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# THE Canadian Journal of Medical Science.

A MONTHLY JOURNAL OF BRITISH AND FOREIGN MEDICAL SCIENCE, CRITICISM, AND NEWS.

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## Selections: Medicine.

### SPINAL IRRITATION.

BY JOHN E. LOCKRIDGE, M.D.

From a long and varied experience in the management of this protean complaint, denominated "spinal irritation" by such writers on the practice as recognize it as a separate disease, I have long since come to the conclusion that it is a disease *per se*, if not indeed *sui generis*. The name is apt enough, it is true, to call attention to the seat of the trouble; but when we come to enumerate the symptoms and manifestations of the disease, we will find that the spine is just about the last part of the economy that we would suspect of being in arrears in its physiology. But, inasmuch as a name intelligibly expressive of both the pathology and accompanying phenomena of the complaint must needs be paraphrastic, I will content myself at this place with a retention of the old appellation, and when treating of the nature and symptoms of the disorder attempt to elucidate some points hitherto doubtful; and will close this paper by annotating a few cases in point.

The symptoms of this disease are as numerous almost as there are organs and parts in the body whose functions can be disturbed by alterations from health in the spinal centre, from which in part they derive their life and control. These disturbances will occur from above downward, as the so-called irritation may happen to be located in the cervical, dorsal, or lumbar vertebrae. I will enumerate some of them. Beginning with the organs of digestion,

I have seen, amongst others, dysphagia from paralysis or tonic spasm of the gullet; apparent stricture of the same; gastralgia, spasm of the stomach, nausea and vomiting, and almost every variety of dyspeptic symptoms. In the respiratory and circulatory organs I have often met with aphonia, spasm of the glottis, asthma, a kind of nervous cough, singultus, and an inability to take a full inspiration; palpitation of the heart, and bellows murmur of the same, intermittent pulse, and feigned cardiac disease of divers kinds and degrees. There are also pains and sensations, either fixed or fleeting, in different parts of the body—in the neck, chest or abdomen. These symptoms will persist in spite of the ordinary rational treatment; or after having been relieved, will recur time and again.

If now the practitioner examine the spine, which is not complained of or suspected, to his surprise he will find a point tender on pressure; the patient will start up as if electrified, and complain of the heart or stomach, or be thrown into an attack of asthma, or palpitation, or gastralgia, or colic, as the case may be, or as the organ is under the control of nerves sent out from the point irritated. The pressure should be made very carefully with the index finger downward between the spinous processes, and laterally between the same, as well as between the arches of the vertebrae; and if the patient be over-sensitive to touching, or if there be any doubt in the mind of the practitioner, as to the real existence of tenderness, he should dip a sponge in hot water and pass it slowly down the column, and if tenderness exist at any point the patient will surely give some

sign. The tenderness may be confined to a single intervertebral space, or there may be several together tender, with one more so than the rest, gradually shading off; or again the whole spine may be hyperæsthetic on pressure. In short, I would insist that a careful examination of the spine be made in every case suffering from one or more of these pains, aches, spasms, or sensations, whether fixed or fleeting, without fever or appreciable organic change to account for so great and often so persistent suffering; and especially if the symptoms persist or recur after a careful course of anodynes, antispasmodics, and alteratives. I have, time and again, seen cases of apparent cardiac disease, or gastralgia, resist ordinary treatment for years, and finally yield promptly and permanently under treatment directed *wholly* to the spine; and I am sorry to say that I have been called upon to treat a recurrence of neuralgia of the stomach, colic, and the like, half a dozen times in a year, and I never did suspect the true nature of the trouble.

The *nature* of this disease is not well understood. Pathologically it is entirely distinct from active congestion, inflammation, atrophy or hypertrophy, induration or *ramolissement*, or any other affections of the medulla spinalis involving organic lesions or destruction, with the resultant paralysis of the parts below. Nor have I ever seen it, to any great extent, influence locomotion; sometimes, however, a slight degree of numbness or anæsthesia is complained of in the extremities. Its nature has generally been ascribed to a rheumatic or gouty condition of the ligamentous structure of the spine. This must be erroneous in the vast majority of cases, at least; for, in the absence of any history of rheumatism or gout in any other portion of the body, and in the total absence of pain or uneasiness about the spine even on movement, it is difficult to imagine that either of these could exist for months and even years without having been suspected.

In the absence of an opportunity to observe the morbid anatomy, I have long since regarded it as some kind of *passive congestion* of the membranes of the cord, and most likely the *pia mater*, arachnoid, and the loose areolar

tissue by which the latter is connected with the medulla spinalis. The engorgement may be sanguineous or serous, or both. The arachnoid is scarcely susceptible of congestion itself, but the surrounding areolar tissue is, and the irritation is most often met with in the cervical and dorsal regions, where this tissue is most abundant. Some anatomists contend that these slender filaments of areolar tissue are nervous fasciculi, and that they arise from the arachnoid, and are analogous to those of the sympathetic, and that there are also ganglia to be found here. But, be this as it may, it is very easy to understand how any alteration in structure here from congestion or infiltration, or both, must irritate the outgoing spinal nerves, which impression will be conveyed centrifugally, giving rise to the symptoms enumerated. In those cases in which the disorder is manifested in the internal organs, which indeed are very numerous, the impression is conveyed through the catenation of the spinal nerves with the external branches from the ganglia of the great sympathetic, by which system most of the organs are richly supplied, and some of them, indeed, exclusively.

The *cause* of this disorder is, in many cases, obscure. It is most often met with in the higher walks of life, in those who lead an inactive life; in those of a nervous or phlegmatic temperament, whose organization is rather below the healthy standard; and in such women as are disposed to hysteria. In the South, it is often met with in the case of ladies of lethargic habits, and who are indisposed to locomotion. It is more often met with in women than in men, and more often during the years of menstruation than before fourteen and after forty-five. Girls under fourteen and men are by no means exempt from it; but it very rarely occurs in boys. I am very sure that whatever tends to enfeeble either of the great systems of the organism, whether during employment or leisure, or whatever favours local congestions, superinduces this disease. I have often met with it in the cases of sewing-girls, school-girls, teachers, and ladies who spend much of their time at embroidery and needle-work. Diseases and displacements of the uterus of long standing afford a fruitful cause.

The *diagnosis* of the disease is by no means difficult; yet I have reason to believe that many cases have gone on for months, and even years, without having their true nature ever suspected; and a careless or inexperienced practitioner might direct his treatment quite a while to an alleviation of the symptoms before suspecting the true nature of the trouble. One of the most remarkable features, indeed I will say an almost pathognomonic symptom is the entire absence of pain or uneasiness of any kind at the point of spinal irritation, except on pressure. This is true in the vast majority of cases, notwithstanding the most varied motion. It is the absence of this pain that usually throws the physician of his guard. Another important sign is the singular absence of fever, notwithstanding the feigned disease in some organ or structure may be violent and persistent, with a great degree of resultant soreness on pressure.

The disease is, of course, most apt to be confounded with organic or functional diseases of the organs implicated, and in the organs the disorder is apt to be attributed to some delinquency inherent to the structure itself. The absence of fever, a careful examination for structural changes, and above all a persistence of the symptoms in spite of a well directed treatment, must direct the physician to a right conclusion. For instance, I was called to see a lady, ten years ago, who had a pain in her stomach. The doctor in attendance thought it was rheumatism, for in fact the lady had had rheumatic fever several years before that. It had resisted, for several weeks, anodynes, and colchicum, and fomentations, and even blisters to the stomach. On examination, a tender point was found in the dorsal spine, pressure there aggravating the pain in the stomach. A small blister to the spine relieved the stomach like magic, and there never was any return of the trouble, nor was there the least pain or uneasiness at the time in any other portion of the body.

In rheumatism of the spine, lumbago, and sciatica, there is pain on motion and at rest, and the tenderness on pressure is in the *erector spine* and other muscles of the back, rather than in the intimate structure of the column.

In active congestion of the medulla spinalis, there is uneasiness complained of at the point of afflux, with more or less passivity or incipient paralysis of the parts below this point; and a sense of constriction around the body on a level with this point, as if a cord were drawn *taut*, is almost a pathognomonic symptom of active congestion. From spinal meningitis, myelitis, locomotor ataxia, tetanus, hydrophobia, and the like, I take it for granted that the differentiation is sufficiently easy for the most careless observer. Tumours pressing upon the ganglia and branches of the great sympathetic within the chest or abdomen, and thus giving rise to feigned disease in the organs supplied by them, are more apt to confound the careful practitioner; and this is notably true as regards the air passages, heart and stomach, cancer and other tumours of the greater curvature of the stomach, of the liver, the pancreas, the transverse colon, and aneurism of the abdominal aorta at the usual point where its parietes are weakened by the hiatus for the celiac axis. Any of these tumours may press upon the semilunar ganglion and the radiating fibres constituting the solar plexus, and through these and the splanchnic nerves the impression will be propagated to the organs of the chest and abdomen, and thus a functional turmoil may be kept up in one or many of these viscera. I believe it is by the catenation of the internal or visceral branches of the ganglia with the terminal branches of the *par vagum*, and not by direct encroachment, that dyspeptic symptoms, gastralgia, nausea and vomiting, palpitation and cardiac murmurs, and the like, are kept up. So it will be wise for the practitioner, in these obscure and trying cases, to examine very carefully for an abdominal tumour.

Before quitting this part of the subject, I will say a word about the character of these cardiac murmurs, which may aid some one who is in doubt whether he has an organic or merely functional case to deal with. Like the hygric murmur, in my experience this murmur produced by perverted nervous influence, whether the pressure and consequent irritation of the roots be from congestion or serous infiltration within the spinal canal, or from the pressure of a tumour outside (*ante* ?), yet I have always

found the murmur to be the *bruit de soufflet*, the *bruit de scie*, or the filing or rasping bruit, which is generally ascribed to roughness of the orifices or valves, and which is due to the deposition and organization of the normal products of inflammation. The regurgitant murmurs are produced by an irregular contraction or spasm, or undue relation of the fleshy columns, thereby either drawing the *chordæ tendineæ* and attached valves short of the auriculo-ventricular foramen, or allowing the valve to be driven through into the auricle at each ventricular systole; and in either case producing a murmur. This is especially true of the *columnæ papillares*, which are free in their middle, being attached merely by one extremity to the ventricular parietes, and by the other to the *chordæ tendineæ*; and hence must be capable of contraction and relaxation independently of the ventricles.

The *prognosis*, under proper treatment, is singularly favourable. Indeed, I know of no circumstances under which the physician is better rewarded in gratitude and reputation than right here, in affording prompt relief by the exercise of a very little care in the proper direction of his treatment. In those cases that have been overlooked for years, it will require weeks and months often to restore to perfect health, not only the spine but those organs and structures secondarily lashed into semi-organic disease. After having been apparently relieved the spinal tenderness is liable to recur again and again, but in the end a healthy condition will be restored. I have seen cases that I had every reason to believe had existed for *ten* years, and have often met with the disease of from *two to five* years' duration; and I have seen the heart appreciably enlarged from long-continued overaction, valvular regurgitation and distention, and the like; also passive congestion of the lungs and other organs, return to their normal condition under treatment directed almost wholly to the spine. According to my experience in the disease, and it has not been small, there is no disposition in the spinal congestion, or whatever it may be, either to right itself or go on to permanent organic change or disorganization of the tissues; and this peculiarity of behaviour, I think, almost

stamps it as a disease *sui generis*, just as tetanus is or hydrophobia is. Notwithstanding the fact that I have seen the most rational constitutional treatment resorted to for months, and anodynes and antispasmodics for the organic manifestations, yet so long as the real seat of the trouble was unattended to, the patient was liable to a recurrence of the symptoms again and again. I have no doubt but that a continuance of the spinal irritation is capable of producing organic changes in the structures implicated which are beyond repair, and that disorganization of the cord at the seat of the pressure may ensue, and as a result many cases have proved fatal; but such a termination I have never seen.

The *treatment* is sufficiently simple and rational. A course of counter irritation to the spine is of the first importance, and in many cases is all that is required. A succession of small blisters, or pustulation with croton oil, in some cases it may be necessary to apply a cup and take an ounce or two of blood, and in very persistent cases a seton might be advisable; but I have always succeeded with blisters and croton oil. Where the tenderness extends for several inches, I apply a long, narrow strip of blister, and repeat again and again, if necessary.

In those cases in which the general health is below the normal standard, and the patients are pale, nervous, weak, lethargic, indisposed to exercise, with cold extremities, and disposed to local congestions, and have a weak and irritable heart, and are threatened with syncope, or do actually faint on rising up suddenly,—in such cases a course of general and special tonics and alteratives must be used in addition to the counter irritation, without which even these would be powerless to effect a cure. Of these tonics I have found iron, nux vomica, phosphorus and digitalis, variously combined, to be the most efficacious. In those cases in which there is manifested a weak and irregular heart, with a bellows murmur and some hypertrophy, together with coldness of the extremities and a disposition to syncope, I have seen a pill containing two grains of the pyrophosphate of iron and half a grain each of ext. nux vomica and pulv. digitalis, three times a day, seem to work wonders almost. Of course, suitable exercise must be insisted on in those persons who have been in the habit of sitting and *lounging* a great deal, and a change of occupation is necessary in some cases, and suitable clothing and diet in all cases.—*American Practitioner*.

## CLIMATIC TREATMENT OF PULMONARY PHTHISIS.

BY ALFRED L. LOOMIS, M.D.

Read before the American Medical Association, at Buffalo, June, 1878.

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During the past ten years my advice has been given to a large number of persons suffering from pulmonary disease. Under my direction pulmonary invalids have taken up their residence for a longer or shorter time in nearly every well-known health resort on this continent. I have sent but few phtthisical invalids to other countries, for within our own boundaries may be found every diversity of climate. From these experiences, without entering into the details of individual cases, I have reached the following conclusions:

*First*—That we can expect permanent improvement in cases of developed phtthisis only after a prolonged residence in the locality which experience has proved to be best suited to each individual case. Permanent favourable results cannot be obtained from an annual change of climate.

*Second*—That cases of *tubercular* phtthisis in any stage of the disease grow steadily and rapidly worse in all localities. Such cases do best in the quiet, well-ventilated apartments of their own homes, where they can be surrounded by all those influences and circumstances which tend to make a feeble invalid comfortable.

*Third*—That cases of *fibrous* phtthisis in every stage, whether the fibrous process commenced in the pleura or in the bronchial tubes, even after retraction of the chest walls, especially in the infra-clavicular region, is well marked, and the bronchial dilatations which accompany it give the physical sign of extensive cavities, improve, and often reach a condition of comparative health, when they take up their residence in regions having very high altitude, such as are found in Colorado and in the Rocky Mountain range. The benefit which asthmatic and emphysematous invalids derive in these regions is most marked. I know of no locality where these classes of pulmonary invalids make such rapid and permanent improvement. Experience has led me to be very cautious in recommending these regions of high altitude to

invalids with catarrhal phtthisis. In the advanced stage of this form of phtthisis, I have never seen good results from a residence in such regions, and it is quite doubtful whether any one in its first stage has received benefit. It is stated by some of the advocates of the Colorado climate, that by it advanced cases of phtthisis are greatly benefitted, and often reach a condition of apparent recovery. In these favourable cases I would rather the exact nature of the diseased processes than the physical signs had been given, notwithstanding by some so much importance has been attached to the latter. My own experience leads me to believe that only cases of fibrous phtthisis are benefitted in regions of very high elevation.

Unquestionably, the majority of cases of pulmonary phtthisis are of the catarrhal variety, and it is in giving advice as to the climate and locality best suited to this class that the greatest experience and judgment is to be exercised by the medical adviser. One thing seems certain that after the stage of softening and excavation is reached by this class, no climate will long delay the fatal issue. It is during the stage of pulmonary consolidation, or during the period of enfeeblement which precedes consolidation, that we may expect permanent improvement and perhaps final recovery.

I have seen only a very limited number of cases of catarrhal phtthisis permanently improved by long sea voyages or a residence in a warm climate. A large number in the early stage of this disease, going from a northern to a southern winter, are temporarily improved: after the first apparently beneficial effects are passed, the degenerative inflammatory processes go on more rapidly than before. The invalids whom I have found to be most markedly benefitted by a sojourn during the winter months in a southern climate are those convalescing from some acute pulmonary affection, in whom the delayed convalescence raises the fear of possible phtthisical development, and those in whom acquired or hereditary phtthisical tendencies exist, yet there may be no positive physical signs of disease of the lungs. The list of such cases is a long one, and the results obtained are most satisfactory. My favourite resorts for such cases are Aiken in South Carolina, Pilatka, Enterprise and Gainsville in Florida,

and Thomasville in Georgia. My best results in the stage of consolidation of the catarrhal form of phthisis have been reached in those who have made a prolonged stay, (varying from one year to three years) in mountain regions with an elevation of from 1,500 to 2,000 feet. Of such regions the most positive and permanent beneficial results have been obtained in Ashville, N.C., and in the Adirondack region in this state.

I am led to believe that persons suffering from catarrhal phthisis do not do well at a higher elevation than 2,500 feet, and also that some regions with a much lower elevation afford all the necessary climatic conditions for this class of cases.

The mode of life which those suffering from phthisis should adopt is important. The general direction given us, "Live in the open air," but few of those who give or receive this advice appreciate its full meaning. My own personal experience, as well as my experience in regard to its effects upon others, leads me to believe that a camp-life, or a tent-life during the warm season in such localities as have already been indicated, is of the greatest service in arresting and curing phthisis in those who are not enfeebled. If this kind of life is not practicable, or the invalid's condition renders it hazardous, then spending the day in the open air in pleasurable excursions should be encouraged even in the feeble.—*Hospital Gazette*.

AN IMPROVED ANÆSTHETIC.—Dr. George Wachsmuth recommends (*Deutsche med. Wochenschrift*) for an easier, pleasanter and less dangerous anæsthesia, the addition to chloroform of one-fifths its bulk of ol. terebinth. The latter acts as a refrigerant to the lungs and thus prevents their paralysis, increases their capacity and volatilizes the chloroform, facilitating its diffusion. For the patient it is quite pleasant and for the physician, speedy and safe.—*St. Petersburger med. Wochenschrift*.

Karl Rokitanzky, Professor of Pathological Anatomy at the University of Vienna, died at Vienna on the 23rd of July. Rokitanzky was born in Kœnigrætz, Bohemia, February 19, 1804.

## Surgery.

### ON THE TREATMENT OF SPINAL ABSCESS.

BY SAMUEL W. GROSS, A.M., M.D., SURGEON TO THE PHILADELPHIA HOSPITAL.

Many of you will remember this little girl, whom I had before you several times during the spring months of 1877. As she has been under my personal observation ever since, and as she is a striking example of recovery from spinal abscess, I again present her with the double view of giving you an opportunity of completing your study of the case, and of affording me the occasion of explaining my views as to the proper mode of treating this most unpromising affection.

Catharine B., aged 12 years, strumous parentage, was thrown across a stove in the spring of 1874, and was soon after confined to her bed in consequence of severe pains in the lower dorsal region, which were followed by angular curvature of the spine and paralysis of the lower limbs. Upon her transfer from the Children's Asylum to my wards, March 16th, 1877, I found her greatly emaciated, paraplegic, without, however, loss of sensation, deprived of appetite and sleep, and suffering from hectic fever; and I was told by Dr. Perkins, under whose care she had been, that the temperature during the vesperal exacerbations reached  $103\frac{1}{2}^{\circ}$ . There was a decided hump in the lower dorsal region, the greatest prominence being formed by the eleventh dorsal vertebra, and a large abscess was pointing in the right loin. In searching for the cause of constitutional disturbance, I found that a psoas abscess was discharging freely on the out side of the right thigh, about three inches below Poupart's ligament.

As I desired to bring the child before you on the following day, I did not open the abscess; but, in the event of its spontaneous evacuation, which seemed to be imminent, I directed my assistant, Dr. Van Valzah, to have her closely watched, so that he could at once apply the dressings in a manner which I shall presently describe. On my next visit, at the expiration of twenty-four hours, I found that the abscess had discharged itself, and had been dressed as I

had requested, and that she had been put upon twelve drops of deodorized laudanum, which was repeated every twelve hours. Under this treatment and generous diet, at the end of two weeks, she had greatly improved; the hectic fever had ceased, and the temperature was reduced to 99°. At the close of another fortnight, Sayre's plaster jacket was applied, and, in another four weeks, she was making herself useful in the ward.

The opening of the lumbar abscess closed on the 27th of July, and the plaster dressing was discontinued on the 1st of November. For the past seven months the discharge from the psoas abscess has diminished to from one to two drachms of pus daily, and it is doubtless kept up by an imprisoned necrosed piece of the body of a vertebra, which it is, of course, impossible to reach. In other respects the child is perfectly well.

The management of abscesses dependent upon caries of the vertebræ has always engaged serious attention, since they are the most common causes of a fatal issue in angular curvature of the spine, from the constitutional disturbance which ensues upon their spontaneous or artificial evacuation. While it is true that small collections of pus, particularly those seated in the dorsal region, are occasionally absorbed, of which occurrence I have met with one example in this hospital, it is equally true, that lumbar, iliac, and psoas abscesses generally attain large dimensions, and their tendency is not to a cure by resolution, but to death from hectic irritation, septicæmia, or pyæmia.

With the view of preventing consecutive fever it is customary to open spinal abscesses by a valvular incision or by pneumatic aspiration, the object being to avoid the admission of air into their interior, under the idea that the reaction is due to the passage into the blood of the putrid material engendered by the contact of the air with the pus. Acting upon this theory, I was formerly in the habit of resorting to subcutaneous puncture; but the uniformly bad termination of my cases led me to abandon the practice. No better results attended the aseptic method in my hands. In a case of psoas abscess connected with disease of the last dorsal and first lumbar vertebræ, and of which I show

you the specimen, the pus was evacuated under lint saturated with carbolized oil, and the free opening afterwards kept covered with carbolized paste spread upon tinfoil. The patient, a woman twenty-five years of age, rapidly succumbed. In another case of abscess presenting itself in the loin, and treated in the same manner, the result was identical. Under the old plan, in which air was excluded from the sac, hectic always set in; while, under the more modern method, notwithstanding the employment of a powerful germicide in the two instances in which I resorted to it, a fatal systemic disturbance ensued. From the fact, then, of irritating fever occurring, whether air was admitted or not, I was led to question the accuracy of the atmospheric explanation of the dangers of opening spinal abscesses; and I now altogether discard the theory that the entrance of air is the cause of the untoward symptoms.

That putrid changes are not set up in pus by the contact of the surrounding air is strikingly shown by what is known as the open-air method of treating recent wounds, such as those made in amputation, or in the excision of morbid growths, of which you have recently had a good illustration in the case of lymphoma removed from the axilla. In empyema with pneumothorax, in which the inspired air is intimately mixed with the pus, there are no signs of septicæmia from the absorption of the mixture. So also in instances of pyothorax, after the matter has been let out by free opening, experience shows that putrid changes do not occur in the fluid that remains behind. Reasoning, then, from analogy, it is difficult for me to comprehend why the innocuous atmospheric air should be held to be the cause of ill effects of evacuating spinal abscesses.

If the hypothesis of putrid changes in the cavity of the abscess from the admission of air be abandoned, in what manner are the evil symptoms to be explained? In the elucidation of this question, I feel convinced that we must look to acute inflammation of the sac of the abscess, induced by the loss of support of its walls, through which rapid nutritive changes ensue from diminution of the resistance of its vessels to the increased pressure of the blood,



and through which the cyst itself is subjected to injury.

The sac of a spinal abscess, formed as it is of a firm membrane, known as the pyogenic membrane, and the surrounding stretched and altered tissues through which the pus has travelled in its efforts to reach the surface, differs from that of a superficial chronic abscess, in that its sides do not contract and approximate after its evacuation. As a result of the tension of its vessels, due partly to the compression exerted upon them by the accumulated pus, and partly to the infiltrated condition of its walls, its blood supply is comparatively slight, and the formation of pus is a slow process. From the very moment, however, that the circulation and nutrition of the cyst are disturbed by the withdrawal of its contents, from that moment the tension of the vessels is lost, and, as natural consequences, more blood is sent to the heretofore slightly vascular membrane, its surface becomes studded with minute granulations through the dilatations of the old capillaries and the development of new ones, and pyogenesis goes on at a greatly increased rate. So rapid, indeed, is the production of pus that a day or two suffices to cause the abscess to attain dimensions which, in its closed state, was the work of months. After several evacuations, it is, moreover, a matter of repeated observation that the pus is not only thin and somewhat putrid, but that it is more or less streaked with blood, the latter phenomenon being readily explicable by the rupture of the softened capillaries from the insult to which they have subjected by the alternate relaxation and distension of the pyogenic membrane during the discharge or accumulation of the contents of the abscess.

In illustration of the changes which ensue in the limiting sac, I show you a water-coloured drawing of a psoas abscess that had undergone spontaneous evacuation after several subcutaneous punctures. Instead of a smooth, almost bloodless membranous cyst, you will observe that the sac is highly vascular, beset with patches of ecchymosis, and covered with a greyish-white layer of aplastic lymph, with points of greenish discolouration, and areas of fatty transformation.

The theory of inflammation of the sac of the

abscess, from the injury to which it has been subjected, as the cause of the consecutive fever after its spontaneous or artificial opening, is not original with me, my attention having first been directed to it by the article on Diseases of the spine, contributed, 1862, by Mr. Alexander Shaw, of London, to the *System of Surgery*, edited by Mr. Holmes. Mr. Shaw does not appear, however, to have utilized the explanation as a guide to practice, since he merely advises that such abscesses be treated on general principles. Other authors hold substantially similar views, among the most recent of whom is Professor Hodgen, of St. Louis, who, in a paper on Antiseptic Surgery, contained in the *Transactions of the International Medical Congress*, Philadelphia, 1876, says that the bad symptoms consequent upon opening chronic abscesses are not due so much to the admission of air as to the rekindling of destructive inflammation in their walls. Having based the management of these cases on the truth of the hypothesis, I am led to call your attention to it, with the hope that it may prove as efficient in your hands as it has in my own,

The essential elements of the treatment are, first, to afford rest to the sac by support of its walls; and, secondly, to tranquillize the system at large, and control morbid action by the free exhibition of anodynes.

To fulfil the first indication, after the evacuation of the pus by a free incision, whereby an outlet for any detached fragments of bone is also afforded, adhesive strips, about one inch in width, are applied over the empty abscess, in such a manner that each succeeding one shall envelop one-half the preceeding one, care being taken not to embrace the entire body or limb, as the case may be. An opening having been made in the dressing, so as to admit of free drainage, a large, soft, flat, moist sponge is confined over the parts by a couple of adhesive strips and a roller, and kept wet to promote its expansion, whereby gentle, equable, and systematic compression is steadily maintained. So long as the discharge continues to be abundant, the outer coverings will require a daily change, but the adhesive plaster may be allowed to remain as long as it retains its hold, although for the first few days substitution will be

necessary every forty-eight hours. As soon as the granulating process has sufficiently advanced, as marked by the diminution in the quantity, and the alteration in the quality of the pus, the dressings may be discontinued.

Employed in this way, compression exerts its good effects by supporting the walls of the abscess, through which they are not only kept at rest, but the tonicity of their capillaries is maintained, whereby the pyogenic process is diminished, and the danger of hemorrhage averted. By approximating its sides, moreover, less of a cavity remains to be closed by granulations, and the healing process is much expedited.

With the view to allay nervous and vascular excitement, and thereby more effectually ensure rest to the parts and system at large, opium should be given in full doses for the first five or six days after the evacuation of the abscess. The value of anodynes in moderating the constitutional irritation has long been insisted upon by Professor Gross, and, if I mistake not, we are indebted to him for having pointed out the importance of this class of remedies in his *System of Surgery*, which first appeared in 1859.

With regard to other measures, it need scarcely be said that they should be of a tonic and sustaining nature, and that the inflamed and disintegrated vertebræ should be relieved of the pressure and friction exerted upon them by the superimposed parts, by means calculated to extend and to prevent motion of the spinal column.

In the case of the child, there can be no reasonable doubt that if the treatment, which I have outlined, had not been instituted, a fatal issue would have been rapid from the sudden and profuse drain to which her already exhausted system would have been subjected. So hopeful, indeed, was I of a favourable result, that I intentionally omitted the internal exhibition of quinia, and relied solely upon support of the sac and sustained doses of opium to prevent untoward symptoms. Under their agency the improvement in her general condition was most marked; and the application of the plaster jacket was only delayed because her sensitiveness and want of strength would not

admit of her being swung in the suspending apparatus. Under opposite circumstances, this invaluable means of fixing and relieving the disintegrated vertebræ from pressure should be resorted to at once, and an opening be made in the dressing to receive the compression sponge, which should be confined by a roller.

For an ingenious mode of applying the dressing, I cannot do better than refer you to p. 331 of Professor Sayre's work on *Orthopedic Surgery*, where you will find the details of a case of lumbar abscess which confirm the correctness of my views as to the benefit derived from supporting the sac, although the distinguished author advances no theory as to the cause of the dangers of evacuating spinal abscesses.

In further illustration of this subject, I will read you the notes of the first case in which I instituted the practice that was afterwards followed in that of the little girl. As it occurred before the invention of the plaster jacket, I had to content myself with enforcing strict recumbency, and fixing the spine, so far as it was possible to do so, with the brace that the man was wearing when I first saw him. As he also made a good recovery, I am led to conclude that, however valuable complete control over the movements of the spine may be in furthering and perfecting a cure, it is not essential with the view of averting hectic or other ill consequences.

John L., a weaver, aged 30, consulted me on the 24th of September, 1868, on account of scolio-cyphosis, the upper dorsal vertebræ being curved to the left, and the sixth and seventh dorsal spines projecting at least an inch and a half beyond the surrounding level. The left lumbar region was the seat of a hemispherical fluctuating swelling, which was devoid of heat, tenderness, and discolouration, and extended from the spine to the posterior border of the external oblique muscle measuring four by four inches and three-quarters in its vertical and transverse diameters. He was weak and emaciated, having lost nearly twenty pounds of flesh, and had been forced to abandon his occupation.

The previous history, for which and for assistance in carrying out the treatment I am indebted to my friend, Dr. James Graham, was

that, eleven months before I saw him, he began to complain of pain at the seat of the curvature, which soon became constant. Three months subsequently, his attendant discovered what he supposed to be scoliosis, for the relief of which a support was worn. He continued to work on half-time for six months, suffering from occasional aggravation of the local pain, which was much increased by walking. Three months before he came to me, the left loin was the seat of throbbing paroxysmal pain, and at that time he noticed a small swelling, which had gradually increased until it attained the dimensions to which I have alluded.

Under a tonic and supporting regimen and strict recumbency, his appetite soon improved, his suffering abated, and he became comfortable.

On the 4th of April, 1869, or after the lapse of six months, it was noted that "he is again losing flesh and strength; the pain in the dorsal region is severe; the abscess has increased in size; and the skin is thinned and discoloured to the extent of a ten-cent piece towards its posterior limit." It was then discovered that he had been in the habit of sitting up in bed to take his meals, and rising to pass his excretions.

On the 18th of April, a free incision gave vent to a large amount of strumous pus; the dressings were applied in the manner already described; and he was directed to take a grain of opium every six hours, along with quinia, milk punch, and a nourishing diet. One week later the report showed that "the sponge had been changed every day, and the entire dressing every other day. The discharge is abundant; he has had no constitutional disturbance, and is perfectly comfortable."

On the 3rd of May, "he is gaining strength; the appetite is improving, and the discharge is decreasing." From this time until April 8th, 1870, or nearly one year after the evacuation of the abscess, when he left the city, he maintained the recumbent posture faithfully. For several months he had experienced no pain on motion or firm pressure; the affected vertebræ appeared to be firmly consolidated; he had grown quite fat; the appetite was good; all the functions were regular, and the discharge did not amount to more than one drachm in the twenty-four hours.—*Med. News and Library.*

A SIMPLE METHOD OF REDUCING PROLAP-  
SUS OF THE RECTUM.—Dr. J. C. Davis, in the *Hospital Gazette*, says if the patient be a child, place it on its back, flex the thighs and legs at a right angle to the body; let the nurse or an assistant hold them in this position, wipe the mucus or other discharge from the prolapsed part; then take an old handkerchief, or a piece of soft linen or cotton rag, place it loosely over index finger, and introduce it slowly into the rectum: the mucous membrane will adhere to the rag, and the part last descending will be the first to repass the sphincter. Carry the finger the full length up the rectum; then with two fingers of the left hand—one on each side—sustain the gut while withdrawing the finger. To remove the rag, keep up the counter-pressure with the fingers of the left hand, and pull gently, first on one side, then on the other of the handkerchief or rag, and in this way remove it from the rectum. If the patient be other than a child, place him in the "Sim's position" and the same procedure will accomplish the object in view.—*Hospital Gazette.*

NEW METHOD OF COMPRESSING THE COMMON  
ILIAC.—In the *British Medical Journal* of May 18th, Mr. Richard Davy, Surgeon to the Westminster Hospital, describes a method he has adopted successfully for the compression of the common iliac artery in amputation of the leg. A straight lever of wood is introduced *per rectum*, and one end applied to the artery between the lumbar bodies and psoas magnus muscle, the other projecting as a handle. By depressing the handle, the perineal tissues serving as a fulcrum, the common and internal iliacs can be effectually controlled. Mr. Davy believes the method more easy and reliable than compression of the aorta, and that the circulatory system is less seriously disturbed by it. No injury need be done to the rectum if proper care is used.

Dr. M. Mannheimer, of Chicago, has accomplished results in the treatment of whooping cough which are of interest. Dr. Mannheimer has employed intralaryngeal insufflations of a fine powder, composed of equal parts of the sulphate of quinine and white chalk. In nine cases the results were that the average duration of the disease, under this treatment, was six days.

## Midwifery.

THE PATHOLOGY OF MEMBRANOUS  
DYSMENORRHOEA.

BY DR. CORY.

The author related the case of a patient who menstruated first at the age of fifteen, but never passed any membrane till after her marriage, at the age of thirty. Within two years of her marriage she had three miscarriages, all between the second and third months. In April, 1876, she came as an out-patient at St. Thomas's Hospital with subinvolution and retroversion. From this time she almost invariably at the menstrual periods passed membranes which had all the character of the uterine mucous membrane, forming perfect casts of the uterus. The membrane was usually passed on the second day of the period, up to which time she had acute pain. The period continued for two or three days after its expulsion, and was always profuse. On two occasions the membrane did not appear, and on both occasions she had previously been away from her husband. The intervals between the commencement of the periods varied between twenty-five and thirty-one days. The longer the interval, the larger was the membrane passed. She was admitted while menstruating into the hospital, and the period ceased on May 4th, 1877. On the 23rd it recurred, but without any membrane. Iodine was applied to the cavity of the uterus. She re-appeared in February, 1878, and stated that she had been living apart from her husband for nine months, and during that time had menstruated regularly without any membrane. He thought the case favoured the view that menstruation was due to the abortion of an unimpregnated ovum, together with its nidus, the mucous membrane of the uterus. The order of events in a normal menstrual cycle would then be—(1) The arrival of an unimpregnated ovum in the uterus at, or soon after, a menstrual period. (2) The development of this ovum and its nidus, the mucous membrane, up to a certain point. (3) The arrival to maturity of the next Graafian follicle, accompanied towards its completion by ovarian irritation, which being reflected to the uterus causes uterine contraction. (4) The abortion of the old ovum and its nidus, accompanied by a discharge of blood. (5) The rupture of the Graafian follicle and the passage of the new ovum along the Fallopian tube. A microscopic section of the membrane passed in the case reported was shown.—*Obstetrical Journal.*

## Therapeutic Notes.

## EXTRACT OF MALT.

BY E. R. PALMER, M.D.,

*Professor of Physiology, etc., University of Louisville.*

When Extract of Malt was first introduced into this country, I had my attention called to it as a therapeutic agent, but never gave it or saw any one who had taken it. I lost sight of it as a remedy. About five years ago I began to prescribe lager-beer in certain cases, and have had many most admirable results that I could point to as following upon its use. I have found it of marked benefit in duodenal dyspepsia accompanied by constipation and emaciation, both of which it corrects; and also have frequently found it to be a panacea in cases of mental or physical exhaustion, accompanied by fretfulness or irascibility and wakefulness. Only during the year past have I given the Malt Extract; yet the more I give it the better I am pleased with its therapeutic action in certain of the most common chronic maladies. In consultation with a surgical colleague I ordered "Trommer's Extract of Malt with Hypophosphites" in the case of J. S., adult, of strumous habit, afflicted with an old psoas abscess. The patient had taken cod-liver oil previously. The improvement was very marked; the amount of discharge decreased rapidly; with a proportionate gain in flesh and strength, which soon enabled him to return to his bench as a cabinet-maker. When I last saw him, six or eight months ago, he was still taking the remedy in question.

I was called, a few weeks ago, to see Mrs. O., suffering with bronchial catarrh, with a history of previous hæmoptysis. She had taken, under the direction of another physician, eight bottles of the Extract of Malt with Hypophosphites. I asked her what she thought of it, and her reply was, that while it had not cured the cough, it had entirely relieved her of a distressing dyspepsia and nervousness.

Mrs. B., suffering with post-nasal catarrh, dyspepsia, and constipation, is taking the simple Extract of Malt with decided alleviation of all her symptoms, especially her constipation, which was a source of much trouble to her.

Sarah B., adult (colored), patient of Dr. Cotteil, a sufferer from chronic malarial poisoning, and much broken in health, began the use of Malt and Oil, after a long and apparently fruitless course of bark alkaloids. Improvement was rapid and marked, so that she was soon able to resume her duties and go through with the arduous labors of spring house-cleaning.

J. M. H., adult, male, with previous good personal history, but bad family record, was seized suddenly, about six weeks ago, with hæmoptysis. In my absence he got, of Dr. Cottell, fluid extract ergot and gallic acid. The hæmorrhage was checked for a day or two, and then returned; was checked and returned a third time, when he went to bed. He was delirious, and had a temperature of  $103.5^{\circ}$ , and a pulse of 130, night-sweats, and cough, with *subcrepitant rales* throughout the right mammary region. I feared that I had a case of acute tuberculosis, and made a grave prognosis. I ordered carbonate of ammonia and morphia, and after a couple of days changed to syrup of wild cherry and chloral. After three or four days the delirium, which was never marked, passed away, and I ordered Extract of Malt and Oil, to be taken with wine. He protested that he could not take oil. I assured him he could take the preparation ordered. He improved steadily, is out of doors, coughs but little, has regained his flesh and appetite, lost his night-sweats, and expects to go to work at his trade (piano making) in a few days.

Sarah H. (colored), married but sterile, has a strikingly similar history, excepting the delirium. In her case emaciation was very marked, owing probably to the large amount of blood lost. She has taken, so far, four bottles of malt and oil, and is clearly improving in health and strength.

One case more: Mattie M. (colored), a school-teacher, of large frame, weight, before sickness, about one hundred and seventy pounds, developed hereditary phthisis about eight months ago, with all the usual train of symptoms, including laryngitis. She had an emulsion of cod-liver oil (an excellent preparation), with moderate improvement, also Church-

ill's Syrup of Hypophosphites; but the cough and hoarseness, with occasional hæmorrhage, continued. About three months ago I ordered carbolic acid by atomizer for throat, and Trommer's Extract of Malt with cod-liver oil internally, withdrawing all other treatment. In the last two months I have not seen her, except on the street and once in my office. She hardly coughs at all, has regained nearly all the flesh she lost, has no hoarseness, and is regularly at her post in one of our public schools for colored children.

This last I deem the most remarkable case of all reported. The second stage of phthisis was well advanced, and all the graver symptoms which mark it were present. The usual treatment, including cod-liver oil and the hypophosphites, had been faithfully tried, with but slight improvement; while, from the commencement of the use of malt and oil, improvement has been steady and marked.

This has with good reason been called the age of physiological therapeutics. The rapid and practical strides which physiology has of late years been making, are taken advantage of by the therapist as foundation-stones upon which to base a system of rational medicine. The introduction of pepsin into pharmacy was an important practical application of physiological science, as also the more recent use of pancreatine in the administration of cod-liver oil, etc.

The introduction of malt into American practice, which has only become general since home houses have undertaken its manufacture, bids fair to play a more important part in physiological medicine than that of either pepsin or pancreatine.

Extract of Malt is, in the main, two things; namely, digested starch and sugar, and the digester of starch and sugar. Its other ingredients or properties may fairly be said to hold a minor rank in importance to these two qualities.

No class of food is of so great interest to the physiologist as that comprised in the "second class of proximate principles;" namely, starch, sugar, and oils. Of albuminous matter, the necessity and the use are readily apparent; but of these other foods, and especially so of the

two former, to attempt a comprehension of the part which they play in the economy, is to reach beyond the mere matter of tissue-building to the subtler questions that enshroud animal heat, and the other various and complex phases of vital force. Neither starch nor sugar can be considered as belonging to the tissue-making food, so vastly disproportionate are the amounts of them consumed to the mere traces of them which are to be found within the organism. They enter the blood only to disappear from it; and are in constant demand, being largely eaten at each meal. The following tables, taken from Dalton, give some idea of the amount of saccharine and amylaceous food one consumes. And here let me remind, by way of digression, that starch, *as starch*, never gets beyond the alimentary canal; that by digestion it is completely transformed in glucose, or digested sugar, and as such enters the portal venous system. In view of this fact, Flint, jr., does not mention starch as a proximate principle of the human organism, but treats of it as sugar:

COMPOSITION OF WHEATEN BREAD.

Starchy matter (starch, dextrine, glucose).....	56.7
Albuminous matter (gluten, etc.).....	7.0
Fatty matter.....	1.3
Mineral matter (calcareous, magnesian, and alkaline salts) .....	1.0
Water.....	34.0
	100.0

COMPOSITION OF THE POTATO.

Starch .....	20.0
Albuminous matter .....	2.5
Sugar and gum.....	1.1
Fatty matter.....	0.1
Cellulose .....	1.0
Mineral and vegetable salts .....	1.3
Water.....	74.0
	100.0

AN AVERAGE DAILY RATION.

Albuminous matter (grammes) .....	130
Starch and sugar.....	300
Fat .....	100
Mineral salts.....	20
Water.....	2.000

By these tables it will be seen that albuminous matter constitutes rather less than one fifth of the entire food for a healthy adult in active occupation. No words are necessary after these facts, to impress upon the physiologist the paramount importance of starch and sugar as articles of food, and the great necessity for their proper digestion and assimilation. In

the normal processes of digestion, the saliva transforms to a certain extent the starch into glucose; while this act is completed, not (as is stated by most writers on malt extracts) by the pancreatic juice, though this helps a little, but by secretion of the duodenal glands (of Brunner and Lieberkuhn); a viscid, alkaline juice, not copious, but endowed with the power of very rapidly and completely transforming both starch and the varieties of sugar into glucose  $C_6H_{12}O_6$ . The change of starch is a simple one; thus, starch  $C_6H_{10}O_5$ , and water  $H_2O =$  glucose  $C_6H_{12}O_6$ . It is in the region where intestinal digestion is most actively performed. Here the gastric juice finishes its work, aided by the pancreatic juice, which also digests the fat; while many of the ills that are attributed to the stomach, and still more, that are laid at the door of an absolutely healthy liver, arise from disorders of secretion and absorption, in this, which has been aptly called the lesser stomach.

The physician, who, in the management of dyspepsia, addresses all of his treatment to the stomach proper, will quite often meet with cases he can not master. How many such cases there are; cases of duodenal dyspepsia, wherein the doctor having failed in the use of pepsin, and mineral acids, and strychnia, and quinia, deems the liver the offending member, and bends all of his energies to its subjugation. The prevalence of amylaceous indigestion, and, (excluding drunkards) the comparative rarity of liver diseases, are not sufficiently recognized. The cure of obstinate dyspepsia by lager-beer (by no means uncommon), a remedy not at all calculated to benefit the liver, has done not a little toward teaching us to more carefully classify our cases of dyspepsia, and to treat them accordingly.

How far Extract of Malt is of use, and in what class of cases, are questions that time alone can answer for us. In Germany it is firmly fixed in the front rank among remedies. Some idea of what it may be used for, may be gained by the following analysis of one of the brands of American malt:

TROMMER'S EXTRACT OF MALT.

Malt sugar .....	46.1
Dextrose, hopped, extractive matter.....	23.6
Albuminous matter (diastase).....	2.469

Ash	{ Phosphates .....	1.712
	{ Alkalies .....	.377
Water	.....	25.7
		<hr/> 99.958

The first of these ingredients is starch and sugar, ready for absorption. The third (diastase) is the analogue of ptyaline (of saliva) and of a similar ingredient of intestinal juice. It is present, as will be seen, in nearly two and a half parts per hundred. In saliva, ptyaline exists in less than seven and a half parts per thousand (7,352 Dalton.) I speak of diastase as the analogue of ptyaline. If it differs at all in its action from the latter, it is in a greater readiness and completeness with which it transforms starch into glucose. In malt extract, its properties are preserved, and the glucose retains its integrity; while in beer, the process of fermentation has destroyed nearly all of these qualities, and produced alcohol, with, though to but a slight degree, its objectionable features.

Malt extract, with its combinations, has been recommended and deserves a trial in the following diseases: anæmia, chlorosis, marasmus, dyspepsia, neuralgia, insomnia, pulmonary and bronchial affections, dysentery, constipation, scrofula, coalescence from exhausting diseases, etc. It may be had combined with any of the standard tonics or alteratives, for which it makes an admirable vehicle.—*Louisville Medical News.*

ACTION OF PARENCHYMATOUS INJECTIONS OF GLACIAL ACETIC ACID ON CARCINOMA.—Dr. Gies injected diluted glacial, acetic acid (1:3 aq. destil.) into a recurrent carcinoma, as large as a hen's egg, seated in the right side of the inferior maxilla; the injection excited suppuration, and tumor was diminished to the size of a hazel-nut. A primary carcinoma, as large as a hen's egg, situated beneath the ear of the same patient, was treated in the same way, and after 21 days had almost entirely disappeared; 25 syringefuls were injected before this tumor suppurated. A carcinoma as large as a hen's egg, situated in the left breast of a woman, suppurated after 10 injections, and in the course of a month had shrunken to a nodule about the size of a hazel-nut.—*Centralblatt f. Chir., No. 19.*

## A CASE OF CHLOROFORM-POISONING.

BY J. A. LARRABEE, M.D.

A young German woman, aged twenty, in good health and sound constitution, swallowed an unknown quantity of chloroform between the hours of 2 and 3 p.m. Having a short time previous stated that she desired to take a nap no inquiry was made for her until 4:30, at which time she was observed to be sleeping, and was left to finish her nap. At 5 an attempt was made to arouse her, which, on account of the peculiar odor smelt in the room and the deep stupor, awakened suspicion, and a neighboring physician was at once summoned.

Attempts at emesis brought up strong fumes of chloroform, and a strong current of electricity was applied through the pneumogastric and diaphragm. I saw the patient at 7 p.m. The above treatment had been steadily carried out and well directed by the doctor—notwithstanding which I found her quite pulseless and fast sinking. A feeble impulse with a single sound could be heard when the ear was placed over the heart. No apex beat or second sound, and the right ventricle, largely distended, was making abortive attempts at contraction. Nitrite of amyl was placed in the nostrils and forced respiration commenced. Not the slightest observable improvement followed. A sudden change to pallor gave rise to the announcement that she was gone. I now proposed to inject one-tenth grain of digitaline into the cellular tissue over the scrobiculus cordis, and did so; in twenty minutes from this time the heart's sounds were audible, and in thirty minutes my friend counted the radial pulse. This improvement was noticed for an hour, at which time, the circulation again failing, I then injected one-tenth grain more, and left to get supper, Dr. K. remaining. On my return there was not only a good, fair pulse, but the respiration was more thoracic and regular. In order to stimulate the respiratory centres, which evidently were not up with the circulation, I gave one-tenth grain atropia hypodermically, and in another hour the urine was withdrawn, a little more than a pint in quantity. At 11 p.m. respiration and pulse both good; dilated pupil; fixed dryness of mouth.

I met Dr. K. at the case at eight next morning. Nothing further had been done during the night except to induce her to swallow some nourishment, which, on account of the denuded mucous membrane of the throat, was quite impossible. She was quite rational, and evidently chagrined at the result of her foolishness. She admitted to have swallowed the whole quantity purchased, one ounce, of pure chloroform. I have since learned that her recovery was rapid, and not delayed by gastric or cesophageal inflammation, as I feared it would be. A day or two after I saw her she had, I suppose, a hysterical spell of choking.—*Louisville Medical News.*

BELLADONNA AS A STIMULANT TO THE CIRCULATORY SYSTEM.— . . . For my part, I cannot resist the conviction that the best means at present at our command to rouse a patient from severe cholera-collapse, *epidemic or sporadic*, will be the subcutaneous injection of medium doses of atropia with the purpose of stimulating the circulatory system, so that the kidneys and lungs shall be enabled to excrete the poisonous products of tissue-metamorphosis, conjoined with the frequent introduction of small quantities of water into the stomach, in order to relieve the *inspissated* condition of the blood. If vomiting and purging should be persistent, the addition of small doses of morphia to the atropia would appear to me a useful combination.—*R. H. Weber, in Philadelphia Medical Times*

BURNS AND SCALDS. THE ALKALINE TREATMENT. ITS HISTORY.—Following an account of the circumstances which led to the discovery by him of the power of alkalis to promptly relieve the pains and inflammation of burns, he says, "My treatment is to apply to the burned surface bicarbonate of soda in fine powder if it is a wet surface; but if it is a dry burn, use a paste of bicarbonate of soda and water or a strong solution of bicarbonate of soda in water, and apply to the burned surface. This relieves sun burns, as well as burns from hot coals, melted sulphur, hot iron, steam, etc."

N.B.—Always dispose the burned surface so that the blood can gravitate towards the heart, if possible, as otherwise a continuous pain may be felt, due to the dilatation of the blood-vessels from the weight of the contained blood.

"If bicarbonate of soda is not at hand, bicarbonate of potash is the next best; biborate of soda does as well, but is not often found handy."

## Original Communications.

### REPORT OF THREE CASES OF PUERPERAL ECLAMPSIA AND ALBUMINURIA.

BY L. M'FARLANE, M.B., TORONTO.

(Read before the Toronto Medical Society, June 27th.)

Case 1.—Mrs. C—, aged twenty-seven; primipara; in the eighth month of pregnancy; enjoyed good health up to the time I was called to see her. On the day previous to her illness she walked several miles and returned late in the evening. Before retiring, she partook of some food, after which she went to her bedroom, and was taken with vomiting, violent pains in the head, and blindness. A few minutes after going to bed a severe convulsion came on, "which, I was informed by her sister, a very intelligent lady," lasted for upwards of two minutes. On my arrival, about two a.m., I found that she had recovered from the first fit, and on asking her a few questions, ascertained that she was not aware of having had a fit, and expressed surprise that I had been sent for. While talking to her a second fit came on, which lasted fully two minutes. The head and eyes being turned to the right, the face and neck extremely livid, the pupils dilated. The convulsions affected both sides of the body alike: pulse 90, full and soft; breathing labored; skin hot and dry. After the fit I commenced to administer chloroform, and sent for Dr. Winstanley, who arrived shortly after. The chloroform was kept up, but had not the effect of warding off the fits. They returned at regular intervals of about one hour and a half. On making an examination per vaginam, the external os was slightly dilated, but rigid: labour pains had not come on: I therefore injected about gr. 1 of ergotin under the skin, which appeared to bring on the pains.

Dr. Hodder, who had formerly been the family physician, was sent for and brought Barnes' dilators which were used to dilate the os. When it was sufficiently dilated to admit the forceps, they were used, and the child, a fine healthy female, delivered. The convulsions continued at regular intervals till the birth of the child, notwithstanding the constant admin-



istration of chloroform. It was now decided to give an enema of 20 grs. of chloral, with ʒss. of brandy and six oz. of milk, which was accordingly done. Drs. Hodder and Winstanley now left, and I remained with my patient.

After they left, the fits became more frequent and violent. Seeing that the patient was threatening to collapse, "the chloroform and chloral appearing to exert no beneficial effect," I decided to try the effect of morphine, and consequently inserted half a grain under the skin of the arm, and in about ten minutes afterwards a fit came on which proved to be the last. the patient passing into a quiet sleep, which lasted for several hours.

On awaking from the sleep, she took some milk and chloral: she was perfectly blind and partially unconscious. Convalescence slowly took place, the blindness continuing for four days. The kidneys during this time secreting a very small quantity of urine, which was loaded with albumen. There was a good deal of œdema of the face and legs, which gradually disappeared as the kidneys began to act properly.

Case 2.—Mrs. J——, aged thirty, pregnant with her third child, enjoyed moderate health up to the third of January. On that day, as I was passing, she called me in to engage me to attend her in her confinement, which she expected would occur in the following month. While talking to her, she complained of pain in the stomach, which she attributed to flatulence. Seeing that there was a good deal of œdema of the face and hands, and fearing that I might have a similar case to that of the first, I ordered her a saline purgative.

On the following morning, her husband came for me, telling me that she had suffered all night from vomiting and violent pains in the head: I told him to return home and that I would be there in a short time. In about twenty minutes, or half an hour, he returned and told me his wife had a fit. On my arrival, I found Dr. King there: he was administering chloroform: he informed me that she had three fits since he arrived, and a few minutes after I entered the room, she took a most violent fit: the face was completely turned on to the pillow, the face and neck became extremely livid, the

eyes were turned up, and the conjunctivæ were suffused. There was grinding of the teeth, and froth and blood issuing from the mouth: the fit lasted for upwards of three minutes. After the attack, the pulse was 110, and the breathing stertorous, the pupils slightly contracted. I at once decided to use the morphine, and injected half a grain under the skin, which arrested the convulsion.

On making an examination per vaginam, I found the external os dilated to the size of a twenty-five cent piece and dilatable, the head presenting. The labour pains were recurring regularly. As soon as I could reach the membranes, I ruptured them, and shortly afterwards the os was sufficiently dilated to admit the forceps, which I applied, and delivered the child, who was alive and healthy. When the head was pressing on the perineum, a convulsion came on, but lasted only for a short time. However, I repeated the injection of morphine, which prevented a recurrence of the fits. The subsequent treatment was by chloral and bromide of potass. The blindness continued for three days. The urine was secreted in small quantities, and became almost solid by heating.

Case 3.—Mrs. G——, aged twenty-four, primipara. She had been for about a week before the attack, suffering from headache and sleeplessness, but did not consider it sufficiently serious to have advice. There was a good deal of œdema of the face, and hands, also of the feet.

About two a.m. on January 23rd, a young lady who was stopping with her (her husband being absent in St. Johns, N.B.), was awakened by hearing her breathing very heavily, and, on lighting the gas, discovered that she was in a fit. I was immediately sent for, and arrived about three a.m. I was informed that she had five fits before I got there. I found the pulse 98 per minute, frequent and small. The breathing stertorous, skin hot and moist, froth and blood at the angles of the mouth. I had not been there more than five minutes when a most violent convulsion came on. The head and eyes were drawn to the right side. The muscles of the arms, legs, and body were perfectly hard. The pupils dilated, the face extremely livid, froth and blood exuded from the

mouth. The fit lasted about three minutes :—on recovering from it, the breathing was stertorous, the pulse 115 per minute, frequent and small. I now introduced half a grain of morph. sulph. under the skin, which completely arrested the fits. I sent for Dr. Winstanley, who brought Barnes' dilators, which we used to dilate the os and cervix : when sufficiently dilated, the forceps were applied and the child, a fine, healthy boy, delivered.

The œdema in this case was greater than in either of the others : convalescence was also slower : the blindness continuing for ten days and consciousness only partial during that time. The secretion from the kidneys was very scanty, and became almost solid by heat.

Before concluding this paper I would like to call the attention of the society briefly to the essential pathology of this most terrible disease as reported by Dr. Angus McDonald, Clinical Lecturer on the Diseases of Woman, Royal Infirmary, Edinburgh.

Two cases of death occurring in his practice from puerperal eclampsia, a most careful post-mortem examination was made in both cases by Mr. D. J. Hamilton, Pathologist to the Royal Infirmary, when the following pathological conditions were found :—

1st. Intense congestion in the meninges and engorgement of the venous sinuses on the inner aspect of the cranium and spinal canal.

2nd. Intense anæmia of the deeper portions of the brain, and especially of the collective motor centres, including the cord.

3rd. Complete absence of any evidence of this anæmia having been preceded by cerebral œdema, as the Traube-Rosenstein theory of puerperal convulsions predicates.

4th. In the portion of the medulla oblongata between and down to the level of the middle portions of the olivary bodies, and also in the olivary bodies themselves, there were discovered vascular and extra-vascular changes, indicative of commencing inflammatory change.

5th. There was observed a limited extravasation of blood in the anterior portion of the right corpus striatum where it dips down to form the nucleus lenticularis.

6th. It is at the same time to be noticed that all these changes occurred, although the cere-

bral bloodvessels, and indeed the entire vascular system, was found to be peculiarly healthy.

7th, *Kidneys*.—He contends that the essential element in the pathology would seem to be reduced to a condition of over-action of the vaso-motor centres, from the stimulating action upon them of a blood rendered impure through retention of the collective excrementitious matters, which the kidneys ought to have removed. The naked-eye appearances of ordinary parenchymatous nephritis were found ; but, on microscopic examination, something entirely different was detected. This consisted of degeneration of the epithelial cells of a certain proportion of the tubules in the circumferential aspects of the cortex. The degeneration appeared to be of a colloid nature. The products of these degenerated cells ran down and blocked up, more or less completely, the other convoluted and straight tubules, so as to render them functionally useless, although their tissues were not diseased.

8th. Throughout the body the general appearance, with the exceptions stated, coincides with those ordinarily found where death results from puerperal eclampsia. Thus the liver and lungs, and other internal viscera, were seen to be markedly congested, &c. By this over-stimulation there is produced a high degree of anæmia of the deeper cerebral regions and central portions of the cord, and coincidentally, a collection of the blood in the venous sinuses within the cranium and the spinal cavity and in the meninges. This effect of blood-supply is at the same time aided by the peculiar conditions of the venous and blood-vascular systems conditioned by pregnancy. It appears that he accepts the old toxæmic theory as after all the most reasonable, that the poison acts by irritation of the great vaso-motor centres for the body in the medulla oblongata, thus producing spasm or general arterial contractions acting centrifugally. However, I must confess that I am more disposed to accept the theory of Traube as applied to puerperal convulsions by Rosenstein, viz., that uræmic convulsions, occurring in the pregnant condition, result from cerebral anæmia, which, again, is a consequence of cerebral œdema. The explanation of how this condition is brought about is as follows :—The

blood of pregnant women is normally increased in quantity, but of defective quality, being, in fact, too watery. It is, moreover, propelled under increased tension, inasmuch as the left ventricle of the heart hypertrophies during pregnancy, especially during its latter months. If now to those conditions kidney lesion is super-added, with its deteriorating effects upon the blood and its influence in the development of cardiac hypertrophy, we have produced a state of matters that presents us with a large amount of blood of defective quality circulating in vessels subjected to a very high tension. The result of this, according to the Traube-Rosenstein theory, is that we have first produced cerebral hyperæmia. This leads to effusion of serum from the watery blood into the cerebral tissues. So soon as the œdema has thus been produced, it reacts, from the incompressibility of the fluid composing it, so as to prevent the dilatation of the cerebral vessels traversing the œdematous areas, and anæmia is the result. If this occurs in the cerebrum, according to our authors, we have coma; but if it arises in the motor centres, we have convulsions.

My reason for being more disposed to accept the Traube-theory is the fact, that in the three cases above reported there was more or less œdema of the face, hands, and feet, also of the areolar tissue of other parts of the body. Now if it is possible to have general œdema of the surface, it is quite natural to suppose that we can have effusion into the cerebral substance. Seeing that, according to both theories, the defective quality of the blood is admitted, also the hypertrophy of the left ventricle of the heart, and, in consequence of the hypertrophy, increased tension of the vessels of the brain.

However, Mr. President, my object in presenting the above cases was not so much to enter into the essential pathology of the disease as to bring before the society the treatment adopted. It will be seen that in the first case the chloroform got a fair trial, inasmuch as the patient was kept under its influence for upwards of six hours, without apparently producing any beneficial effect except probably to increase the interval between the attacks. The chloral was not kept up, consequently, I cannot speak so confidently of its effects, but, judging

from the results in the two cases reported by Dr. A. McDonald, I am inclined to think that it is not to be depended on. Morphine, I believe, is the drug, above all others, from which the best results may be expected, its effect in my cases was so marked and prompt as to convince me of its efficacy in the treatment of this most terrible and fatal disease. It will be noticed in the first case that after the continued use for several hours of the chloroform the convulsions became more frequent and severe and the patient was rapidly sinking, but after the first injection of the drug the fits were completely arrested. In the other two, a like satisfactory result was obtained, although up to the time the morphine was used the attacks were both frequent and violent.

The question naturally arises as to the *modus operandi* of morphine in puerperal convulsions. If we accept the theory of Dr. McDonald, viz., that they are produced by over-action of the vaso-motor centres in the medulla oblongata, then I think that it is only reasonable to suppose that the drug produces its therapeutic effects by lowering the vaso-motor action and thus arresting the spasm which prevents the blood from entering the capillaries. On the other hand, if the Traube-theory is correct, the action of the medicine must be to quiet the excessive irritability consequent upon the extreme anæmia of the brain and the action of the impoverished blood which has been circulating through the brain prior to the production of the anæmia. Whatever view may ultimately be taken on these points, it is sufficiently obvious that the existence of albuminuria in a pregnant woman must constantly be a source of much anxiety to the practitioner, and should serve as a warning to him that there is danger ahead, and that it is necessary to put his patient under treatment, and watch her symptoms very closely. If this course is pursued, I believe many of the cases which occur and cause so much anxiety to the patient's friends, and especially to her accoucheur, may be prevented.

Dr. Osler, Professor of Physiology in McGill College, Montreal, has been admitted a Member of the Royal College of Physicians, London, England.

## CLINICAL LECTURE ON EXAMINATION OF URINARY CALCULI.

*Delivered at St. Thomas's Hospital; by*

WILLIAM M. ORD, M.D., LOND., F.R.C.P.,

*Physician to the Hospital and Lecturer on Medicine in its Medical School.*

GENTLEMEN,—The recent occurrence in our practice of several cases in which calculi were either passed from the body or were found after death, has induced me to devote a lecture to the consideration of the analysis of calculi from the practitioner's point of view. That is to say, I wish to show you how much may be done without the assistance of a laboratory by any surgeon or physician who will provide himself with some simple apparatus, and give a little thought to the matter. So much may be learned from the examination of calculi, that it seems to me a serious default when they are put aside as though beyond the range of the general practitioner, and relegated to the chemist or the specialist. Every one of you ought, and I hope will be able when the responsibility of practice comes upon you, to decide as to the composition of any calculus.

In the first place, I have laid out on the table the simple apparatus which is required. The whole can be bought for a few shillings, (if we except the microscope) and most of it will be useful in the daily examination of urines, a necessity now-a-days, and neither a mystery nor a luxury.

A spirit lamp, and a Bunsen's burner, fitted by india-rubber tubing to your gas-burner; a small sheet of platinum foil and a sheet of fine platinum wire; blow pipe and iron tongs; a dozen test tubes; two small funnels and filter-papers; two or three beakers; two or three test-glasses (four ounce); a porcelain capsule or small excavating dish; pestle and mortar; test papers; reagents; strong nitric, sulphuric, hydrochloric, and acetic acids; liquor potassæ, phosphate of soda, ammonia, chloride of sodium, oxalate of ammonia, distilled water; together with a microscope having a good one-fourth inch objective, such as may now be obtained

of many makers in London at a cost of from six to eight guineas.

You will first take the calculus into your hands and feel its consistence and apparent specific gravity. Phosphatic calculi are comparatively light, oxalate and carbonate of lime, heavy. You will feel if it is hard or soft; and note if it be round or angular, smooth, or rugged. If round or oval, without faces or angles, the calculus was probably solitary; if faceted, multiple; if more angular, it may be the result of fracture within the bladder. Uric acid and phosphates form smooth calculi; oxalate of lime, dark rugged or tuberculated calculi, (mulberry).

The next step is to make a section through the calculus;—easily done by a fine saw, or by a lapidary. I usually avail myself of the aid of the lapidary to get one of the section surfaces polished as far as may be. The section should go through the very centre of the calculus,—you will then be able to form some opinion as to the homogeneity of the calculus. Very frequently the centre or nucleus is of one composition, and the bulk of the surrounding deposit of another, and not seldom you will find more than two distinct stratifications. In the subsequent processes you must be careful to submit to separate examination portions of all parts which have a different appearance from the rest, and generally you will find it desirable to satisfy yourselves as to the composition of the nucleus and the mass respectively, very often of the outer crust also.

You will now break off a piece of the mass, or extract a fragment from the nucleus and reduce it to powder in a clean mortar.

A. Place some of the powder upon clean platinum foil, and hold it with the tongs first over the flame of a spirit lamp, then over the Bunsen, and if necessary apply the blow pipe.

*The substance is either in great part consumed, or remains unconsumed.*

By this simple process the matters occurring in calculi are at once divided into two groups. The following list exhibits them arranged according to their comparative frequency of occurrence, the most common being written in large type, the least common in very small.

## I. CONSUMED IN GREAT PART.

URIC ACID ( $\begin{matrix} \text{C}^{\text{HNO}^+ \\ \text{H}^{\text{O}} \\ \text{O}^{\text{HNO}^+} \\ \text{O}^{\text{HNO}^+} \end{matrix}$ )

URATE OF AMMONIA.

URATE OF SODA OR LIME.

XANTHIN ( $\begin{matrix} \text{C}^{\text{HNO} \\ \text{H}^{\text{O}} \\ \text{O}^{\text{HNO}} \\ \text{O}^{\text{HNO}} \end{matrix}$ )

FIBRIN.

BLOOD

CYSTIN ( $\begin{matrix} \text{C}^{\text{HNSO} \\ \text{H}^{\text{O}} \\ \text{O}^{\text{HNSO}} \\ \text{O}^{\text{HNSO}} \end{matrix}$ )

UROSTEALITH. }

MYELIN. }

INDIGO-BLUE ( $\begin{matrix} \text{C}^{\text{HNO} \\ \text{H}^{\text{O}} \\ \text{O}^{\text{HNO}} \\ \text{O}^{\text{HNO}} \end{matrix}$ )NOT CONSUMED.  
PHOSPHATE OF LIME.

TRIPLE PHOSPHATE.

OXALATE OF LIME.

CARBONATE OF LIME.

strong nitric acid is added. Heat being applied, a brisk effervescence ensues, and when this is over, heating is continued so as to drive off the nitric acid without producing any charring of the solid residue. When no more nitric acid vapour is emitted, a drop of liquor ammonia is added, and if uric acid be present an intense crimson-purple colour is produced. Very often this tint is faintly seen before the addition of ammonia, either because ammonia was already present, or because the heating process has been a little too rapid, and has produced some decomposition.

If the presence of uric acid is declared, further tests are required. It may be pure, or combined with ammonia, potash, soda, or lime.

(a) For ammonia. Place some of the powder in a small test-tube, add liquor potassæ, and heat gently. If ammonia be present it can sometimes be detected by its smell; or in smaller quantities, by placing a rod, dipped in strong hydrochloric acid, at the mouth of the tube; when, if ammonia be present, the white vapours of chloride of ammonia will be produced. This process must be very cautiously carried out. If the heating be intense or prolonged, uric acid is decomposed by the potash, and ammonia is evolved.

(b) For soda, potash, and lime, the ash left after calcination should be submitted to the blow-pipe, and the colour of the flame observed,—yellow, in the case of soda; purplish blue, with potash; reddish purple, with lime. If they are present together, the blow-pipe may be supplemented by the spectroscope. For this, and like purpose, I usually carry a little spectroscope in my pocket, but would scarcely advise you to include it among your apparatus at first.

But here comes in the use of the microscope. You may make some excellent determinations here, by noting crystals thrown down from distilled water in which some of the powder of the calculus has been boiled for a few minutes. The liquid having been filtered, is left in a cool place for a few hours, and if there be uric acid or urates present they will be found as a deposit, and can be submitted to microscopic examination. Uric acid then occurs in flat quadrangular, somewhat elongated plates, look-

Organic Cement either albuminous, mucous, or horny.

The volatile substances usually have some small quantity of earthy matter, and the fixed substance some quantity of animal matrix in combination. So that most commonly there is associated, with the substances in the left hand column, some fixed, and with those in the right, some volatile constituent.

B. The calculus is chiefly volatile. Note the behaviour of the substance during heating. It may give off some distinctive odour; it may simply vanish: it may blacken; it may fuse; it may give off smoke; it may burn with thick smoke.

(a) Uric acid and urate of ammonia simply blacken and disappear without fusing or giving off any marked smoky vapour or smell.

(b) Xanthin fuses, blackens, and is then consumed.

(c) Fibrin burns with a smoke like that of burnt feathers, leaving a considerable ash of phosphates.

(d) The substances included under the name of "urostealith" (and "myelin") burn like camphor with a smell like that of burning fat.

(e) Indigo sublimes, the vapour burning with an odour of its own, partly like that of soot, partly like that of burnt feathers.

(f) Cystin fuses, blackens, and volatilizes with a faint sickly odour, which is very persistent.

C. In the case of both volatile and non-volatile calculi, uric acid should next be specially sought. For this the murexid test is used. A small quantity of the powdered calculus is placed in a porcelain capsule and a drop of

ing like glass paper weights. If a little ammonia is combined, exceeding large and thin lancet ended plates will be found, with an equivalent of ammonia or soda fine needles often gathered into radiating tufts, with lime much coarser, thicker and flattened prisms, gathered into tufts and crosses. The great value of the microscope as an aid to chemical research cannot be too strongly insisted on. You will find it help you at every step if you will avail yourself of it.

The murexid process incidentally gives information about *cystin* which after evaporation leaves a dark brown residue, soluble in liquor ammoniæ; and *xanthin*, a very rare substance allied to uric acid which, first swelling up, leaves a yellow residue after the action and evaporation of the nitric acid, giving us pink or purple with ammonia; but dissolving in liq. potassæ with a yellowish-red colour, turned to violet-red by heat. The yellow mass is insoluble in solution of carbonate of potash.

D. Guided by the foregoing tests, we can apply further reactions to the volatile substance.

1. For fibrin we apply liq. potassæ, in which that substance dissolves after swelling up a little. The solution is precipitated by acetic acid or by ferrocyanide of potassium with acetic acid.

If the fibrin be combined with blood, the microscope will often detect traces of corpuscles, or failing this, the presence of blood-pigment may be revealed by the hæmin test (Teichmann's). To some of the powdered calculus some well-dried chloride of sodium is added in about equal proportion. To a grain of this spread upon a microscopic slide, add strong acetic acid, cover with thin glass, and apply heat till ebullition is produced. On cooling, crystals of an elongated rhombic prismatic shape with rounded angles, and of a dull brownish colour will be found if blood is present. If the acetic acid should have been driven off by the heat, a little glycerine or strong solution of acetate of potash must be run in between the covering glass and the slide. A permanent preparation may thus be made. For cystin the special tests are, first, solution of ammonia, which dissolves the

substance, and in evaporation leaves transparent, colourless, six-sided tablets. Neutralization of the ammonia by acetic acid causes a similar precipitate, but usually in less perfect form. Mineral acids dissolve the substance, a reaction which at once distinguishes it from uric acid.

Under the head of *urostealith* several substances are most probably included; among them, first, a fatty matter, saponified by alkali, and precipitated by subsequent additions of acid. Second, a substance of high molecule, containing much phosphorus. Both of these burn, as has been stated, with a large smoky flame. The second formed the greater part of a soft solid, sent to me a little while ago for examination. It had been passed by a gentleman who had stricture. The substance burned like camphor and was supposed to be caoutchouc derived from a catheter retained in the bladder; but a little examination dissipated this idea. The matter being volatile and dark coloured, the hæmin test was used. It was then seen that one portion threw out long hollow tubes, something like nerve-tubes. These were exactly like tubes thrown out, as Dr. Montgomery showed a few years ago, by the substance which he called Myeline on contact with water. "Myelin" is an alcoholic extract of yoke of egg, and is a complex phosphorized body, like, if not identical, with lecethin and the substance called kephalin by Dr. Thudichum. Both myelin and kephalin when placed dry in a slide and moistened with water, are seen, under the microscope, to send out an abundance of transparent hollow processes having great refractivity. The substance therefore agreed with them in this as well as in the way of its burning and in solubility in hot alcohol. A more thorough investigation of urostealiths will probably bring out the presence of similar bodies.

Last among the volatile substances I have put indigo. This has been as yet found only once, and by myself.

The calculus yielding indigo is before you. It was removed from the pelvis of the kidney. The tests for indigo are:—

1. The presence of black, blue, and coppery pigment in the powdered calculus.

2. The sublimation of the indigo-blue by a gentle heat, and the collection of the characteristic crystals on a clean glass slide. Here, under one microscope are sublimed crystals from the calculus; here, under another sublimed crystals from commercial indigo; you will see at once their identity, and see a ready mode of recognizing indigo. The behaviour of the vapour is very marked. The perfectly dry powder is placed in a perfectly dry test tube, and very slowly heated over a spirit-lamp. At a heat short of redness, a vapour of a deep violet colour is emitted, rather more purple than iodine vapour. It lies heavily in the tube, and on removal of the heat at once condenses, partly on the tube, partly on the powder. I make this experiment before you, and now show you with a two inch lens the tufts of blue flat prism on the glass.

3. Indigo blue can be dissolved, unchanged, in strong sulphuric acid, yielding a blue solution. This solution is permanent if undiluted. If diluted, it gradually deposits the indigo there. The spectroscope shows a band in the yellow, characteristic of indigo, as you may see here on comparing a solution of the calculus with a solution of indigo. Here are often blue and purple solutions, which give very different bands in blue and red, as well as in yellow.

D. The calculus being chiefly or entirely composed of non-volatile matter, further tests are used.

1. The ash left after incineration may be fusible or infusible.

(a) Fusible. Soluble in acetic acid; and precipitable from solution by excess of ammonia. *Triple, or ammoniaco-magnesian phosphate*. If the neutralization be very cautiously performed, crystals of the triple phosphate ("house-tops") will be thrown down, and can be recognized by the microscope.

(b) Infusible. Add acetic acid very slightly diluted. If soluble with effervescence, the substance was, before incineration, either *oxalate or carbonate of lime*. The presence of lime made evident by a precipitate with solution of oxalate of ammonia. If not soluble in acetic acid, but soluble in hydrochloric acid, add to the solution excess of ammonia. A deposit indicates *phosphate of lime*.

2. The foregoing examination will leave the question of oxalate or carbonate of lime unsettled. Powder some of the calculus, and add acetic acid. If solution with effervescence, *carbonate of lime*. A possible source of error here is the use of glacial acetic acid, which, without dilution will fail to dissolve carbonate of lime. And in rare cases the presence of organic matter appears to prevent the action of the acetic acid. Ammonia added in excess throws down triple phosphate if present. If no solution, add hydrochloric acid. To the solution thus obtained add ammonia in excess with great caution, and examine the precipitate with the microscope. *Oxalate of lime* will be found in octohedra, phosphate in prisms.

By one and two in conjunction, the presence of carbonate, oxalate, and phosphate of lime, and of triple phosphate may be determined.

3. The action of hydrochloric acid in the preceding stage leaves often an insoluble residue. This may be:—1. "Matrix" or cementing organic material. 2. Uric acid or other insoluble organic matter, such as pigment. 3. Foreign bodies, such as microscopic fungi.

The uric acid is often found in spherical forms, and is recognized by its solubility in solution of potash. This part of the examination is often of importance in determining the origin and history of the calculus, particularly by showing the form of the matrix, which, under the microscope, often retains the impression of the shapes imbedded in it.

4. It is often convenient, in dealing with complex calculi, to examine the powdered calculus, even though of insoluble kind, mixed with water under the microscope.

(a) We can see whether the earthy matter is in the form of crystals, spheres, or molecules.

(b) We can detect pigment.

(c) We can apply acids and alkalis to the substance and watch their action.

5. Similarly in the case of soluble uric acid or urate calculi, we can add weak solution of potash to the powder under the microscope, and examine for organic forms, particularly of fungi. These are often to be found with mixed urates, and throw light on the state of the urine and urinary organs at the time when the concretion was formed.

The microscopic examination, directed in the last paragraph but one, has a much more important object than might be at first supposed. The researches of our valued teacher, Mr. Rainey, have proved that inorganic matter, when deposited in colloids, assume spherical instead of angular crystalline forms, and moreover, tend to cohere into masses instead of forming sand. In a long series of investigations founded upon the principles enunciated by Mr. Rainey, I have been able to show that the presence of colloids in urine determines changes in the form of the crystalline matters deposited. That, for instance, the form in which uric acid is deposited from urine is not its form, but is a departure from that form in the direction of sphericity. Pure uric acid, which is colourless, has the form of perfectly rectangular oblong plates. Uric acid, as deposited from urine, is always coloured, and has the form of a rhombohedra with rounded obtuse angles. The colour is due to the pigment of the urine, a colloid of high molecule, which has a remarkable affinity for uric acid, and dyes it, so to speak. If the colour be separated the uric acid reverts to the rectangular form. If much mucus or albumen be present in urine, the change toward sphericity is greater, and we may have cask-shaped bodies, dumb-bells, or even globules of uric acid, when the quantity of colloid present is large. Extending this principle to calculi, we find that in almost all cases the earthy or properly crystalline materials are rounded, or spherical, and are also strongly cemented together. Such results have been obtained by me, synthetically, while Dr. Vandyke Carter has, in a perfectly independent piece of work, shown the same, analytically. I here show you for comparison plates of Dr. Carter, illustrating the forms of oxalate of lime found in calculi, and plates of oxalate of lime as variously altered by colloids, published by myself in 1871 in the St. Thomas's Hospital reports. Dr. Carter states that his drawings were made before he had seen mine, and you will agree that the coincidence is remarkable. The practical issue here is the recognition of the fact that, even if the urine contain habitually much crystalline matter, the danger of

calculous formation is not great unless there be catarrh or albuminuria. As regards oxalate of lime, it is, however, certain that very little colloid cement is necessary. Hence the frequency with which this substance forms small calculi in the pelvis of the kidney. Hence we will look to two things, the prevention of the deposit, and the prevention, as far as may be, of the persistence of catarrhal affections of the urinary passages. The first every one naturally regards, the second, less known as a cause, will, I trust, receive more attention in the future. In conclusion, I trust you will have seen how much can be done with a few appliances, and how much subject for thought and possibility of useful investigation is opened up thereby.

**MYOSITIS OSSIFICANS.**—At the Vienna Medical Society, Docent Dr. Nicoladoni presented a girl, seven years of age, as an example of a very rare affection of the muscles, viz., ossification of the muscles of the trunk and limbs. The disease had been going on for about a year, commencing in the muscles of the neck, whence it extended to the spine, the anterior part of the thorax, and the limbs. On each side of the spine a rigid line (sacrospinales) extends. The scapula is fixed to the thorax; and in the cervical regions are found fibrous cords containing bony plates. The right knee-joint is contracted, and the pectorales are almost entirely ossified. There are only three similar cases on record.

Dr. Schoeler presents the history of a case in which, for the first time, the cornea of a dog was transplanted into a human eye successfully. After the insertion of the cornea into its new position, the wound was entirely covered with flap of conjunctiva. Six weeks later a peritomy was performed, so as to cause the disappearance of this artificial pannus. The result was so far successful that the patient was enabled to recognize the movement of the hand at six inches. Several cases, showing the advantages of conjunctival flaps in the treatment of wound of the sclerotic, are narrated.—*Medical Record.*



## CLINICAL REMARKS ON CATARACT AT THE TORONTO GENERAL HOSPITAL.

BY R. A. REEVE, B.A., M.D.,

Oculist to the Institution.

(Continued.)

SOFT CATARACT—(*Keratonyxis*).—Here is a child, *æt.* two and a-half years, the pupil of whose right eye has appeared milky at least one and a-half years, the mother says; and you see that there is also a slight squint. The right pupil is but little larger than the left, and nearly as active, and the opacity seems in contact with its posterior edge. The anterior chambers are of equal depth, and the tension of both eyes is alike, the globes dimpling under very slight pressure. Having dilated the right pupil, we find that the normal reddish reflex from the fundus cannot be seen with the ophthalmoscope, and the lens appears uniformly opaque; and there is no shadow cast by the iris into the lens under oblique illumination, shewing that it is involved up to the anterior capsule.

Since the crystalline lens is quite soft during adolescence, and comparatively so, indeed, up to the age of thirty or thirty-five, this case should be termed *soft* cataract. The cause cannot be determined in this instance, but the affection is probably congenital, although not hereditary. Congenital cataract, which is generally double, is not unfrequently hereditary; and I have seen a mother and three of her children apply together for the treatment of cataract. In some of the cases developed *in utero*, the lenticular opacity occurs with changes in the deeper tissues, and the sight is very defective or but little better after the removal of the cataract. But it is not advisable to wait until a child is intelligent before deciding to operate, for more or less amblyopia or defective sight may result from prolonged functional disuse of the retina, especially where owing to the opacity of the lens and the want of the proper visual impulse, a secondary squint develops. On the other hand, be certain before operating that the lens is diffusely cloudy and all its tissue involved, the eye otherwise appearing normal; for there is one form of congenital

cataract in which the lens itself should be left intact.

And, again, glioma of the retina, a malignant disease, sometimes simulates cataract. Glioma may be distinguished, however, by the bright yellow-white reflex from the depths of the eye, the pupil being more or less enlarged and sluggish or fixed, the anterior chamber possibly shallow, and the tension, as a rule, increased.

[*Double Glioma of Retina*.—Boy, *æt.* three, well-nourished, but uneasy and fretful for the past year without apparent cause; left pupil "got larger than ordinary, one year ago," after inflammatory symptoms, and six months ago, "quite large, and eye looked hollow. You would fancy you could see the back or bottom of the eye, which looked as the right does now, yellowish-gray, with red veins on it." Six weeks ago the right pupil first shewed the peculiar appearance of the left; and the child has since stumbled, the sight being much worse. Right eye—externally normal, but with glistening "creamy" reflex from a large part of the fundus, the retinal vessels being well seen on the pale, raised background by means of the ophthalmoscopic mirror alone. Left eye—episcleral vessels enlarged; pupil widely dilated and fixed; anterior chamber, shallow; lens, transparent, or only slightly hazy, but seemingly opaque, the anterior part of the vitreous having a gray look with a brighter, yellowish appearance shewing through; eye glaucomatous, dimpling only on *firm* pressure; motion of eyes perfect. No family history of cancer.]

You need hardly be reminded that the term "cataract" as popularly given to opacity of the cornea from old ulceration,—leucoma, when dense; nebula, when merely hazy, is a misnomer; though, of course, cataract may accompany or complicate this condition.

We shall treat this case as soft cataract is usually treated, viz., by *keratonyxis* or needling; (formerly, *scleroticonyxis*, because sclerotic was pierced); also styled *discission*; and *solution*, advantage being taken of the fact that the aqueous humor will attack and dissolve the lens when it is unprotected by its capsule. Several operations are necessary; and on the first occasion it is well simply to prick the lens at its centre. In the second needling the capsule may be torn a little and some of the lens broken up; and in the succeeding ones a freer division of the capsule and lens should be made. From three to six needlings may be

required, at intervals of from two to four weeks or more, time being allowed after each operation for the disturbed lens substance to be dissolved before another needling is done. The pupil must be widely dilated before operating, and its full dilatation kept up afterwards, by instillations of solution of atropine sulph. grs. 2 to 4, ad  $\bar{3}j$ . two to four times a day, or p.r.n., for a few days.

[There seems to be some misconception in regard to dilatation of the pupil: The pupil is fully dilated only when its area nearly equals that of the cornea, the iris being reduced to a narrow circular rim. Sometimes after keratonyxis, and always after extraction, the pupil contracts somewhat owing to the escape of the aqueous, &c., and the aim should be to restore full dilatation—approximately at least—as soon as the anterior chamber is re-established, so as to prevent, if possible, engorgement of the iris, iritis, &c.]

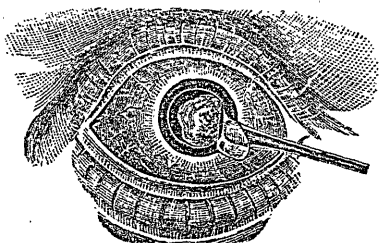
If the eye becomes hard, either the aqueous should be let out by what is termed *paracentesis corneæ*, the anterior chamber being tapped by passing a broad needle through the cornea near its periphery below or at the outer side; or, preferably in most instances, the cataract should be removed by *linear* extraction. If after the lens has been got rid of, the posterior capsule is found opaque (secondary cataract), it should be divided with a needle as soon as the eye is free from irritation.

October 9. First needling done; child under chloroform; pupil fully dilated; lids separated by spring stop speculum; eye lightly steadied by forceps; fine cataract stop-needle passed with a light jerking movement through the outer part of the cornea, made to enter the centre of the lens, and rapidly withdrawn from the eye, which was then closed with straps. The mother was instructed to apply the atropine on the same evening, and afterwards three times a day, or often enough to maintain full dilatation. October 12. "No reaction; no ciliary congestion; pupil well dilated; tension normal. October 30. Keratonyxis repeated. November 20. Third needling done. January 4. Fourth needling. February 12. The secondary opaque capsular membrane remaining after absorption of the the lens was divided with the needle. February 15. The

patient discharged with a large clear central pupil. Atropine to be stopped in a few days.

*Linear Extraction.*—Here is another case for your inspection; patient, æt. 13. The corneæ appear alike normal, the irides healthy, and the pupils circular, active, and black. The vision of the right eye is  $\frac{20}{22}$ ; that of the left,  $\frac{3}{7}$ , but with a strong lens, +  $3\frac{1}{2}$ , becomes  $\frac{20}{30}$ . Well, as you may suspect, the left eye has lost its lens, which has been removed being cataractous. Concussion of the eyeball, caused by the impact of a snow-ball a year or more ago, was probably the cause of the cataract, which likely developed soon afterwards, though the boy only found out recently that the eye was blind. When first seen the eye appeared as it does now, except that the pupil was gray. The tension and field of vision were normal, and the position of windows and of a lamp-light could be made out. June 14th, the patient being under chloroform, and the pupil fully dilated, "needling" was done, the capsule being freely divided, and the lens broken up. Straps were then applied to the lids, and after a few hours removed and a 4gr. sol. atropiæ instilled. The next morning the pupil was found well dilated, and there was no reaction, the eye being free from congestion and pain. The pupil was kept widely dilated by the use of the 4gr. sol. atropiæ four to six times a day. The lens substance gradually became flocculent and swollen so as to project beyond the plane of the iris; but the tension, which was tested from time to time, did not become abnormal. July 3rd, *linear extraction* was done: the patient being anesthetized, the lids separated by speculum and the eye held by fixation forceps applied at the insertion of the internal rectus, a vertical cut was made with a straight keratome through the cornea about a line from its outer margin, and two lines long, the knife being inclined so as to make an oblique wound with the inner lip well within the enlarged pupil. The cystitome was then inserted, and its point passed over the lens so as to insure thorough division of the anterior capsule. The cataract was then evacuated by making slight pressure with the forceps, still in position, while the cut was made to gape by pressing back its outer lip with the curette, which was also carefully

passed within the pupil so that the flocculent lens matter might the more easily escape along its groove. When the pupil had become clear, the eye was closed with straps; and cloths wet with ice-water were ordered to be applied. The next morning the wound had closed, the aqueous humor had been re-secreted, the iris was in about its normal plane, the pupil was dilated and regular; and the eye was free from pain, but moderately congested. The patient was allowed to get up, the eye being kept covered: sol atropiæ sulph. gr. iv. ad ʒj. to be instilled every three hours. July 9th. The pupil is fully dilated and pretty clear; patient can see distant objects. The eye was kept under atropine, and on July 19th, vision, V., with + 4 lens =  $\frac{1}{8}$ . August 28th. The posterior capsule appearing translucent was divided with the cataract needle; atropine being applied before, and also used for some days afterwards. September 4th. With + 3 $\frac{3}{4}$ , V. =  $\frac{1}{8}$ , and with + 2 $\frac{1}{4}$  fine print can be read.



LINEAR EXTRACTION.

By *linear* extraction the process of removing soft cataract is reduced from a period of months to that of weeks, or even days,—a great gain in many instances: and it is especially indicated in subjects of thirty or thirty-five years in whom the nucleus is somewhat firmer than in adolescents. It is, moreover, a pretty safe operation, though less so than keratonyxis. The preliminary needling, which should divide the capsule and disturb the lens matter much more freely than is done in ordinary needling, is required in order that the lens tissue, which is glutinous and coherent, may by the action of the aqueous humor become flocculent, and also somewhat diffuent so as to escape readily through the cut, and not remain adherent to the iris, setting up iritis. The interval allowed in this case was longer

than needed for this effect, and five to ten days generally suffice. The pupil should be kept fully dilated, for if it be allowed to contract, iritis will likely be set up, and adhesions form; the risk of the operation will be increased, and iridectomy will be required. The tension should be daily tested, for if the globe become hard, or much irritation ensue, the lens should be removed without delay. The operation is most easily done when the incision is made at the outer part of the cornea: the resulting linear cicatrix can hardly be seen in this case, and is generally not noticeable. If the iris should prolapse or be bruised during the operation, a portion should be removed. So-called secondary cataract is apt to occur, and dissection with the needle should be done as after ordinary extraction.

*Suction* is sometimes practised in linear extraction through a hollow tubular curette, the curved eyed end of which is passed through the incision after laceration of the capsule and kept buried in the lens, gentle aspiration being made through a short piece of tubing attached to the free extremity. A piston syringe, devised by Bowman, is also employed for the same purpose. Much care should be taken when suction is used; and the ordinary and older method is yet more frequently followed.

(To be Continued.)

**HYDROPHOBIA.**—The observations of Gowers and Coats on hydrophobia, that the white blood-corpuscles travel through the walls of the bloodvessels freely, together with those of Binz, that quinine arrests such movements of white corpuscles, have led to the employment of quinine in large doses, together with bromide of potassium, in at least one case of hydrophobia, with the effect that while one of the persons bitten by the same dog has died, a second who was taken ill a few days later was put on this plan of treatment, with the effect that seven days after active symptoms had set in he was not worse, but alive, and even somewhat better. It will not do for me here to allude further to what is being done by the commission to enquire into hydrophobia; but there are good grounds for believing that really valuable results will follow from the present careful examination into the maladies of animals, and those in man caused by animals.—*J. Milner Fothergill, in Philadelphia Medical Times.*

## Translations.

From *Lyon Médical*.

### THE NATURE OF SCIATICA.

M. Fernet has pursued his researches which go to prove that primitive spontaneous sciatica, ordinarily due to a local chilling, should not be considered as a simple neuralgia, that is to say, as an affection without appreciable anatomical lesion, but rather as a veritable neuritis. Exposing the results obtained in the *Archives de Médecine*, M. Fernet remarked that he relied chiefly for the establishment of his opinion upon three clinical characters: the direct examination of the nerve by palpation, the frequent existence of trophic troubles, and the course of the disease. Recently, in the case of a man in his wards affected with sciatica, he had occasion to examine *post mortem* the state of the diseased nerve, and he found a manifest increase of volume, as well as a very marked injection of the nerve; but this augmentation of volume may be readily perceived during life. Here are the directions which M. Fernet furnishes upon this subject: The patient lying upon the back with the thighs slightly flexed upon the pelvis, and the legs upon the thighs, the patient is directed to keep his lower limbs at perfect rest and to make no effort. You then explore the sciatic nerves with the fingers, which are pushed rather deeply into the popliteal space at first, then proceeding progressively upwards to the sciatic notch. The fingers being well engaged in the depth of this space, their palm or face turned towards the outer aspect of the thigh, and their extremities being occasionally carried from within outwards, the sciatic nerve is very distinctly felt under the form of a cord, and when this is firmly pressed you are apprised of the fact by the sensation which the patient experiences, a sensation only unpleasant on the sound side, but painful and accompanied with tinglings in the leg and foot of the affected side. The palpation is only really difficult in very fat subjects, or when the sciatic is very painful: in this latter case, pressure on the nerve is intolerable, and provokes reflex contractions, which prevent the exploration.

By this proceeding, carefully applied, there are frequently found very notable differences

of volume between the healthy and the diseased side, the nerve of the affected side appearing larger than that of the sound, a difference of consistence, the nerve of the affected side being harder than that of the sound side; a difference of form, the nerve of the affected side forming a cylindrical cord which pressure does not modify, whilst the nerve of the sound side appears to allow itself to be flattened out and even dissociated. The lesion which is thus discovered may, moreover, be confined to certain points of the nerve.

The nature of the pain, which is continuous, persistent at first, dull, and gradually intensified, limited to the nerve trunk, or even to a part of the trunk without constant peripheral radiations is also, according to M. Fernet, a further proof of the existence of a nerve-inflammation. The defects of nutrition which, as M. Charcot has shown, are dependent upon inflammatory lesions of the nervous system, are not wanting here. There is often muscular atrophy of the leg and thigh, easily appreciated upon measurement.

At the same time as the muscular atrophy there is a thickening of the subcutaneous cellular tissue by a deposit of fat; these two states appear to be in habitual connection with one another; and in order to appreciate this adiposis, it suffices to take up at symmetrical points on the two thighs or the two legs, a fold of the skin, and to pinch it moderately between the thumb and finger; you can then very readily recognise the greater thickness which exists on the diseased side; this thickening may be sufficiently great to mark the atrophy and to give to the limb a rounded form often noted in sciatica.

Zona, which is always an index of nerve inflammation, also sometimes appears in sciatica; lastly, the evolution of the disease may also be invoked, as being contrary to the hypothesis of a simple functional trouble devoid of lesion.

In a therapeutic point of view, it results hence that, if it be admitted that primitive, spontaneous sciatica is usually a neuritis, a resolutely antiphlogistic medication will be employed against it: absolute rest, leeches, wet cups in the course of the nerve, vesicating strips at the back of the thigh, cauteries, &c., will be the chief means of treatment.—*Jour. de Méd. et de Chir. Pratiques*.

From *La France Médicale*.

DEGREE IN SANITARY SCIENCE.

Decree issued by the President of the French Republic on 20th June, 1878, relative to the conditions to be fulfilled in order to obtain the diploma of Doctor of Medicine.

Art. 1. The studies to obtain the diploma of Doctor of Medicine shall last four years; they may be followed during the first three years either in the *Facultés*, or in the *Écoles de plain exercice*, or in preparatory school of medicine and pharmacy. The studies of the fourth year can be followed in a *Faculté* or an *École de plain exercice*.

Art. 2. Candidates must produce, at the time of making their first inscription, the diploma of Bachelor of Letters and the diploma of Bachelor of Sciences, limited as to the mathematical part. They shall undergo five examinations and sustain a thesis. The 2nd, 3rd, and 5th examinations are divided into two parts. The examinations at the end of the year are suppressed.

Art. 3. The five examinations shall be in the following subjects:—

1st Examination.—Physics, Chemistry, Natural History (medical).

2nd Examination.—1st Part, Anatomy and Histology; 2nd Part, Physiology.

3rd Examination.—1st Part, External Pathology, Accouchments, Operative Medicine; 2nd Part, Internal Pathology, General Pathology.

4th Examination.—Hygiene, Forensic Medicine, Therapeutics, *Materia Medica*, and Pharmacology.

5th Examination.—1st Part, External and Obstetrical Clinics; 2nd Part, Intern Clinic, Practical Proof of Pathological Anatomy.

Thesis.—The candidates sustain this trial upon a subject of their own choice.

Art. 4. The first examination shall be undergone after the fourth (quarterly) inscription and before the fifth, the first part of the second examination after the tenth inscription and before the twelfth, and the second part of this examination after the twelfth and before the fourteenth inscription.

The third examination can only be passed after the expiration of the sixteenth quarter of studies.

Every candidate who shall not have successfully passed the first examination in November, at the latest, shall be thrown over to the end of the academic year and shall not be permitted to take any inscription during that year.

Art. 7. The practical laboratory work, dissection, and hospital attendance are obligatory. Each yearly period of laboratory work and dissection shall extend over six months.

The period of hospital attendance shall not be less than two years.

Art. 11. The present decree shall come into force on 1st November, 1879.

From *Gazette des Hôpitaux*.

TREATMENT OF CHRONIC ADENITIS BY CAUTERIZATION WITH NITRATE OF SILVER.

M. Casson adopts this treatment not only in suppurating chronic adenitis, but also in these tumours as soon as they are the seat of fluctuation, however vague and little manifest it may be. This treatment consists in opening the tumour at its centre with a narrow bistoury, followed by cauterization of the interior with a pencil of nitrate of silver. This cauterization should be the rule at every opening of a chronic ganglion whether with thin or thick walls, and especially in cervical adenitis.—*Pau Médical*.

From *L'Union Médicale*.

THE PHYSIOLOGICAL ROLE OF THE HYPOPHOSPHITES.

At the *Académie des Sciences* M. Ch. Robin presented a note from MM. Paquelin and Joly in the following words: "The pyrophosphates and the hypophosphites have been for a long time employed in therapeutics as reconstituents. We have shown that the pyrophosphates leave the economy as they entered it, without having undergone any transformation; that the whole amount is found again in the urine in the shape of pyrophosphates; that the ingestion of these products only increases the expenditure of the economy on account of the labour of elimination which their presence necessitates; that the pyrophosphates, in fine, very far from being reconstituents, as has been for nearly thirty years supposed, are found to be merely diuretics. Our researches upon the physiological action of the hypophosphites have led us to entirely analogous conclusions.

THE CANADIAN  
Journal of Medical Science,

A Monthly Journal of British and Foreign Medical  
Science, Criticism, and News.

TO CORRESPONDENTS.—*We shall be glad to receive from our friends everywhere, current medical news of general interest. Secretaries of County or Territorial medical associations will oblige by sending reports of the proceedings of their Associations to the corresponding editor.*

TORONTO, SEPTEMBER, 1878.

☞ SUBSCRIBERS in arrears will greatly oblige by attending to the bills enclosed in the August number at their earliest convenience.

HOLIDAY NOTES.

(Continued.)

NEW YORK, 1878.

Through the courtesy of Dr. James B. Hunter, we had the pleasure of witnessing Dr. Emmett perform his favourite operation for laceration of the cervix uteri, a condition far more common than is generally supposed.

Dr. Emmett regards laceration of the cervix as a matter of very considerable importance; for it not only gives rise to an obstinate form of leucorrhœa, with prolapse and back-ache, but the cicatricial tissue is, he thinks, a prolific source of bad health, producing irritation and functional derangement in remote parts of the female system. He thinks that many of the neuralgias of the face and other parts of the body, anæmia, consumption, and even epithelioma of the uterus, may all result from the irritation produced by the pressure of the hard tissue on the nerve fibres involved in the cicatrix.

In many cases the glandulæ nabothi undergo cystic degeneration and very considerable enlargement, and these changes lead directly to increased secretion and irritability, and, in the course of time, to other changes of more serious character. He therefore strongly urges the restoration of the uterus to its normal state by paring the surfaces, and uniting them by silver wire; and while doing that, he says, we should

take out all the hard cicatricial tissue from the angle of the wound, for unless we do, the edges must be forced together over a wedge of hard tissue in the angle, pressure on the nerve fibres will be increased, general discomfort will be augmented, and premature atrophy of the whole organ is apt to follow.

Whether we agree with the Doctor in ascribing so wide a range to the morbid influences of this condition or not, we must admit that it is a very powerful factor in the causation of uterine displacements, and other ills of the female generative system, by which the unfortunate victim is invalidated for years, if not for life.

We also had the pleasure of seeing Dr. Thomas perform ovariectomy, the whole operation being completed in twelve and a-half minutes. This was the twenty-eighth case operated on by him since September, and out of that number there have been only four deaths.

Ovariectomy is performed at the Women's Hospital in small isolated cottages elevated about three feet from the ground; each cottage contains only two rooms, one for the patient, the other for the nurse; the walls are well plastered with hard finish and painted, and after every case the whole interior is washed with carbolic acid, and after a case of septicæmia, painted again. During the operation the temperature of the room is kept at 80° or 83°, and antiseptic spray is directed on the wound. All the instruments used are placed in an iron tray containing antiseptic solution, and all the water used for cleansing the sponges, hands, &c., is likewise antiseptic.

Dr. Thomas prefers operating before the general health is much broken down; and we firmly believe the patient *will* survive the shock of operation, and *will* be less liable to suppurative inflammation if operated on before the constitutional vigour is too much impaired. He makes a very small incision, empties the sac rapidly with a trocar and scalpel, and draws out the tumour quickly, as it becomes reduced in size, the patient being turned on the side when the trocar is thrust in. He thinks the less the peritoneum is handled or exposed the better, and where there is no

effusion or hæmorrhage, he does not touch it with either hand or sponge; but if it be necessary, he will sponge out the cavity thoroughly. Then he has his cases watched almost constantly for several days by one of his assistants, and often makes use of the cold bath when the thermometer indicates the presence or approach of danger. We have never witnessed an operation where the surgeon was so ably assisted. Each one knew his special duty, and did it without a moment's hesitation or loss. Scarcely a word was spoken, every instrument was handed up the moment it was required, without any request or search having to be made for it, and the spectator got the impression that in case of emergency each assistant was competent to take hold and finish the operation himself. Indeed his chief assistant, Dr. James B. Hunter, formerly of Toronto, is himself a very neat and successful operator, and quite competent for any operation in gynecology. We had the pleasure of seeing him operate for laceration of the cervix uteri, and rupture of the perineum, and bear willing testimony to the ease and success with which he accomplished the task in both cases.

UNIVERSITY OF TORONTO.—MATRICULATION EXAMINATIONS.—The scholarships have been awarded as follows:—Classics—Dunn, H. L., from Welland High School. Mathematics—Barton, S. T. G., from Toronto Collegiate Institute. English, French, German, and History—McGillivray, J., from Collingwood High School. General Proficiency—MacMurchy, A., Toronto Collegiate Institute; Wright, H. J., Toronto Collegiate Institute; O'Meara, A. E., Port Hope High School; Davis, E. P., Upper Canada College; James, N., Collingwood Collegiate Institute. Ninety-seven candidates passed. Twenty-one ladies passed in different branches of subjects at the local examinations for women.

TORONTO MEDICAL SOCIETY.—The meetings of this Society have been regularly held and well attended. We print elsewhere Dr. McFarlane's paper read at the meeting of June 27th. Dr. A. H. Wright's paper on "Infants' Food," read at the meeting of July 25th, is held over until October.

## COLONIAL DEGREES.

The clauses of the Duke of Richmond's Bill which admit Colonial degrees to the Medical Register have been received with no little apprehension by the profession, and we ourselves have expressed our serious doubts as to the possibility of ascertaining the actual value of these diplomas, or ensuring that, at any moment of their recognition, they are equivalent as evidences of professional competency to the licenses of our Conjoint Boards. *On paper*, at all events, we are gratified to observe that some of these Colonial licenses are above criticism for we find in the CANADIAN MEDICAL JOURNAL for the current month the examination questions of the Colleges of Physicians and Surgeons of Toronto, and are thus enabled to assure our readers that every diplomate of that body who has answered the written questions is, indeed, an emporium of professional knowledge. The papers for first and second year candidates are twenty [*No!*] in number, including three on chemistry, three on anatomy, two on surgery, two on physiology, two on midwifery, and one each on microscopic anatomy, forensic medicine, botany, practice of medicine, toxicology, materia medica, and sanitary science. The aggregate number of questions is *one hundred and fifteen*, which, being divided between two [*No!*] examinations, leaves fifty-seven written questions for each student, besides his *viva voce* examination.

If the CANADIAN MEDICAL JOURNAL would oblige us with a specimen of the answer paper of one of the monsters of erudition who have digested this dose, and eliminated a satisfactory result, we shall be able to appreciate the nature of the proposed legislation on Colonial degrees.—*Medical Press and Circular*.

[The editor of the *Medical Press and Circular* should be sure of his facts before he indulges in the ironical. We have endeavoured to enlighten him by sending him the Curriculum of the College of Physicians and Surgeons of Ontario, and we recommend him to read again the Examination questions. It ill becomes a British Medical Journal to sneer at a Colonial Conjoint Licensing Board when they have hitherto striven in vain to establish a similar system in the Mother Country.—Ed.]

## ANTAGONISM OF ALCOHOL AND DIPHThERIA.

We have received a little book upon this subject written by Prof. E. N. Chapman of Brooklyn. The author, after some twenty years' experience, part of the time very extensive, has arrived at the conclusion that alcohol is as purely and essentially a specific for the diphtheritic poison as quinine is for that of intermittent fever. He insists upon the early administration of the remedy—as soon as the character of the lesion is ascertained—in large quantities and frequently repeated. Judging from a comparison of his statistics with those under the other methods of treatment that have been adopted, Prof. Chapman has undoubtedly the best of the argument in his favour. So far as we are aware, too, he is the first who has attributed such unusual efficiency to alcohol in the treatment of this terrible disease. The fact has long been admitted that, in this and all diseases in which great prostration of the vital powers becomes manifest, alcoholic stimulants constitute one of the most important elements of successful treatment. But no one before Prof. Chapman has ventured so far as to claim for alcohol any specific agency. We are inclined strongly to concur in the view enunciated by him, as well as many others, as to the primary blood-poisoning in diphtheria. We think, too, that alcoholic stimulants, with quinine, iron, and chlorate of potash, constitute the most rational kind of treatment that has thus far been recommended; but as we have not had any experience in testing the specificity of alcohol, we are unable to offer any positive opinion. Certainly, with the enormous death-rate that has attended *all* the other modes of treatment, we would be justified, upon the very encouraging success which has followed this in Prof. Chapman's hands, in giving it a trial. One thing, we fear, is certain, that the profession has much to learn yet upon the management of the disease before it has been stripped of its terrors. We are not justified, therefore, in rejecting any recommendation which seems to offer the smallest encouragement for success.

We commend the careful perusal of this little book to our professional brethren, with

the assurance that the many suggestions offered upon the subject of diphtheria will amply repay them. The style is elegant, and withal practical and unpretentious beyond the laudable effort to convey valuable practical information.

Dr. Ord, of St. Thomas' Hospital, London, Eng., has kindly promised us a second clinical lecture on "the Examination of Urine." It will appear in a future issue.

The 10th Annual Meeting of the American Association for the Cure of Inebriates will be held on Sept. 10th, 1878, in Union Hall, Boston, Mass.

## Book Notices.

*Annual Announcement of the Department of the University of Michigan for 1878-9; Department of Medicine and Surgery, Ann Arbor, 1878.*

*Eighth Annual Announcement of the Faculty of Medicine of Bishop's College, Montreal, Session 1878-79.*

*The Obstetric Forceps, When and How to Use It.* By GEORGE J. ENGELMANN, M.D., St. Louis.

*A Hystero-Psychosis Epilepsy dependent upon Erosions of the Cervix Uteri.* By GEORGE J. ENGELMANN, M.D., St. Louis.

*Eighteenth Annual Announcement of the Bellevue Hospital Medical College. Sessions of 1878-79, with the Annual Catalogue for 1877-78.*

*Ninth Annual Report of the State Board of Health of Massachusetts, January, 1878.* Boston: Rand, Avery, & Co.

*Remarks on Ovariectomy, With an Appendix containing the History of several Typical Cases met with in Practice.* By J. W. ROSEBRUGH, M.D., Hamilton.

*Prize List Thirty-third Provincial Exhibition of the Agriculture and Arts Association of Ontario, 1878, Sept. 23 to 28. Journal of Arts Association of Ontario.*



*The Soft Palate; Its Value in Diagnosis as compared with the Tongue in Derangements of the Liver, Malarious Diseases, and Exanthematous Fevers.* By WM. ABRAM LOVE, M.D., Atlanta, Georgia.

*Atlas of Skin Diseases.* By LOUIS A. DUHRING, M.D. Part IV. Philadelphia: J. B. Lippincott & Co., 1878.

Part IV. of this admirable work contains illustrations from cases in practice of "Vitiligo," "Alopecia Areata," "Tinea Favosa," and "Eczema" (Rubrum.) Each plate is, as in former parts, accompanied by brief notes of the cases illustrated. We have nothing to add to our remarks made in reference to Parts I., II., and III. as to the great merit of the Atlas. All the numbers have been excellent. We can recommend it to any one wishing an Atlas of Skin Diseases.

*The Hystero-Neuroses, With Especial Reference to the Menstrual Hystero-Neurosis of the Stomach.* By GEORGE J. ENGELMANN, M.D., St. Louis, Mo.

In this little brochure of thirty-eight pages Dr. Engelmann directs attention to a too much neglected reflex phenomenon of uterine irritation; and points out that the rational and only successful way of removing these very distressing symptoms is the removal of the uterine condition producing them. Numerous cases are cited in illustration of the facts recorded. He classifies these hystero-neuroses in nine categories. The hystero-neuroses of the brain, of the eye, of the pharynx, of the larynx, of the bronchi, of the breasts, of the intestines, of the joints, and of the stomach. The last-named he divides into three classes: (a) Constant, or pathological hystero-neuroses of the stomach; (b) Menstrual hystero-neuroses of the stomach, and (c) Gastric hystero-neurosis of pregnancy.

*On the Pathology of the So-called Pigtyphoid.*

By WM. OSLER, M.D., Professor of Physiology and Pathology in McGill University, and the Veterinary College, Montreal. (Baillièrre, Tindall, & Cox, King William Street, Strand.)

In this pamphlet, Dr. Osler gives an account of five experiments, made by himself, of in-

oculation of this disease, in healthy pigs, together with the post-mortem appearances furnished by the disease. From his observations, it would appear that Budd and Axe were quite in error in regarding this affection of the pig as the analogue of typhoid fever in man; and Dr. Osler is altogether disposed to confirm Murchison's view of its resemblance to dysenteric affections. One thing seems certain, however, that it enters into Virchow's category of diphtheritic diseases. About the time that Dr. Osler was making his experiments Dr. Klein and others were engaged in a similar investigation. Dr. Klein had verified Prof. Axe's demonstration of the existence of the contagion in the serum of the skin, and had also induced the disease by inoculation with material from the intestine, but it was reserved for Dr. Osler to successfully utilize the juice of the lymphatic glands for the same purpose; and he was likewise the first to prove that the contagion is contained in the lungs, by the successful inoculation with caseous matter from the bronchial tubes. The following are Dr. Osler's conclusions:—

1. The so-called pigtyphoid is a disease *sui generis*, presenting anatomical and clinical features distinct from any other affection.
2. It presents no analogies, either pathologically or clinically, with typhoid fever in man.
3. Neither has it any affinity with anthrax, as claimed by some continental writers.
4. If we take the intestinal lesions as characteristic, the disease must be regarded, with Dr. Murchison, as dysenteric in its nature; although the cutaneous and pulmonary affections, as well as certain of the clinical features, meet with no parallel in human dysentery.

## Births, Marriages, and Deaths.

### MARRIAGES.

On the 24th July, at Penetanguishene, M. A. Spohn, M.D., to Editha S., daughter of Mr. A. A. Thompson.

On July 24th, 1878, at the residence of the bride's father, South Marysburg, by the Rev. E. A. Sander-son, Wm. Minaker, M.B., I.R.C.P., Edinburgh, to Miss Esther M., only daughter of Isaac Striker, Esq.

At Warkworth, on the 17th July, by the Rev. D. Sutherland, M.A., John W. Byam, Esq., M.D., L.C.P.S., the son of Rev. G. F. Byam, of Elia, to Ida May, eldest daughter of J. D. Bogart, Esq., M.D., all of Campbellford.

### DEATH.

At Oakville, on August 23rd, David Dolmage Wright, M.D.