an incision in the skin. It is probably much less profound than even ordinary degrees of chloroform narcotism. In short, it would seem that, with common care, a patient cannot be put dangerously under the influence of ether. Nevertheless, the anæsthesia of ether is sufficient for the vast majority of operations. Ether, then, notwithstanding certain drawbacks, should claim our first attention.

The chief drawback of ether is, that it cannot be readily administered by timid persons. Anybody can pour a little chloroform on to a handkerchief, and hold it over a face. Not everybody can resolutely pour out a large quantity of ether, resolutely and closely bind a towel round the mouth and nose, and resolutely disregard the most violent muscular contortions. But these are difficulties which very attainable knowledge and experience will surmount.

In a few operations where the skin needs to be freely incised, and especially where such incisions precede delicate and anxious manipulations, the deeper influence of chloroform may be desirable. Quite recently, the practice of beginning with a little chloroform, and then giving ether, answered extremely well in the hands of my colleague Dr. Sawyer in the case of an old man, from whose tarsus I removed a carious patch by means of a large trephine, after a free crucial incision in an "Esmarchised" limb.

In this note, it is far from my intention to discuss the general question of anæsthesia; but a few words, and a few only, on chloroform. I entirely coincide in the opinion that every kind of "apparatus"—everything containing "valves"—should be scrupulously avoided. Every effort should be made to prevent, what so readily occurs, a deeper anæsthesia than the particular operation, or stage of operation requires. Timid Chloroformisation is, especially in the early stages, equally mischievous. Timidity in the administration of chloroform means much more chloroform, longer time, and greater danger. Again: conjunctival insensibility is too rough a test; it may come too soon. Much worse, it may come too late. In children, the conjunctiva is often insensible in a few moments, especially if there be anything on the stomach. As regards food in the stomach, in hospital practice it is common for mothers, when they are instructed to bring children without breakfast (or other meal) to give them some outrageous compound—beer and fruit, apples and pears, being the commonest—under the impression that these are not a

meal, and that the poor child must be "strengthened for the operation. Occasionally, as in old imbibers, the skin is ready for the knife before the eye tolerates the finger. The deep pinch of an artery-forceps at the seat of the operation is a better test.—*British Medical Journal.*

MEDICINE.

On the Action of Amyl-Nitrite on the Vascular Tonus and on the Heart Beat.—Dr. W. Filehne finds as most other experimenters have done, that the inhalation of amyl-nitrite causes a considerable dilatation of the blood vessels of the head and upper parts of the body. From a review of former experiments he concludes that the mechanism of this dilatation (*i. e.*, whether it is due to an action on the vessels themselves or on their nerve centres) is still a matter for investigation. He adduces as an argument against the direct action on the vessels the fact that only some of these are dilated, and that the limits of the area of vascular dilatation are pretty sharply marked. If, then, the vessels were affected by the local action of the nitrite it would be difficult to explain how neighbouring vessels, through which the same blood was passing, should re-act so differently. Again, if the vessels were directly affected, those of the lungs, by which the absorption occurs, ought to be most dilated. But having made a window in the chest wall of a rabbit, sparing the pleura so as to avoid entrance of air, Filehne saw no change of colour of the lungs to follow inhalation of amyl-nitrite, although the vascular dilatation in the vessels of the ear was extremely marked. He considers the question is settled by the following ingenious experiment:—The sympathetic was divided on one side in the neck of a rabbit. The vessels of the ear on that side dilated. The upper segment of the divided nerve was then irritated by an induction current of such strength that the vessels were brought into a condition of mean contraction, so as to equal in size those of the sound side. Amyl-nitrite was then

administered through a tracheal fistula, so as to avoid the spasm of respiration produced by its contact with the nares. Immediately the vessels of the sound side dilated, while those on which the divided nerve was being irritated remained unaffected. By this is shown that the action of amyl-nitrite is not on the vessels, nor on the nerves, but on the nerve centres. The effects of amyl-nitrite on the heart was found to be different in frogs and in mammalia. In both classes of animals a *large* dose caused slowing and feebleness of action. A small dose in frogs produced no effect, but in mammalia (men, rabbits, dogs) a very considerably increased rapidity was noticed. That this was due to a paralysing action on the vagus centre in the medulla-oblongata was shown by a somewhat similar experiment to that noticed above. The author divided both vagi in the neck of a rabbit, and then Faradised the lower end of one of them with a current of such strength that the rapidity of pulsation of the heart was the same as before the operation. Then amyl-nitrite was administered, and, although the effect on the vessels of the ear was well marked, no increase in the cardiac pulsations occurred. The difference in the effects of the drug on frogs and mammals is explained by the absence of a *constant* inhibitory action of the vagus on the heart in frogs. If in these animals the vagi be divided, no increase in the number of pulsations occurs, while such an increase always occurs in warm-blooded animals, showing that, in them the vagus is constantly in action. The increased rapidity of respiration which follows inhalation of amyl-nitrite is supposed not to depend on a direct influence exerted on the respiratory nervous centres, but to be due secondarily to the alterations in the vascular tonus and the cardiac action. A paralysing action on the vaso-motor centres of the head and neck and on the vagus centre, similar to that caused by amyl-nitrite, is produced in men by mental emotion, such as shame, or timidity, which is accompanied by blushing and increased frequency of pulse. For interesting remarks on this similarity of effect, and for a criticism on former experiments, we must refer to the paper itself.—*Pfluger Archiv.* IX. 470. J.M P.

CANADA

Medical and Surgical Journal.

MONTREAL, MARCH, 1875.

THE BEAUPORT LUNATIC ASYLUM REPORT AND GENERAL PARALYSIS OF THE INSANE.

We have not been favored with a copy of the report of the Lunatic Asylum at Quebec, but are enabled to draw attention to that document from extracts which were published in an evening paper.

In the medical part of the report it appears that a large number of the patients are classified as incurable. The report states that the number of insane admitted during the years 1872-3, above the age of sixty years, seems to be very large as compared with the sane population of the same age, and which "proves that society has largely taken advantage of our institution to rid itself of cases of senile dementia." A great many are sent to die, when from poverty or their own violence, they become a burthen to their friends. The chance of benefit is greatly diminished by this system of neglect, as it is unquestionably the experience of all observers, that insanity of whatever kind, is to be treated solely, with a chance of benefit, in the early stage of the disease.

In alluding to general paralysis of the insane, the report goes on to say, "This painful disease (general paralysis) "offers few hopes of cure. Out of 100 cases we can barely "count three or four who have recovered their reason or "their original health." It would be interesting to know what treatment was adopted, in the three or four cases of recovery here reported.

General paralysis of the insane has, until quite recently, been regarded as an incurable malady. The disease might

in some cases be prolonged, but was sure, sooner or later, to claim its victim. So constant is this the result, that in the prognosis of a case of general paralysis, it has been customary for the physician to state that it is a mere question of time as the disease is incurable.

From the recorded observations of Drs. L. Fox, George Thompson, and other workers in the field of investigation, it would seem that there is every prospect of reducing the treatment of this disease to a certainty, or at least to the same probability of cure which is observed in other maladies. In the *British Medical Journal* for Oct. 24, 1874, will be found an article, or rather the record of two cases of general paralysis successfully treated by the persistent use of calabar bean. Dr. Crichton Browne who reports these cases, is Medical Director to the West Riding Asylum, and Lecturer on Mental Diseases to the Leeds School of Medicine.

On referring to the January No. of the *Journal of Mental Science* published by the Medico-Psychological Association, and edited by Drs. Maudsley and Clouston, there will be found a most important and highly practical paper "on the Physiology of General Paralysis of the Insane, and of Epilepsy," from the pen of George Thompson, L. R. C. P., London; Medical Superintendent of the Bristol Lunatic Asylum. In commencing this paper Dr. Thompson remarks "That if we would have reliable facts upon which to base our theories and practice, such facts must be the result of observations upon the living rather than upon the dead subject."

After alluding to the unsatisfactory results from even the most minute investigations of diseased structure, he points to the value, and the important revelations to be derived from the proper and combined use of the various resources in the hands of the physician. The tracings made by the sphygmograph, the condition of the vessels of the optic disk as observed by the ophthalmoscope, the temperature of the body taken and carefully noted, all these means combined,

without fail, indicate the condition of the patient, and point to the proper method of treatment. We transcribe the theories and facts as given by Dr. Thompson in the article referred to.

The Theories.—I use Dr. Long Fox's words and my own. (I.) That the organic change which exists in the very early stages of General Paralysis consists of a diminished calibre of the vessels, which is of the nature of a persistent spasm. 2. That this spasm, though persistent if left untreated, is, if recognised early, amenable to remedial means. (3.) That the lesions found after death are not the cause, but the result, of early organic changes that need be only of temporary duration.

The Facts.—(1.) That the tracings of the pulse taken at the wrist by the sphygmograph in cases of General Paralysis, when untreated, is precisely similar to that found in a person in good health who had been exposed to a cold bath for the space of a minute. (2.) That the vessels of the retinæ and optic discs are thin and attenuated, and the discs themselves are void of their natural pink tint. (3.) That General Paralytics are more frequently the subjects of cerebral syncope than persons labouring under any other disease of the brain. (4.) That in the early stages of General Paralysis the temperature of the body is lower than in health, and the skin of persons so affected is then in that condition known as the *cutis anserina*, resembling that condition seen in the cold stage of ague, in cholera, or in the rigors preceding a febrile attack. (5.) That by the administration of such remedies as are known to be antagonistic to spasmodic action, the pulse-tracing may be brought back to a healthy form, the natural appearance of the retinæ may be regained, the temperature of the body may be raised to the normal standard, and then the skin will assume its original smoothness.

The appearances of the optic discs and retinæ, as revealed by the ophthalmoscope have been before alluded to. In the June No. 1873, of this Journal, we published a paper from the pen of H. R. Bigelow, Esq., of Boston, Mass., in which that gentleman gave the results of his ophthalmoscopic observations on thirty-one cases of general paralysis. Of these, eleven presented evidence of what the writer called atrophy of the disc, in thirteen there was neuro-retinitis. and in seven the discs were congested. Those cases in which atrophic changes were observed were of long standing, but those in which increased vascularity was found were in the early stage of the disease. He also noticed that the rapidity with which the atrophic changes occurred or succeeded the stage of congestion bore no relation to the

general progress of the disease, but seemed to depend upon local causes.

This opens up a new field for observation, and we trust that before long we will be able to record the honest results of the many workers on this interesting subject. With regard to treatment Dr. Thompson states that to be hopeful of success the cases must be early recognized, if the treatment is commenced late in the attack very little benefit is to be expected. During the stage of excitement the calabar bean is to be withheld; he says he has given the drug until excitement, or even an epileptiform seizure has been brought on. But then he stops its use for a time. The dose usually administered is a quarter of a grain of the extract repeated three times a day. He does not appear to place entire reliance on the use of the calabar bean, but remarks that in his hands it has fulfilled all reasonable expectation.

THE MAYORALTY OF THE CITY OF MONTREAL.

We have much pleasure in announcing the almost unanimous election to the Mayoralty of this city of our friend and brother practitioner William Hales Hingston, M.D., L.R.C.S., Edin. Dr. Hingston has occupied a prominent position in our city as one of its leading surgeons. After graduating at McGill University in the year 1851, he went abroad and pursued his studies in Scotland and on the Continent of Europe. On his return to this country he commenced private practice and soon afterwards received the appointment of Physician to the St. Patrick's wards of the Hotel Dieu hospital. Since then he has been unremitting in his devotion to the practice of his profession, selecting surgery as his first love, we might say his only love, as the doctor appears to be a confirmed old bachelor. We hope and fully believe that this selection is most judicious at the present juncture, and trust that his Worship will be aided and seconded by his Council in the general ameliora-

tion of the sanitary condition of the city. The effect of the existence of epidemic disease amongst us, which is not to to be denied, has acted most injuriously on the trade of Montreal. It should be the aim of every good citizen to endeavor to aid the authorities in the many needed improvements, and we feel confident that the Mayor will exercise a spirit of determined will in carrying out necessary reforms.

Our late Mayor deserves the thanks of his fellow citizens, for the firm manner in which he insisted on establishing a small-pox hospital, and although there were those who questioned his right to act in the premises, his action has been fully endorsed by public opinion. We trust our present Mayor will, in like manner, ignore any childish babbling in respect to needful measures, and assume responsibility in enforcing improvements which have reference to the general sanitary weal. We give below an extract from His Worship's speech, (taken from the GAZETTE) which we commend to the serious consideration of all.

If, in conclusion, we find that the mortality in certain unhealthy and overcrowded courts, or in certain crowded districts of this city, rises to 40, 50, 60 or 70 per 1000, and that in other more open, airy and well ventilated localities the rate of death falls to 10 or 20 per 1,000, what is the inference? Were it possible to obtain those data, some surprising and startling facts would be obtained. There are too many persons living in the houses for the size and cubic space afforded. But not only is individual overcrowding a cause of disease and death. Persons acquire property, perhaps large enough on which to build an ordinary house, but on this property they place several tenement houses, and instead of having breathing space in the rear, they erect a second row of houses as tenements, when even a wood shed would be considered too much; in some places there are rows of houses three stories high, with a second row of the same height not fifteen feet apart. The system of covering every available space with tenements, which become so many centres of disease, should not be allowed, and the only way would be that the erection of houses with insufficient means of ingress for pure air, should vitiate any contract between landlord and tenant, and deprive the former of any legal right to collect rent as certainly as would a defective roof, or looped and windowed raggedness. While other cities share in this overcrowding and stifling, they must yield to this in its pre-eminence in small-pox. Montreal seems to be the nidus of that loathsome malady. While efforts are being made, on the one side to stamp it out by means of vaccination, re-vaccination and isolation—measures which the scientific world are united in recommending—vaccination is not practised among a considerable portion of the inhabitants, and isolation

is the comparatively rare exception. It required but twenty deaths to make 1,000 in one year in this city from small-pox alone (more than twice as many as there were deaths from consumption), yet only 53 of that number died in the hospital specially set apart for their reception. It will be for you, gentlemen, to say whether persons labouring under this loathsome malady will be permitted to become centres of disease and death; or whether they shall be removed to places suitably prepared for them, where danger of infecting others will be lessened.

I have not time to more than touch upon the vexed question of vaccination. If science has settled any one question in medicine, it has certainly pronounced in a definite manner in favor of the practice. But "doctors differ" is an old aphorism, and a portion of the citizens of Montreal is becoming educated in a disbelief in the power of vaccination for good, and a belief in its powers for evil. I should wish to direct attention to a fact pregnant with interest. There were 981 deaths during last year from small pox. Of these, 827 were among the French Canadian portion of the population. Why this increase? this frightful mortality among that section of our fellow-citizens so remarkable for their frugality, temperance and cleanliness? The answer may be found in the circumstance that it is they who have been chiefly, I may say, solely influenced by the writings of those who are opposed to vaccination, and who in consequence, refuse to permit their children to be vaccinated, while the others as a rule, are vaccinated, and frequently revaccinated, especially in view of an epidemic. What is the practical inference to be drawn from what I state?

Ready Method of Estimating the Fat (Cream) Present in Milk.

JOHN HORSLEY, F. C. S., *Chemical News*, describes a simple method of determining the amount of cream in any sample of milk, as follows: The milk is agitated in a graduated glass tube, with its bulk of ether, for four or five minutes. Alcohol is then added, equal in volume to the milk employed, and the whole well shaken together for five minutes. The tube is then placed in a vertical position, and allowed to remain at rest, when the oily matter will quickly rise to the surface, and its amount can be read off at once on the scale, and the percentage thence readily computed.—*Detroit Review of Medicine.*