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T H E DOMINION MEDICAL JOURNAL.

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CARBOLIC ACID, AND ITS USES IN MEDICINE AND SURGERY.

By J. ALGERNON TEMPLE, M.D.,
M. R. C. S. ENG.

Read before the Medical Section of the Canadian Institute, April 2nd, 1869.

MR. PRESIDENT AND GENTLEMEN :—

The subject I have chosen this evening to bring before your notice, is Carbolic Acid and its uses in Medicine and Surgery. I have no doubt it is already well known to you all, but I trust you will not consider it unworthy of your attention for a few moments, I have nothing original to bring before your notice, it is merely a history of the various modes in which it has been used, pointing out the latest improvements and manner of using it. Time necessarily prevents my entering fully into all the diseases in which carbolic acid is used.

The Germans seem to have been amongst the first who used carbolic acid, or compounds analogous to it, in the treatment of disease, but to Dr. Lemaire, of Paris, are we indebted for the earliest publications on this subject. In 1861, he published three essays on its uses, and in 1863 he published an extensive monograph on its uses in medicine and surgery.

Dr. Declut, in 1865, published at Paris, another volume on carbolic acid.

I think to Prof. Lister, of Glasgow, is justly due the honour of being the first to use it extensively in England, more especially in the treatment of compound fractures, this was in March, 1865, in the Glasgow Royal Infirmary, in a case of compound fracture in the leg, in this case however, it did not prove successful, but it did not alter him from persevering most energetically his researches on this subject, and you all know with what great success his labours were crowned.

Dr. Lemaire attributes its sanative effects, to

the power it possesses of arresting decomposition, and the development of fungi.

Mons. Pasteur, has long since proved, how the atmosphere produces decomposition of organic substances, he has demonstrated that it is not to its oxygen or any of its gaseous constituents, but to minute particles suspended in it, which are the germs of various low forms of life, and which become the essential cause of decomposition. Carbolic acid seems to possess the power of destroying these low forms of life existing in the atmosphere, and to this we must attribute its great benefit in the treatment of compound fractures and wounds.

The grave results which follow compound fractures so frequently, is undoubtedly due in a great measure, to the entrance of air, producing decomposition of the blood which is effused around the fragments, and among the interstices of the tissues, converting this effused blood into an acrid irritant, producing both local and constitutional disturbance.

While I was in India, being there connected with a Railway, I had many opportunities of trying carbolic acid, in contused and lacerated wounds in the natives, especially about the feet, as they are always barefooted, and consequently more exposed to such accidents, and I am now, fully convinced of its great usefulness, in the treatment of wounds.* Carbolic acid as you well know, is extracted from the light oils of tar, by distillation, and then treating the products with a concentrated solution of potash, which distil at a temperature between 320° and 392° F., separating the alkaline solution from the hydro-

*During the very warm months of May, June and July, in India wounds rapidly became filled with maggots, unless the greatest attention is paid to cleanliness, and the dressings frequently changed. As my practice was very scattered, I could not manage always to visit my Hospital daily, and so was obliged to leave the cases in charge of my native assistant, on my return, through neglect, on his part, I constantly found maggots in the wound, which, of course, prevented the parts from healing. After I began to use carbolic acid, I never in a single instance, found a maggot in a wound, notwithstanding, I used to direct my assistant not to remove the dressings, but simply to apply the acid externally, daily, during my absence. I was very much gratified by these results, as it used to be a frequent cause of annoyance to me. I should fancy, here, during the very warm summer months, the same thing constantly happens; and I am sure if you use the acid you will meet with the same happy results I did.

carbons which float on it, and then neutralizing the alkali by an acid, which liberates the carbolic acid. This was Lament's method, but the amount of pure acid in this was very small, and the preparation was offensive from the strong tarry odour.

Mr. F. C. Calvert, of England, has obtained a very pure preparation by the direct transformation of benzene into carbolic acid. This new phenic or carbolic acid crystallises in white prismatic crystals, soluble in 20 parts of water, fusible at 10C° F., and boils at 359° F.; when mixed with ammonia, it gives a blue color; the same effect is produced when you expose to the fumes of hydrochloric acid a chip of deal soaked in this carbolic acid.

This acid is very pure and free from any objectionable flavour or odour, and should always be used as a therapeutic agent internally, in preference to all others.

There is a second quality he manufactures quite as pure, but having a peculiar tarry taste; this, however, may be used externally, as the odour is not very strong.

There is still a third quality, but it is only fit to be used as a disinfectant; this is the preparation which was used so largely in England during the recent outbreak of Rinderpest and cholera; at present, I think, it stands pre-eminent as a disinfectant.

Previous to the time Professor Lister began its use as a local application, he states that pyæmia and hospital gangrene used to be very prevalent in his wards in the Royal Infirmary of Glasgow, but during the time he was using it, such things were scarcely known in his wards, though they were exactly in the same state and condition, nothing whatever having been done to improve their healthy condition. This is encouraging, for, under similar circumstances, we ought to use it as a disinfectant. The sanitary state was brought about, no doubt, by the evaporation of the acid from his dressings.

When first Professor Lister began its use in compound fractures, he used to take a piece of lint and soak it in pure liquid carbolic acid, and then with a pair of forceps, pass this into the wound and press out as much of the acid as possible, amongst the effused blood. Of late, however, he has given this up, and uses a lotion con-

taining 1 part of acid in 20 of water. He gets all the benefit of arresting putrefaction; finds it easier to inject and diffuse amongst the tissues, which are the seat of extravasation. Frequently obstinate vomiting was produced when he used the pure acid, which he attributed to the absorption of the acid; but by the present mode of treatment, this is obviated. Then having soaked another piece of lint, a trifle longer than the wound, he applies it over the wound, and outside of this he puts cotton wool and an ordinary pasteboard splint; this he leaves undisturbed for three or four days, though daily he would apply the acid to the external piece of lint, on removing the dressing. Then, he usually found no sign of pus, the sore healthy and granulating, and free from all unpleasant odour; in some cases slight excoriation of the skin takes place.

Owing to the volatile nature of the acid, he then made use of oiled silk, to be put over the first piece of lint, and again, outside of this, another piece of lint soaked in the acid; but this was not enough to prevent the evaporation, and the next improvement was the use of black tin, as a covering, which seems to have answered very well. Blood that had been effused among the tissues became rapidly absorbed, and in some instances, he states, that bone which was white and apparently dead became vivified, granulations sprang up around it, and it assumed a pink and healthy appearance once more. For a report of such cases, I must refer you to the *Lancet*, for March 23rd, 1867. As soon as the wound is tolerably well filled by granulations, he omits the use of the acid, as it seems rather to prevent cicatrization than hasten it: he then uses simply water dressing or something similar.

The next improvement was the mixing of linseed oil with the acid, and then a sufficiency of carbonate of lime to convert it into a paste or putty. In cases where the wound is large, and the flow of blood and serum profuse, this served much better to prevent decomposition. A rag dipped in the oil and carbolic acid was first applied over the wound, and then over this the paste was placed, so as to extend some distance beyond the wound, while there was any discharge. The paste was changed daily, but the rag was left in situ. A great many interesting cases on this point are reported by him in the *Lancet*, of

March 23rd and April 27th, 1867, which are well worthy of your perusal. His success in the treatment of compound fractures is really marvellous.

He extended the use of carbolic acid to the treatment of abscesses.

The following is his mode of treatment: a rag considerably larger than the abscess is to be soaked in a solution of carbolic acid and linseed oil, 1 part to 4 parts, and then laid upon the skin where the insertion is to be made, the scalpel is then dipped into the same solution, one end of the rag is to be raised and the scalpel plunged into the cavity of the abscess, withdraw the knife quickly and drop the end of the rag which then acts as an antiseptic curtain, beneath which the pus flows; the whole contents are then firmly pressed out, and if there be much oozing of blood or great thickness between the abscess and the surface, a piece of lint soaked in the solution is to be introduced into the wound to prevent primary union, this is to be done, also, under cover of the rag.

To prevent decomposition of the pus, which flows from beneath this rag, it is better to use the carbolic acid putty, a layer of about $\frac{3}{4}$ of an inch thick, is to be spread on tin foil or block tin, and having withdrawn the rag quickly, apply the paste which is to be secured in position by ordinary plaster.

It is not necessary to introduce the acid into the cavity of the abscess, as it would only increase the secretion of the pus, by stimulating the pyogenic membrane. This mode of treating abscess has been very successful, a great many large abscesses have ceased in some instances to produce any pus, after the contents have once been evacuated, producing merely a thin serous fluid, which entirely ceases in a few days. The success he met with in treating psoas abscess on this plan was very great.

Some of you, I have no doubt, have had several opportunities of witnessing its remarkable power of preventing decomposition. Dr. H. G. Joseph, of Leipsic, confirms Lister's results as regards his mode of treating abscess; he, however, mentions a curious black colour of the urine occurring during the use of carbolic acid. I believe it is still undecided what this pigment is, but clinically it seems to have been of no im-

portance. Dr. Hodder, I know, has used it after several operations, and with the very best results.*

Mr. Lister has lately modified his mode of dressing wounds, by omitting the use of the putty and plate of block tin. The vessels having been secured by torsion, he washes the surface with carbolic acid and oil, and then closes it with a continuous metal suture; over the wound he puts a piece of lint, soaked in oil and acid, which remains in situ, and over this another piece of lint, also soaked in the same solution, (this is to be daily changed); outside of this he applies a plaster made of shell-lac and carbolic acid; this is not adhesive and must be kept in place by ordinary plaster. This plaster is made as follows:—Take of shell lac three parts, crystallised carbolic acid one part, heat the lac with $\frac{1}{3}$ of the acid, over a slow fire, till it is completely melted; then remove from the fire, and add the remainder of the acid, and stir briskly so as to thoroughly mix them; then strain through muslin; it is to be spread to the thickness of about one-fiftieth of an inch; then brush the surface of the plaster lightly with a solution of gutta percha, dissolved in about thirty parts of bisulphide of carbon; when the sulphide has all evaporated, the plaster may be stowed away in a tin box for use.† It is very useful in skin diseases, depending upon or accompanied by any of the forms of fungi.

Dr. Mann, of Brooklyn, speaks highly of it in chronic eczema, impetigo and psoriasis invertebrata; he uses a lotion composed of one part of carbolic acid to four parts of water. It ra-

*The following case has been kindly related to me by Dr. Hodder: It was a case of compound dislocation of the elbow joint.—The case was seen by Drs. Hodder and Beaumont, and it happened in a boy of 7 or 8 years of age; the condyles of the humerus were forced completely through the skin, at the back of the joint; they had great difficulty to reduce the dislocation, as they were unwilling to enlarge the opening in the skin; the humerus was tightly grasped by the skin, after a considerable amount of difficulty; they at last succeeded; the whole interior of the wound was then washed over with carbolic acid and oil, and lint soaked in the same solution, applied outside; the limb was then put upon a proper splint; the case progressed most favourably, and in the space of a very short time the boy recovered with a perfectly useful arm.

†The very latest plan of employing carbolic acid in the treatment of wounds by Mr. Lister is the following:—He washes the surfaces with a concentrated aqueous solution of crystallised carbolic acid, one part to twenty parts; the margins are brought together by sutures, if necessary, and then quickly covered by a piece of sheet tin, which has been previously washed in the aqueous solution of carbolic acid. This tin is laid near the skin, and well fitted; it forms a pretty good seal to the wound; this tin is then covered by the shell lac and carbolic acid plaster, which must considerably overlap the tin on all sides; the use of this is to furnish a small but continued supply of carbolic acid to disinfect the surrounding air; the more dependent border is left free for the exit of discharge, should any form; but this point is to be well guarded by a piece of lint soaked in the oily solution, one part to thirty-four of olive oil.

pidly destroys pediculi, of all sorts; a small quantity of a strong solution rubbed into the hair, and washed out in half-an-hour's time, will destroy all that may have existed there. In scabies it has produced a cure, applied as an ointment. In sinuses, connected with carious bone, it is particularly useful. Mr. Turner, of Manchester, has employed it, with great success. Its use is indicated in all putrid discharges from the nostrils, ears, vagina or rectum; also in sore throat.

Dr. Godfrey has found benefit from it in the vomiting of pregnancy, and in gastric irritation, especially when produced by miasmata. Dr. Jones, of Liverpool, uses it in pyrosis; he gives 15 drops of a solution containing one grain of the acid to a drachm of spirits of wine; to be taken in a wine glass full of water, an hour before each meal; he speaks of the results as being most satisfactory; he believes it acts by destroying the vegetable organisms, and so checking the fermentation process to which these growths give rise.

Dr. Kempster, of New York, recommends it as a remedy for flatulence and foul breath, with constipation; he gives one or two drachms of a solution, containing gr. 1 to the ℥, and says it quickly acts.

Prof. Pirrie, of Aberdeen, recommends it in scalds and burns, he uses a lotion of one part of carbolic acid to 6 parts of olive oil, to be applied to the scalded part by means of lint, soaked in the solution, the pain rapidly subsides and the healing proceeds without suppuration.

Dr. Robert's, of St. Mary's Hospital, Manchester, speaks favourably of its use in ulceration of the os and cervix uteri, with or without hypertrophy; chronic inflammation of the uterus and cervix uteri, with excoriation, and in follicular disease of the cervical canal, especially when the enlarged follicles encroach upon the canal, and by an undue secretion of mucus or pus, block up the aperture which becomes frequently a cause of temporary sterility; under this state, the use of the acid is particularly indicated. He says, first, through a speculum, wipe the surface of the ulcer clean, by means of a piece of lint; then, with another piece of lint, saturated with carbolic acid, having previously liquified the acid by a few drops of water, touch the whole surface

of the ulcer, then gently dry the ulcer with another piece of lint so as to absorb any superfluous acid; be careful not to allow any of the acid to come in contact with the vaginal mucous membrane, as it will cause excoriation and pain for several hours. The application may be repeated once or twice a week according to circumstances, in addition to this, Dr. Robert's advises a lotion to be used, composed of ℥i. to ℥ii. of acid, ℥i. glycerine and \mathcal{O} . of water, this acts as a disinfectant.

Dr. Roberts claims the following advantages for it, he says:—"As a caustic, it is especially useful, occupying, as it does, in escharotic power, a position intermediate between the milder nitrate of silver and the more powerful corrosive caustics, as potassa fusa, the mineral acids, acid nitrate of mercury, &c. More energetic than the first named salt, it is at the same time free from the danger to the neighbouring structures, which attends the use of the more potent caustics. Although its action does not penetrate below the diseased surface, it possesses, in equal degree with the stronger caustics, the property of changing the vitality of the tissues, and produces rapid cicatrization, dissipates the inflammation and hypertrophy, and relieves pain.

By its disinfectant action, it destroys the offensive odour of purulent and other discharges, and acts beneficially upon the unhealthy lax and discharging vaginal mucous membrane.

Dr. G. Bryant, of Lexington, speaks favourably of carbolicised uterine sponge tents.

Dr. Playfair, of King's College Hospital, uses equal parts of glycerine of tannin and carbolic acid, as recommended by Mr. Spencer Wells in uterine cancer, to allay pain and destroy the factor, which it effectually does. He applies a pledget of cotton wool, soaked in the solution to the cervix.

Dr. Hamilton, of Canonbury, Eng., in a case of acute synovitis, which had gone on to suppuration, laid open the knee joint by an incision $1\frac{1}{2}$ inches long on each side, and evacuated between 6 and 8 oz. of pus. It was done according to Mr. Lister's plan, under cover of the antiseptic curtain, the knife having been previously dipped in the antiseptic solution, as soon as the pus had escaped the carbolic paste was applied. Six days after, no pus whatever had formed, and

the patient could move the joint freely without pain.

Dr. Marcet, of Westminster Hospital, has used it in the form of spray, in the treatment of phthisis; but I do not think he obtained any benefit from this line of practice.

It is an excellent application to indolent syphilitic sores; the best form is the aqueous solution (1 part to 20 parts).

In concluding, I have only now to remark, that I do not think it is at all advisable or necessary to use the very strong solutions that were formerly used, such as 1 part of acid to 5 of oil. I think, 1 part to 15 or 20 is quite strong enough for all purposes. While I was in England, I had frequent opportunities of witnessing its value in the treatment of compound fractures; there were many cases which looked perfectly hopeless to attempt to save the limb, more especially in compound fractures in the ankle joint, and yet they progressed favourably and ultimately made good recoveries; and I feel confident, had it not been for the use of carbolic acid, they would either have ended fatally, or, at the least, in amputation. As far as I am concerned, myself, I have implicit confidence in it, and in all cases of compound fractures that may fall to my lot, I purpose to employ it.

TRICHINA SPIRALIS :

A LECTURE DELIVERED AT THE COLLEGE OF PHYSICIANS AND SURGEONS, FEB. 20, 1869.

By JOHN C. DALTON, M.D.,

PROFESSOR OF PHYSIOLOGY AND MICROSCOPIC ANATOMY.

GENTLEMEN.—The subject of Trichinosis, to which our attention will be directed to-day, is remarkably interesting in three points of view. First of all, it is a disease of extreme importance with regard to its possible frequency, the fatality which it sometimes manifests, and the ease with which, at any time, it may show itself in a community where it has been previously unknown; at the same time it is a preventable disease; and in the third place, it is especially interesting as an instance of a malady which has been discovered, so to speak, suddenly, within a comparatively short period, although undoubtedly it has existed unrecognized from time immemorial.

Trichinosis, as you are all now aware, is a disease produced by the infection of the muscular system by a minute parasite, which has received the name of *trichina spiralis*. The existence of *trichina spiralis* in the muscles of the human subject, has been known for over thirty-five years. As early as 1832,

little bodies were discovered in human muscle, which upon examination were found to consist of ovoid sacs, and a few years later it was found that each one of these sacs contained a minute round worm coiled spirally upon itself. The discovery was first made in the muscles of a hospital patient. In that case it was found that the trichinae were exceedingly numerous and scattered throughout the body, in the substance of the voluntary muscles. Since that time they have been noticed, in many instances, in persons who have died from accidental causes, from pneumonia, from phthisis, and various other affections: from diseases, in a word, which would appear to be entirely disconnected with the existence of the parasites; so that notwithstanding the great abundance of the parasites, medical men were forced to the conclusion that they exerted no deleterious influence whatever upon the subjects inhabited by them.

I have here a specimen, which I took myself from the human subject, some ten years ago. It is the rectus femoris muscle, and, like the other voluntary muscles in this case, it is full of these parasites. You will see here the regular appearance of the trichinae as they are usually seen, and as they were exclusively known previous to about the year 1855. Look at this muscle very carefully; you will find, just visible to the naked eye, minute ovoid bodies situated between the muscular fibres, having an opaque envelope and a transparent, but apparently dark-coloured, centre. On dissecting out these bodies with needles, it is found, as I have said, that they consist of an ovoid sac, and inside this sac the worm lies, spirally coiled up. This is the old encysted trichina, such as you see in this drawing.

Between the fibres of the muscle, and lying parallel with them, is the ovoid sac, somewhat pointed and yet slightly rounded at its two ends, and swollen in the middle, where the worm is coiled up. Now the trichina is coiled in such a manner inside the sac, as to make about two turns and a half upon itself. One extremity of the worm is blunt and rounded, the other is more pointed, and the two lie so near each other that half a turn more would bring them together. These bodies, although so minute, are yet visible to the naked eye on close examination in such specimens as this; because, as you readily find under the microscope, they are partly solidified by a calcareous deposit in the cavity of the sac. This deposit is of a gritty and almost crystalline texture, brittle, breaking upon firm pressure, and is composed, probably, of phosphate of lime, slowly deposited, so as to give to the extremities of the sac an opaque appearance and a very firm consistency.

This is the condition in which the trichina presented itself in all specimens brought to the observation of medical men, for some twenty-five years after its first discovery. They were cases of old, encysted trichinae. All that was known about them was that they were encysted, and that they did not exhibit any distinct sexual apparatus, and that they did not appear to produce any distinct symptoms by their presence in the human organism.

But between the years 1850 and 1860, certain experimenters in Germany undertook to examine the natural history of this parasite more closely. They did so by administering portions of muscle infected with it to the lower animals; and they found—especially Leuckart, who was the most successful in

these investigations—that the worms, apparently so insignificant in size, and so incomplete in development so long as retained in the muscular system, become further developed when introduced into the intestine of another animal. After a short time the sexual apparatus appears, copulation takes place, the female produces living young, and these young penetrate finally into the muscular tissue of the second animal, and there domicile themselves for an indefinite time. In this way somewhat more definite ideas were acquired with regard to the natural history of the worm, as found in the inferior animals. By a continuation of these experiments, it was found that this infection of the muscular system with trichina may show itself in the pig, the cat, the rat, the mouse, the rabbit, and, I believe, one or two other species of the inferior animals.

So far, nothing more had been learned with regard to trichinosis as constituting a disease in the human subject. The new era in this respect opened with the year 1860. At that time an epidemic of trichinosis occurred in Germany. The members of a family living in Dresden were taken sick with symptoms similar to those of acute rheumatism, mingled with those of typhoid fever. One of them, a servant-girl, died, and on examination it was found that her muscles were filled with trichinae. The attending physician and Professor Virchow tried the experiment of administering the trichinous muscles to a rabbit, and found that the rabbit became infected with the parasite, and died in about four weeks' time. The infected tissues of this rabbit were administered to a second, which became infected in the same manner, and died, like the first, in about four weeks. Finally, a third rabbit was fed with the flesh of the second, with a similar result. These experiments show that the disease, as it exists in the human subject, may be transmitted to the lower animals; that it may be transmitted indefinitely from one animal to another, the parasites passing alternately from the intestines to the muscular system, and again from the muscular system to the intestines. These are the general outlines of the origin and course of the disease known as trichinosis.

Now let us see what are the details of the anatomical structure and physiological development of the worm itself.

I have said that, as you examine the trichinae in those cases where they have existed in the muscles for an indefinite period, where they have become encysted, and the cavity of the cyst has been invaded by calcareous deposit, it is not easy to make out their anatomical structure. But in cases where the disease is recent, and particularly where it can be traced to the recent use of trichinous flesh as food, the anatomy of the worm can be made out with more distinctness. Such a case happened in this city about five years ago. Some sailors, on board ship, were taken sick while in port with symptoms resembling those noticed in the Dresden family, similar to those of typhoid fever and acute rheumatism combined. It was found that the disease originated, in their cases, from eating raw pork or bacon. About the same time other cases of the disease became developed in persons living permanently in the city; and it was found in these cases that the difficulty could be traced to the use of ham imperfectly cooked.

A portion of this ham came into my possession,

and in examining it, I found not only that the meat was trichinous, but also that the parasites were in a decidedly different condition from that which they exhibit in cases of long standing. The first peculiarity was that the cysts in which the worms were contained, instead of having definite and rounded ends, gradually tapered off into long and slender prolongations, the extremities of which could not be reached, being entangled in an intricate manner with the muscular fibres. In these drawings you see represented the cysts containing the trichinae, as found in the ham. (Fig. 2.) In this case the cyst is evidently a hollow, fusiform tube, consisting of a transparent and structureless, but well-developed, membrane, containing the worm coiled up, as you see. From the two extremities of this fusiform cyst run off the prolongations. It is very important to ascertain exactly the structure of these prolongations. It is evident that they are tubular, and that their cavity is nearly continuous with that of the sac containing the worm. Not quite so, however, for it can be seen that a membranous partition runs across where the prolongations begin, so that the worm is enclosed in a distinct cavity; and that the prolongations are tubes of much smaller calibre, but were apparently at some previous time connected with the central cavity. Now this central cavity contains a transparent fluid: the worm is, therefore, lying free in the interior of the sac, not connected with its membranous walls; this can be demonstrated by breaking open the sac by a slight pressure between the glass plates. It ruptures, and discharges the worm, which escapes in such a manner as to show that it lay before perfectly free within the cavity of the sac. (Fig. 3.) The worm still remains coiled up, after its escape, and you will usually find much difficulty in uncoiling it sufficiently to examine its structure. No operation in microscopic anatomy requires more patience than this; for its firm folds must be unwound without rupturing any of its parts, in such a manner as to give you a fair view from one extremity to the other. (Fig. 4.) This done, the trichina, at this stage of development, is found to be a worm one twenty-eighth of an inch in length; its anterior extremity or head is tapering and pointed; the body very gradually enlarges as you pass from the anterior extremity towards the middle, and about the middle acquires its greatest diameter, which it retains throughout the rest of its extent, terminating posteriorly in a round, blunted extremity. The alimentary canal runs longitudinally throughout the whole length of the worm, there being a mouth at the anterior or pointed extremity, and an anus at the posterior or rounded end. About the junction of the middle with the posterior third of the parasite, the calibre of the alimentary canal suddenly contracts, then enlarges again, and afterward remains reduced to about one-third its original size. The only other organ visible at this time, is one which occupies, together with the alimentary canal, the posterior third of the worm; an organ apparently tubular in character, rounded at either end, and filled with rather large and tolerably well-defined cellular bodies. This evidently is the sexual apparatus, such as exists at this time.

The characters which I have given are sufficient to define the encysted trichina as taken from the muscles. Suppose now a portion of muscular flesh, filled with trichinae in this condition, be taken as

food by the human subject or administered to one of the lower animals. On arriving in the small intestine, the worms are found to be perfectly free, for the muscular tissues in which they were imbedded, as well as the cysts in which they were contained, are digested in the stomach, so that within twenty-four or forty-eight hours you find an abundance of free trichinae in the cavity of the duodenum. At once they begin to increase in size, so much so that very soon, usually by the fourth or fifth day, they have become three or four times as large as before. They have now arrived at the adult condition. At the same time the sexual apparatus, before so incomplete, has become perfect, and the copulation of the sexes takes place. I have myself, on several occasions, found in the intestine of the rabbit the two sexes in copulation, the male fastened upon the female at the orifice of the generative apparatus. The eggs having been impregnated, as the animal is viviparous, the female soon becomes full of the young brood.

In this drawing you see these parts as I have just described them. (Fig. 5.) Instead of the intestine now taking up the whole of the anterior two-thirds of the body, and a great part of the posterior third, you find that the sexual apparatus is by far the most prominent organ in the interior of the body of the female; and as soon as the young have arrived at the period of development here represented, they begin to move forward to the terminal duct of the generative apparatus. This can now be seen very clearly, running from the ovary forward to a point quite near the anterior extremity of the worm. The young are very numerous. I do not know that it has been calculated how many a single female is capable of producing, but they are probably very numerous. The young discharged in this way into the cavity of the small intestine, begin to penetrate through its mucous membrane, by a boring process, passing undoubtedly through the entire thickness of the intestinal walls. This causes a great deal of irritation, which is the first symptom of trichinosis. It is usually sufficient to produce a considerable degree of pain and not unfrequently a smart attack of diarrhoea.

After passing through the walls of the intestine, the worms disperse in every direction, and from that time you begin to find them in the muscular tissue throughout the body. There they domicile themselves, and, within a fortnight after the symptoms have begun to manifest themselves in the human subject, you will find them almost everywhere, scattered throughout the voluntary muscles. They are still very small, having increased but little in size during their transit, so that when they first arrive in the muscular tissue they are not more than about 1-140th or 1-20th of an inch in length. They soon, however, become encysted, and then increase very considerably in size. At first, however, they are not enclosed in distinct sacs, but are found contained in the interior of long tubes.

We have already seen that, although the encysted trichina is contained in a sac or cavity of its own, this sac is often connected with prolongations running out from each extremity; and in the human muscle, within the first fortnight of infection, the young worms are found contained in swollen tubes. This is the condition of the worm as it was found in the muscles of the human subject on the thirteenth day

of illness in a case which I had the opportunity of examining. The worm, you see, is not free, but is contained in the interior of a tube, swollen or fusiform at the point where the worm lies partly coiled up. The worm is not stationary at this time, but by a gentle pressure can be made to move from one end to the other of the swollen portion of the tube. By about the end of the first fortnight its coils assume a considerable degree of regularity, and the worm then reaches that condition which has given its name of *trichina spiralis*.

We have now described the worm as domiciled in the muscular tissue. The next question is, How did it get there, and what is the nature of this tube which it now inhabits, and which is hereafter to become its cyst? These are points with regard to which some doubt still remains. Most of the German observers are agreed that this tube is a muscular fibre; they believe the worm passes from the intestine to the remotest regions of the body by boring its way through the intermuscular cellular substance; and that if examined on its first arrival there, it is perfectly free; that it then penetrates the substance of the muscular fibre, producing atrophy and degeneration of its substance, until the fibre becomes converted into the tube with prolongations which I have described. On the other hand, it is possible that the worm, instead of working its way through the intermuscular cellular tissue, may also be transported by the circulation; for if it can bore through the walls of the intestine, it can, of course, also penetrate the blood-vessels, and it might thus finally reach the left side of the heart, and be sent with the current of the circulation to every part of the body. However, it is certain that the young trichinae arrive at the muscular tissue, either by working their way through the intervening cellular tissue or by distribution by the blood vessels. They very soon present themselves in the interior of these swollen tubes, which may be either capillary vessels that have become plugged, by coagulation of the blood, or by deposit of exuded material excited by the presence of the worm; or may be muscular fibres that have undergone degeneration and atrophy from its presence. Soon the tube containing the parasite suffers a further alteration. An exudation takes place around the worm, so that that part of the tube containing it is shut off from the rest; and the remainder of the tube becomes atrophied into slender, tapering prolongations. After some years these also entirely disappear, and you see only an ovoid sac without prolongations; and finally you may have the cavity of the cyst invaded by a calcareous deposit, as I have already described—the last peculiarity of the degenerated cyst.

Now all these changes in the history of the trichina have been seen in the human subject; the development of the young in the body of the female; their discharge from the mother's body into the intestine; their penetration of the walls of the intestine and dispersion to the muscular tissue throughout the body; their domiciliation in the interior of the tubular cavities, and the change of the tubular cavities into ovoid cysts; the calcification of these cysts; and the quiescent and dormant condition of the worm as the result.

Now to what symptoms does this accident give rise? As I have already said, within the first ten

days there is irritation of the intestines. In some instances this irritation is very great; and the greater it is, the more favourable the prognosis, as a general rule. After eating trichinous flesh, the patient generally begins to suffer within the first week, sometimes within two days. Now, if the irritation of the intestine be extreme, so that frequent and abundant evacuations are produced, the chances are very great that all, or nearly all, of the parasites will be discharged from the intestine. If so, the patient is safe. But if the irritation be not very marked, time is allowed for the young trichinae to penetrate the intestinal walls, and enter the muscular tissue—from the end of the first to the end of the second week. This is the most dangerous period, the second stage of the disease. There is general pain and soreness, and oedematous swelling throughout the muscular system. At the same time typhoid symptoms manifest themselves; the patient is debilitated, his pulse rapid, skin hot, tongue and lips dry, and his general appearance closely resembles that of a patient with typhoid fever.

The passage of the worms into the muscular tissue, and the changes taking place there, are very apt to produce symptoms which result in the patient's death at or before the end of the fourth week. By that time the worms have become completely encysted, and after this the symptoms of irritation begin to disappear. The muscular system becomes habituated, as it were, to the presence of the parasite; and after a while the symptoms all subside; the patient can move his limbs as before, and then considers himself as entirely recovered.

How long may the worms remain in this quiescent condition in the interior of the muscular system? In 1863 Prof. Langenbeck of Berlin was operating upon a patient for a tumour of the neck, situated upon the surface of the sterno-mastoid muscle; in dissecting it off, the fibres of this muscle were disclosed, and it was noticed that their surface was covered with minute white specks. These attracted so much attention, that a portion was excised and submitted to the microscope, when the specks were found to be encysted trichinae. After the patient's recovery, minute enquiries were made to ascertain at what time he had become infected. The result was that no such attack could be traced to a period less remote than eighteen years before. At that time, viz., in 1845, the patient, with several associates, was serving upon a committee of inspection of the public schools. After the inspection in a certain district, the committee partook at the village inn of a lunch, consisting, in part, of ham. Very soon after, all the members of the committee were taken sick with symptoms similar to those which we now know to be attributable to trichinosis. Two of them died, and the signs of poisoning were so marked that the inkeeper was arrested and held under this charge for a considerable time. Although finally the circumstances were not found sufficient for his conviction of the crime, yet they were considered as so much against him, and the prejudices of the community were so excited in consequence, that he was obliged at last to leave the place. On going over all the history of the case, so far as it could be ascertained at that time, it left an undoubted impression on the minds of the medical men who made the investigation, that at the time before-mentioned, viz., in 1845, the members of the

committee were infected with trichinae from the ham used for their lunch; that two of them had died in consequence; and that Prof. Langenbeck's patient had recovered, and the worms remained encysted for eighteen years afterward. How much longer they may thus remain I do not know, but I see no reason why they should not last the remainder of the patient's life. They produce in this condition no interference with the health, and hardly seem to interfere even with the vigor of the muscles.

This was the condition in which the trichinae were nearly always found, prior to the year 1850, and from this fact it was supposed that the trichina was a harmless parasite. Such are the chief circumstances connected with the physiological history of the worm.

There still remains one question of a very important nature,—How great is the liability of the community at the present time to be infected, and what measures can be taken to prevent it?

The pig seems to be the animal naturally the most liable to trichinosis. He is certainly more liable to this disease than any other animal used for food, neither the sheep nor the ox being subject to it. It has been found in this country, by investigations in Chicago in 1866, that of all the pigs brought to market in that city, one in fifty is infected with trichina. This shows that we are all in danger of becoming infected by the use of pork, unless measures be taken, in preparing the meat, to destroy the vitality of the worms. Smoking and salting will not do this effectually. Only thorough cooking can be relied on as a safeguard. It is remarkable that most, if not all of the cases of trichinosis in this country, thus far have occurred among the Germans. This is because they have the habit, not otherwise common here, of eating ham, sausages, and even sometimes fresh pork, nearly or quite in the uncooked state. To kill the worms the ham must not only be salted and smoked, it must be cooked, and cooked thoroughly. Now, if you bear in mind that one pig in fifty is infected with trichina, you will perhaps think many times before putting between your lips a piece of pork, or ham, or sausage in the raw state; you will be certain that it is cooked; and not only that, but thoroughly cooked. One of the worst cases of trichinosis that has come under my observation was caused by eating pork chops which were rare or slightly underdone. Now, these chops were probably well enough cooked on the outside; but on the inside they were red and juicy, and the danger was precisely the same as if the patient had taken the meat entirely raw. In order to destroy the vitality of the trichina the meat should be subjected to a temperature of 212° F. Now, if you boil a ham for half an hour, or even an hour, you do not necessarily subject all parts of it to this temperature. In the central parts of the ham the temperature will not rise to that point unless the boiling has been long continued. I speak of this particularly, as it is a very important matter. A temperature of less than 160° F. does not destroy the trichina. As shown by direct experiment, therefore, a piece of trichinous meat, any part of which has not been raised to or above this point, is just as dangerous as if it were taken in the raw state.

These are the chief points of importance in regard to the trichina and trichinosis. The disease is fatal enough, frequent enough, and revolting enough to

induce us to take all possible measures to prevent it, and I do not think anything is sufficient for this but a personal examination of every piece of pork, ham, bacon, or sausage used as food, to see that every part of it has been subjected to a thorough cooking process.

One other point still I should like to speak of. We have seen that the disease shows itself occasionally in the human subject, but very frequently in the pig. Now, how is it, under these circumstances that the continuance of the species of trichina spiralis is provided for by nature? We have here an animal that arrives at maturity in the intestine of the human subject. In that situation the female bears living young in consequence of the individual having eaten pork filled with the encysted and quiescent trichinae. So long as these remain encysted and quiescent in the pig's muscles they remain practically undeveloped and practically sexless. This flesh is eaten by the human subject. In the intestines of the human subject the worms are set free, the females are impregnated and bear young, and these scatter themselves throughout the body. Now, when these young have, in their turn, in the human subject arrived at the period of quiescence, how are they ever to get back to the intestine of a living animal, and so become capable of continuing their species?

I presume that the mode by which the race is continued is this: Suppose we start with the pig infected with quiescent and sexless trichina. This pig is butchered. You know that butchering establishments are the abundant resort of rats, which feed upon the refuse scraps of meat, and of course these after a time become infected with trichina. The worms are developed in the intestine of the rat, and produce living young. These not only infect the muscular system of the rat, but they are also discharged with the feces. These feces become mingled with the food of the pig,—an animal, as we know, not very fastidious with regard to his food and consequently subject to several parasitic diseases,—and thus the round of development of the trichina is completed. Again, its perpetuation is provided for by a similar round between the cat and the mouse. The mouse became infected by, feeding upon refuse meat, and the cat by devouring the mouse or rat. We have therefore the natural history of the animal embracing in each case two different phases, in one of which it undergoes an active development, in the interior of the intestine while in the other it assumes the quiescent form, become encysted in the substance of the muscular system.

There are other points of considerable interest with regard to the rapidity with which the human subject may be infected, the great number of persons who may become infected by eating the product of a single slaughtered animal, and the degree of fatality attending the disease. Enough, however, is known to convince us that the affection is a very frequent one, and liable to be exceedingly fatal, or if not fatal, to produce prolonged and exhausting disease.

Much would be affected if all pork offered for sale in the market could be subjected to inspection; and this has been done in some parts of Germany: pork being liable to infection not only with trichina, but also with cysticercus, producing tape worm in

the human subject. Such inspection would undoubtedly prove very useful. Still it would not afford complete protection, unless carried out with an amount of detail which would in all probability prove practically unattainable. The only absolute protection, therefore, must be that exercised by the individual for himself. He must see that he never uses for food any kind of preparation of pork in any form not so thoroughly cooked as to destroy every possible vestige of parasitic life.—*Medical Record*.

[NOTE.—We have been disappointed in obtaining the plate (referring to this case) in time for this issue, but hope to give it in our June number.]

The Dominion Medical Journal,

A MONTHLY RECORD OF

MEDICAL AND SURGICAL SCIENCE.

LLEWELLYN BROCK, M.D., EDITOR.

TORONTO, MAY, 1869.

THE MEDICAL SECTION OF THE CANADIAN INSTITUTE AND THE MEDICAL COUNCIL.

The following preamble and resolutions formed the substance of the communication addressed by the Secretary of the Medical Section to the Medical Council, during its late session in Toronto, and referred to in our last number. The resolutions were discussed ably at a large meeting of the Medical Section, and unanimously adopted:—"Whereas, the Legislature of Ontario, at its last Session, did pass an act respecting the Medical Profession of the Province, in which act provisions are made to place upon a common ground, with ourselves, a class of practitioners known as Homœopaths, and another class who style themselves Eclectics; and, whereas, we, as members of a liberal profession, are unwilling to violate our clearly defined principles by associating with any sect holding views and theories we consider to be absurd and false; Therefore, be it Resolved, That the Medical Section of the Canadian Institute does, in the most emphatic manner, protest against such unprecedented and uncalled for legislation.

Resolved, That this our protest be communicated to the Medical Council for Ontario, now in Session, with the request that the Council take prompt and energetic steps to secure our release from associations so repugnant."

This communication led to a long and very animated discussion by the Council, and was finally laid on the table, and the subject dropped.

The Medical Section has since held several meetings for the purpose of discussing the Medical Act,

and a committee was appointed to prepare a deliverance on the question, with a view to unite the Profession in opposition to the Act. The committee reported the draft of a circular, at a special meeting held on Tuesday evening, the 27th ult., which they proposed sending to every medical man in the Province. After a prolonged discussion, however, the report was rejected, and the following resolution adopted:—

Moved by Dr. Agnew, and seconded by Dr. Hall, and Resolved: That the Medical Section of the Canadian Institute having already protested against the Medical Act, so far as relates to the co-erced union with Homœopaths and Eclectics, in a Medical Council for the Province, further, respectfully, recommend our brethren, throughout the Electoral Divisions, who hold similar views with ourselves, to pledge their candidates for election to the Council to use every constitutional means to secure the repeal of those objectionable clauses. Carried.

The meeting then adjourned.

BEFORE the issue of our June number the election of members for the Medical Council will have taken place. We hope that the profession, appreciating their true interests, will use every exertion to place in that position men well qualified to discharge the duties appertaining thereto. As far as we can find out a number of the old members intend offering themselves for re-election. In the March number we inserted the New Bill, in full, with the territorial divisions annexed. In our April issue we gave the By-laws regulating the elections. The members of the profession will see that each of them will be supplied, by the registrar, with voting papers, which papers, after being filled up, should be sent to the returning officer of said division.

THE case of Jackson *vs.* Hyde, which has been reported very fully in the daily papers, and occupied the attention of the profession, came up again for trial by order of the Court, and terminated in a verdict non-suiting the plaintiff. The defendant's counsel contended that the action could not be sustained, inasmuch as it was commenced since the plaintiffs' marriage was consummated, and therefore the action was abated.

The Court decided in favour of the defendant on these grounds, and the plaintiff's counsel accepted the non-suit, under protest.

We notice that Dr. Grant has introduced a bill at the general sitting of the Dominion Parliament, to make the practice of Vaccination general, which was read a first time, and ordered for a second reading on Monday, the 3rd of May.

The Editor Dominion Medical Journal, Toronto.

SIR:—I beg to enclose a copy of resolutions passed at a meeting of the Medical Practitioners of Ottawa, held in the City Hall, on the 21st April, Doctor Van Courtland, in the Chair.

1. Moved by Dr. Leggo, seconded by Dr Garvey, That, in the opinion of this meeting, the Medical Act of 1865, as well as the amended Act, entirely fail to afford any protection to the profession, or guarantee to the public that their interests will be secured.

2. Moved by Dr. Henry, seconded by J. Sweetland, That in the opinion of the meeting a petition should be presented to the Ontario Legislature, to secure the repeal of the clauses appended to the 5th Section of the amended Medical Act.

I remain, Sir, truly yours,

WALTER JAMES HENRY, M.D.,

Secretary.

Reviews and Notices of Books.

COMPENDIUM OF PERCUSSION AND AUSCULTATION, AND OF THE PHYSICAL DIAGNOSIS OF DISEASES AFFECTING THE LUNGS AND HEART. By AUSTIN FLINT, M.D. Fourth Edition. W. Wood & Co., New York; W. Chewett & Co., Toronto.

The short preface fully explains the nature of the work:—"This little compendium was prepared several years ago, by request of a medical friend who intended it for insertion in an annual Physician's Visiting Book. The latter publication was abandoned, and the compendium was published by itself. It has been found convenient in aiding to memorize physical signs, by the private pupils of the writer, and by others, and it has been reprinted in compliance with a demand for this purpose. It is designed, not as a substitute for works treating of auscultation and percussion, but, on the contrary, to promote the study of treatises which consider fully these and other methods of physical exploration, together with the diagnosis of diseases affecting the respiratory organs and the heart."

TREATISE ON THE DISEASES OF THE EAR:

Including the Anatomy of the Organ. By ANTON VON TROELTSCH, M.D., Professor in the University of Wurzburg, Bavaria. Translated and Edited by D. B. ST. JOHN ROSSA, M.A., M.D. Second American, from the fourth German Edition. 1869. Wm. Wood & Co., New York. W. C. Chewett, & Co., Toronto.

This work, although nominally a revised edition, is in fact a new work. It is translated from the fourth German, and has been made large additions to by the translator. The original, also, has been improved, and added to by him; in fact, in many

parts entirely re-written, and is one of the most creditable works upon the subject that can be obtained. Numerous engravings; a copious index; and well illustrated cases, make it an attractive addition to the Medical Library. Practitioners in the country having to treat disease in every form, and of every organ of the body, should by all means obtain this volume as a work for reference.

A TREATISE ON THE PRINCIPLES AND PRACTICE OF MEDICINE :

Designed for the use of Practitioners and Students of Medicine. By AUSTIN FLINT, M.D., Professor of the Principles and Practice of Medicine in the Bellevue Hospital Medical College, Fellow of the New York Academy of Medicine, etc. Third Edition, thoroughly revised. Philadelphia: Henry C. Lea; W. C. Chewett & Co., Toronto.

This work, which stands pre-eminently as the advance standard of medical science up to the present time in the practice of medicine, has for its author one who is well and widely known as one of the leading practitioners of this continent; and has received the commendations of the medical press in England and in this country. In fact, it is seldom that any work is ever issued from the press more deserving of universal recommendation. We give a synopsis of its leading features.

PART FIRST.

Contains ten chapters, devoted to Principles of Medicine or general Pathology, embracing under this head,—

Anatomical Changes in the Solid Parts of the Body.
Morbid Conditions of the Blood.
The Causes of Disease or Etiology.
Symptomatology.
Prophylaxis.
General Therapeutics.

PART SECOND.

The Practice of Medicine, or special Pathology is considered, and is subdivided into six sections,—

Section 1. Diseases affecting the Respiratory System.
Section 2. Diseases affecting the Circulatory System.
Section 3. Diseases affecting the Digestive System.
Section 4. Diseases affecting the Nervous System.
Section 5. Diseases affecting the Genito Urinary System.
Section 6. Fevers and other General Diseases.

ATLAS OF VENEREAL DISEASES :

By M. A. CULLERIER, Surgeon to the Hospital du Midi, Member of the Surgical Society of Paris, Chevalier of the Legion d'Honneur, etc. Translated from the French; with Notes and Additions. By F. J. BUMSTEAD, M.D., Prof. of Venereal Diseases in the College of Physicians and Surgeons, New York, etc. With One Hundred and Forty-five Colored Figures, on 26 Plates. Philadelphia: Henry C. Lea. 1868.

Dr. Bumstead, one of the best authorities in this country upon venereal diseases, has, with the most

commendable zeal, reproduced the magnificent work of M. Cullerier.

The author, in his preface, remarks, that it may appear strange that the work of an acknowledged "unitist" should have been selected for translation by an avowed "dualist." On the contrary, this has been an argument in its favor. It was desirable to show how almost completely the cobwebs which formerly obscured the subject of venereal have been swept away in the mind of at least one eminent authority. The Practitioner who desires to understand this branch of medicine thoroughly should obtain this, the most complete and best work ever published; combining the experience and theory of two men, each eminent in their own country, and perfectly reliable as an authority upon this intensely interesting subject. The Contents are:—Introduction.—How to study Syphilis, &c.

PART I.

Blennorrhagia in Man, and Complications.

Chap. 2.—Blennorrhagia in Woman.

Chap. 3.—Vegetations.

PART II.

Chancres.

Chap. 1.—Soft Chancre.

Chap. 2.—The Indurated Chancre.

Chap. 3.—Buboes.

Chap. 4.—Secondary Syphilis.

Chap. 5.—Tertiary Syphilis.

Under this head the whole subject is fully considered. The chromo-lithographs are very large, and each of the plates (consisting of 26), contains a number of figures, amounting altogether to one hundred and forty-five. We have said enough of this valuable work to give an idea, but not sufficient to give it that praise which is so well merited.

Hospital Reports.

LECTURE ON CLINICAL SURGERY—EXCISION OF THE HIP JOINT.

By THEODORE A. MCGRAW, M.D.,

PROFESSOR OF PRINCIPLES AND PRACTICE OF SURGERY IN THE DETROIT MEDICAL COLLEGE.

GENTLEMEN,—You will recognize the little patient, Patrick D., whom I now place before you, and who has been suffering so long from disease of the hip joint.

I propose now to excise the head of the femur, in the hope that the diseased portion of bone being removed, he may be enabled to recover his health with a serviceable, if not perfect limb. I will at first, however, recall to your minds the history of his malady, and state the reasons which have led me to decide upon an operation which is both hazardous and unusual. The little patient, now eight years old, has been suffering from lameness of the right leg for three years

It commenced, according to his mother, imme-

diately after the reception of injuries in a brutal kicking administered for some petty misdemeanour by his step-father. The child limped into the house, and ever afterwards complained of difficulty in walking, of pain in the knee joint, most severe at night, and of constantly increasing debility and fatigue. On entering the hospital, on December 6th, he was found to have an apparent lengthening of the right lower extremity, but a careful measurement showed that the increase of length was due, not to any actual difference between the two limbs, but to an inclination of the pelvis towards the affected side. The foot, you will remember, was slightly everted, and the thigh somewhat flexed on the pelvis. There was an ulcer about two inches below the right trochanter on the external aspect of the thigh, having that peculiar appearance which characterises sores in the neighborhood of carious or necrosed bones. In the hope that the joint might recover its tone, if relieved from constant friction and pressure to which it had been subjected, I kept the limb in extension by means of a weight attached to its extremity by adhesive plaster, the counter extension being maintained by the weight of the body. The patient was at the same time given tonics, such as iron and cod liver oil, and fed with the most nutritious articles of diet. This treatment has been pursued for two months without any other improvement in the patient's condition than that of relief from some of the pain and muscular spasm. The ulcer would at times nearly heal, but the improvement was never permanent, and it is now in about the same condition as it was when the patient entered the hospital. The boy has been gradually growing paler and thinner, and it is very evident that nothing can be hoped for from a continuance of the same treatment for an indefinite length of time.

The disease has reached a stage at which simple extension, though combined with constitutional treatment, is totally inadequate to its cure, and if nothing else be done, the patient will have before him the sad prospect of months of intense suffering, ending eventually, as is most probable, in death, or at best, in a tedious recovery, with a deformed and worse than useless limb. Under these circumstances, I have determined to make trial of an operation, which has been performed many times by different surgeons in this country and Europe, with varying success, namely, excision of the head of the femur, together with the trochanter and as much of the shaft of the bone as shall prove to be diseased. This operation was first performed by an English surgeon named White, in 1822, and has since been introduced among the legitimate operations of surgery by Ferguson and Hancock, of England, and Sayre, of New York. The ratio of mortality, as far as can be ascertained, is about one in every two and one-tenth cases; but as the operation has been reserved hitherto as a last resort, for patients worn out with long continued suppuration and pain, this ratio cannot be regarded as a fair index of the danger attending the operation in patients who have not arrived at the period of vital exhaustion. The objections which are urged against this procedure are, 1st. The hazardous nature of the operation. 2nd. The fact that the acetabulum is in most cases also involved in the disease, and that the operation would, therefore, be useless, the necrosed bone of the socket continuing to keep up

the irritation and discharge, even after the removal of the opposing surface of the femur. As regards the first objection, I will merely say that the patient is now in a most dangerous condition; by far the greater proportion of cases, when the disease has reached this stage, ending in death. The second objection is more weighty, and I have not come to my present decision without having given it full consideration. I believe, however, that even should the acetabulum prove to be diseased, there would be more prospect of recovery after the head of the femur had been removed than under the present circumstances. The disease would, in the first place, be less extensive, the constant irritation from the friction and pressure of the femur causing the morbid action to spread to new and hitherto healthy tissues; and then, a free opening having been made, which allow would the easy exit of the detached particles of bone, there are grounds for hoping that the whole diseased mass might eventually be discharged, and the patient recover. Now that the patient is fully under the influence of chloroform, I will proceed to operate, first enlarging the orifice of the ulcer, by incising it in the direction of the trochanter, carrying the incision, as you see, up to a point a little above it, and then making a transverse incision from the anterior superior spinous process of the ilium to a point nearly over the sciatic nerve. By means of this T shaped incision, I am now enabled to open the joint, and can feel the head of the femur, necrosed and partially worn away by the attrition it has suffered for so long a time. Now, as Prof. Webber carries the thigh over the body, adducting it and rotating it inwards, the head of the bone slips from the socket. I cut away the tissues from the bone below the trochanter, and saw it through. The head of the bone, together with the trochanters, are removed, and you can see what terrible ravages the long continued disease has produced in the bony tissue. On examining the end of the shaft, I find that the saw has not removed the whole of the disease, and I will complete the work with this pair of bull-nose forceps, with which, as you see, I am able to bite into the bone, and remove the remainder of the morbid structures.

Now, examining the acetabulum, I find it, as I feared, involved in the disease, the greater part of it being denuded of cartilage, and feeling rough to the touch. As no portion of it seems to be detached, however, I will, for the present, leave it untouched, hoping that it may come away, in time, without instrumental interference.

I now close the upper portion of the wound with stitches, leaving the lower part of the transverse incision open for the better drainage of the secretions of the wound, and apply this splint, which I have made after the model given by Ferguson, and which you will find represented in an engraving in Erichsen's Surgery. You will notice that it consists of a long, straight portion, made of smooth wood, which extends from a few inches below the foot to the lower margin of the wound. The cut surface is then bridged over by means of two pieces of bent iron, fastened at the other ends to a short wooden splint, which is in turn attached to the body by means of adhesive plaster.

We will now remove the boy to his bed, and will keep him, for the first twenty-four hours, under the influence of anodynes, at the end of which time

I trust he will have recovered from the shock and pain of the operation.—*Detroit Review of Medicine and Pharmacy.*

CARBOLIC ACID IN SURGERY.

SERVICE OF W. M. MUSSEY, M. D.,

Reported by A. GUTHRIE, M. D., Resident Physician Cincinnati Hospital.

COMPOUND COMMINATED FRACTURE OF LEFT LEG.

CASE I.—H W —, thirty-one years of age; German; admitted February 16, 1868. While attempting to turn a horse which he was leading, was struck by a street car, knocked down, and the front wheel passed over his left leg, near the centre, producing compound comminuted fracture. When admitted was fairly fortified against pain by the ingestion of alcohol, and a stoical disposition, health previously having been good. Upper fragment protruded about two inches: there were numerous splinters and fragments of broken bones; orifice of integument was about two inches long and one wide. From this severe injury there was considerable hæmorrhage. A portion of the protruding bone was removed by the bone-lance forceps, the splinters extracted, the leg suspended in a wire splint, and heavy extension by weight acting through a pulley, and the fragment gradually subsided within the wound of integument. Calvert's pure carbolic acid was thoroughly applied to the wound, which was then covered with lint, and it was saturated with the acid after it was filled with blood. Cold water dressing was applied to the limb, and patient given an anodyne at night.

The above mentioned application of lint together with the oozing blood, formed a scab, so to speak, and thus protected the wound, and was not removed until March 23. During the first two days there was a slight discharge of bloody serum, and subsequently of pus, from beneath the scab. The carbolic acid was applied to the lint twice daily for several days, then was diluted one half with glycerine.

Subsequent to this the strength of the acid was gradually diminished, and the wound was sufficiently healed to allow the application of the starch bandage on the 4th of May, and on July 3d. was discharged well.

COMPOUND FRACTURE OF LEFT TIBIA.

CASE II.—C. B.—aged twenty-four; admitted March 20. Three days ago, while grading a lot, a bank of earth fell on him, contusing his foot, and producing a compound fracture of middle third of left tibia. previous health, good. When admitted there was but little symptomatic fever, compound fracture of tibia in above mentioned site, external wound about one inch in diameter, no loss of bone substance, and not much hæmorrhage. Leg was suspended in wire splint, and wound injected twice daily with a solution of carbolic acid gtt. xxx. to the ℥i, and cold water dressing applied to limb, and anodyne at night.

Free suppuration was established in this case, and continued for over a month, but at length the wound began to heal, and he was discharged on the 18th of July, nearly well.

There is but little doubt that the suppuration would either have been prevented or greatly

diminished, and a more speedy recovery secured to the patient had the carbolic acid been used at the first and subsequent dressings, previous to his admission to the hospital.

CASE III.—J. S.—, aged forty-seven; German; admitted March 19. While at work in a rolling mill had his arm caught in a wheel, and before he could extricate it, his elbow was severely crushed. He was immediately brought to the hospital, and on examination his arm was found in the following condition: There was a wound over inner condyle of humerus, about two inches in length, and the adjacent tissues were severely contused. The forearm and arm were both shortened anteriorly, and the olecranon process projected unnaturally behind; fore-arm semiflexed on arm, but easily moved, the act eliciting crepitation.

The arm was placed in a right angled wire splint, and so arranged as to leave the injury free for the application of dressing; then the wound was thoroughly mopped out with a solution of carbolic acid in glycerine, *partes equales*, and this to be repeated twice a day, and the following to be applied afterwards:

℞.—Adipis ℥i.

Carbolic Acid ℥i.

℥t ungt.

The wound began to improve almost immediately; there was but little suppuration at any time. At the end of a month there was very considerable motion of the joint, and at the expiration of two months was discharged well. It is hardly necessary to remark that the strength of the acid was diminished as in case first, as the cure progressed.

CONTUSION OF HAND. (OUT-DOOR PATIENT.)

CASE IV.—J. C.—aged 25. On July 13, presented himself with his right hand frightfully crushed from being caught between the coupling of two cars one of which was in motion. The cuticle and tissues were dreadfully lacerated and contused on both dorsal and palmar aspect; particularly was this true of the thumb, which was so badly bruised and mangled that sloughing took place to a sufficient degree to cause the loss of the last phalanx. No fracture of carpal or pharyngeal bones. When it was practicable to do so, the lacerated tissues were brought together by interrupted sutures and then he was ordered to envelope the hand in a soft cloth, and keep it constantly wet with a solution of carbolic acid, (gtt. xxx to ℥i.) He continued to present himself daily, and on the fourth day the inflammation was running very high, especially about the thumb, where the contused tissues were of a dark unhealthy color, and discharging a fetid, unhealthy pus. The unhealthy parts were fairly saturated with carbolic acid, diluted one-half with glycerine, and ordered to apply a fermenting poultice, the surface of which was moistened with the gtt. xxx. to ℥i, solution of same. After this his hand began to improve almost immediately, except the thumb, a small portion of which was lost from sloughing of tissues, and consequent necrosis of last phalangeal bone. Subsequent to this the improvement was steady, and he was dismissed cured at the end of six weeks, with a very useful, but necessarily somewhat impaired hand.

SEVERE INJURY OF HAND.

CASE V.—C. W.—, aged sixty-eight; Tennessee, sailor; admitted September 5th. Had been

indulging in a few glasses of ale; was standing on the railroad track; was struck by a locomotive, knocked to one side, was picked up in an insensible condition and found to have sustained several injuries, among others a severe one of the left hand. When admitted, a few hours after the accident, was somewhat depressed and suffering severely. The tissues on dorsal and palmar surfaces of hand were badly lacerated; first and second phalangeal bones of middle and ring fingers were fractured near the metacarpophalangeal articulation. All the fingers were severely contused. Ordered to apply a soft cloth to the wound, and to keep it wet with a solution of carbolic acid gtt. xxx. to the ℥i., and to have a hypodermic injection of morphine, $\frac{1}{2}$ gr. to relieve pain.

On the seventh day after injury the whole hand bore an unhealthy aspect. The most severely injured parts were of a darkish color, and discharging a fetid pus. Was ordered to apply a fermenting poultice, and have

R.—Morph. Sulph. grs. iss.
Quin. Sulph. gr. xvi.
Chart. vi.
S.—One every three hours.

This resulted in sloughing of the integument, and thus left the dorsal and palmar surfaces of hand entirely denuded of cuticle. Under this treatment the improvement was steady, and on the tenth day the fermenting poultice was omitted and ordered to make a thorough application of gtt. x. sol. carbolic acid twice daily, and apply a linseed poultice and have Quin. in grs. ii., three times a day.

Subsequent to this, the improvement was steady, very free suppuration was set up, but this gradually subsided. The result was very satisfactory; the hand was saved, and a very fair os secured.

Very many chancroids have been treated with the application of pure carbolic acid, once in two or three days, and kept continually wet with a solution of ten grains to the ounce of water, with the result of a rapid cicatrization.—*Cincinnati Lancet.*

NEW YORK PATHOLOGICAL SOCIETY.

Stated Meeting, March 24, 1869.

DR. L. A. SAYRE, President in the Chair.

SEROUS APOPLEXY.

Dr. Finnell exhibited the left hemisphere of the brain removed from a gentleman fifty-seven years of age. The patient was a broker, and devoted all his time to his business. About fifteen years ago his health began to fail him, and he became exceedingly weak and nervous. He then took a trip to Europe, with the result of apparently restoring his health. On his return, he resumed business, but in consequence of constantly recurring attacks of tremulousness, inability to sleep, etc., he was forced to give up and retire. This cessation from business cares brought its reward in a proportionate improvement in his condition, continuing until a few months ago, when his nervous symptoms again made their appearance, terminating eventually in his death. This latter event was quite sudden.

The brain only was examined at the autopsy. Both lateral ventricles were distended with serous fluid, the quantity being estimated at twelve ounces.

The anterior, middle, and posterior cornua of the ventricles were almost effaced. The foramen of Munro was large enough to admit the index finger. The vessels on the inner walls of the ventricles were in an almost varicose condition. There were no appearances in the neighbourhood that would lead one to suspect the existence of previous inflammatory action.

Dr. Finnell considered the specimen one of serous apoplexy, this making only the second that he had ever seen.

The second specimen exhibited by Dr. Finnell was a small encysted tumour removed from the temporal region of a young man, aged twenty, which was of interest only in connection with the accidental division of the temporal artery during the operation.

DEATH FROM CHLOROFORM IN A CHILD SIX YEARS OF AGE.

Dr. Finnell, thirdly, exhibited a series of specimens consisting of the heart, kidneys and spleen removed from a little girl six years of age, whose death was occasioned by chloroform. She applied to the New York Eye and Ear Infirmary for treatment of convergent strabismus of the left eye. She was given chloroform by Dr. Cutter, of the institution. The quantity as mentioned was at first one drachm. This was placed upon a towel and held carefully to the mouth. Not coming fully under its influence, a second drachm was administered in like manner. Dr. Delafield proceeded to divide the internal rectus while the patient was yet not completely under the influence of the anæsthetic. No more chloroform was, however, given. The child was quite restless during the operation, and a few moments after it was finished, it was discovered that the patient had ceased to breathe. All the ordinary efforts to restore respiration usually made use of were futile.

The autopsy was made in the evening, eight hours after death. The right side of the heart was much distended with dark fluid blood. The kidneys were enlarged, as was also the spleen. The ovaries were respectively the size of a kidney bean. Both lungs were collapsed and comparatively free from blood. The time from the commencement of the anæsthetic until death was fifteen minutes.

Dr. FINNELL considered it remarkable that death should occur in this instance, when anæsthesia was not completed.

NECROSIS OF OS CALCIS.

Dr. SANDS exhibited portions of necrotic tissue taken from the os calcis. The patient from whom they were removed came under his observation five years ago, being then about twelve years old. At that time he was suffering from an acute inflammation of the bones of the left leg and of the right foot. In the left leg there seemed to be but little doubt that the disease was inflammation of the bones not involving the articular extremities of the tibia. In the foot, however, the symptoms led Dr. S. to believe, and he continued so to believe for a long time, that the disease was not necrosis, but caries involving a number of the tarsal bones. The patient was treated in the usual way for some time, and came near losing his life in consequence. He survived this, however, and in the course of time it became a question of operative interference for the removal of the dead bone then known to be

present. The operation on the left leg for the removal of necrotic tissue was performed in Dec. 1866, and as much was taken away as was consistent with safety considering the proximity to the joint. The result of the whole was satisfactory, and the boy recovered in due time. It was the belief shared in by Dr. Sands, and also by Drs. Parker and Van Buren, who saw the case, that the disease in the right foot was caries. Shortly after the operation upon the leg, the diseased foot became much swollen, the ankle joint became involved, and Dr. Van Buren advised the patient to go into the country with the view of ultimately being prepared to submit to amputation at the ankle joint. After his return the patient and his friends would not consent to the measure, and with the advice of Dr. Markoe, Dr. S. attempted to save the foot by gouging the os calcis, and removing from its substance numerous pieces of dead bone. Before the operation was finished the whole of the substance of the bone was removed, leaving only a shell of compact tissue so thin that the ends of the fingers could be felt through it. The specimen was of interest on account of the difficulties attending the diagnosis.

Dr. SAYRE remarked that during the past twenty years he had in numerous instances gouged out the os calcis in a similar manner, with good result. One case he referred to particularly in which the substance of the entire bone was removed and the patient was able to walk perfectly well. By resorting to this method of operating he was convinced that amputation could be prevented in hundreds of cases.

CODFISH BONE ABSTRACTED FROM PERITONEAL CAVITY.

Dr. WHITEHEAD presented a codfish bone removed from the peritoneal cavity while operating for a strangulated ventral hernia. The tumor was of considerable size, situated nearly in the median line at the junction of the umbilical and hypogastric regions, and rather to the left. After making the necessary incision, relieving the structure and passing his finger around to see if there were any other obstructions, he discovered the foreign substance referred to in the right iliac region. It was so closely adherent to the anterior abdominal wall in that situation, that it seemed to be fastened by one of its extremities. It was finally removed after considerable difficulty. The tumor was formed by a portion of the omentum. On making the incision into the median line, two or three mesenteric ganglia matted together came into view, which at first caused the operator to think the mass might be the fundus of the uterus, or a fibrous tumor connected with the womb. The wound was closed with interrupted sutures, and at the time of reporting the case, thirty-six hours subsequent to the operation she was doing well.

Dr. W. stated, in conclusion, that Broca, in his work on Strangulated Hernia, makes frequent reference to the presence of foreign bodies of a similar character causing inflammation of the hernial sacs. He also in this connection referred to the case reported by Louis Petit, in which a hark's foot had been discovered in the peritoneal cavity while operating for hernia.

Dr. BRIDOX exhibited a beautiful specimen of corpus luteum removed from the body of a woman who died in the ninth month of pregnancy.

ANOTHER DEATH FROM CHLOROFORM.

Dr. SCRIBE, by invitation, related a case of death by chloroform. The patient was a lady, a native and resident of Georgia, the wife of a physician, and mother of eight children. She had come to New York for the purpose of having an epithelioma of the tongue removed. Drs. Hutchinson and Krackowizer were in attendance upon the case, and advised the operation, which was performed by the latter. Dr. Squibb administered the anesthetic. The chloroform was first given from the bottle, without pouring any out. This bottle had the capacity of a pint, containing but two ounces at the bottom, and into the liquid a coil of paper was immersed. The chloroform found its way to the top of the coil by capillary attraction, and then gave off its vapor. She came quite readily under the influence of the chloroform, and passed through the intoxicating stage quite readily. She did not, however, become thoroughly anesthetized at first. The tongue was examined, and it was found sensitive; more chloroform was given, and the operation was started. She again manifested signs of a lack of the desired anesthetic effect; the jaw, for instance, could not be depressed. Profound anaesthesia was then speedily produced by allowing her to inhale the chloroform from a napkin. The operation was then fairly commenced, during which the chloroform was, of course, suspended. The operation was a long and difficult one, but during all the time her pulse remained good, and she was well watched. After the removal of the morbid growth, and just as Dr. Krackowizer was about to pass a stitch into the wound, the patient suddenly fainted, and despite all the efforts that were made for a long time she never breathed again. No post-mortem examination was granted. It was Dr. Squibb's opinion that the cause of death was a direct poisoning of the nervous centres by the chloroform.

VAGINAL PREGNANCY IN A COW.

Dr. LOOMIS exhibited the vagina of a cow containing the bones of a foetus of about seven months. The animal had miscarried for three years previously. She was supposed to be pregnant last year, but after enlarging for some time she ceased to do so; the lack of her pregnancy was given up, and she was fattened for beef and killed. In the process of dressing, the tumor referred to, with the contents, was found. The specimen was presented on behalf of Dr. Benedict, of Long Island.—*Medical Record*.

Selections.

Phosphorous in Locomotor Ataxia.

By WALTER LAMBERT, M.B.,

AMHERSTBERG, ONTARIO, CANADA.

Miss F. B., aged 22, had been suffering slightly with anaemia and scanty menstruation for about one year. At different times, she took ferruginous preparations, with decidedly good effects; but, as soon as relieved, she would leave off taking the medicine, and her trouble would return. She also

had ague once or twice during the summer, it being very prevalent at that time in the neighborhood. For it she was specifically treated, and from it she soon recovered.

For the chlorosis I sometimes give *mistura ferri comp.* (Griffith's), sometimes *tract. ferri* and *quinize disulph.*; lastly, I was giving her *syr. ferri iodidi*, with cod-liver oil. In September last, from exposure to wet and cold, her menses ceased, and all the symptoms of progressive locomotor ataxia set in. Her parents, who live in the country, came for more medicine, and casually told me that their daughter walked with great difficulty, and that her menses did not come on at their usual period; consequently I went to see her, and, in her attempting to shake hands with me, she grasped me by the wrist. This excited my fears immediately that she had Duchenne's disease. Upon further examination, my diagnosis was verified. The patient, in attempting to walk, staggered and swayed her body from side to side to keep her equilibrium. She would suddenly halt to recover herself, and then would plunge forward, seemingly in a great hurry to reach the point to which she desired to go. She was unable to feed herself, from the want of coordinate action of the muscles; and, in fact, unless she was watching her hands continually, she was liable to drop whatever she had in them. Her speech was also affected; she was not able to articulate some words perfectly.

What is passing strange in this case is, that I was giving her *syr. ferri iodidi* at the very time that the disease manifested itself; the very medicine that Dr. Julius Althaus used with so much benefit in his case, the only one recorded, until lately, that had been much benefitted by medicine.

As soon as I recognized the disease, I gave *potass. bromid. grs. xv.*, *ter in die*, and submitted the patient to the action of magneto-electricity once every twenty-four hours. I also gave two pills of aloe and iron, which produced too much relaxation, the effect continuing two or three days. This, in fact, seemed to prostrate her to such an extent that she was obliged to take her bed, and their remain for a time. Fortunately, just then I received the September number of the *New York Medical Journal*, and in it saw that Dr. Dujardin Baumetz had given phosphorus in the disease, with excellent effects. I immediately ordered *acidi phosphorici dilut. m. xv.*, *ter in die*, in simple syrup. The next day her menses came on, and in a short time she began to improve. In a few days I increased the dose to twenty, twenty-five, and then to thirty minims. After ten or twelve days, I omitted the acid, and gave her the pyro-phosphate of iron for a week, and then returned to the acid. I continued the electricity every alternate day. In two weeks she was able to sit up, and had sufficient control over the muscles of her upper extremities to be able to knit. In one month she could walk about the house tolerably well. Now it is something over two months; she can take long walks, do housework as well as ever, and has become very fleshy. The electricity has been discontinued for about one month, and she is not at all regular with her medicine at the present time. However, I have the most sanguine hopes that she will perfectly recover. The improvement has been so great that it is impossible to discern anything wrong with her, except a very slight irregularity in her walk.—*New York Medical Journal.*

Two Cases of Labour, in both of which *Hæmatocele* of the *Labia Pudendum* occurred after Delivery, and in one Puerperal Convulsions seemed to be promptly arrested by the administration of a large dose of Bromide of Potassium.

By WILLIAM H. GRANT, M.D.,
OF OSSISPEE, N. H.

CASE I.—September 14, 1867, about 10 o'clock P.M., I was called to Mrs. D., a very small, slender woman, æt. 16, in her first confinement. She had had regular pains for six hours. On examination found the os uteri dilated to the size of a half dollar; very rigid; the pains continuing strong until 5 o'clock A.M., with little progress. She was put under the influence of a mixture of chloroform and ether. In about a quarter of an hour the rigidity of the os yielded, and the head could be felt presenting. In an hour the head passed below the superior strait, occiput to sacrum, the pains continuing regular; and at 5 o'clock P.M. she was delivered of a male child weighing 8½ pounds. She took ʒvj of ether, and ʒij of chloroform, holding the inhaler herself, which was made of a piece of birch bark in the shape of a truncated cone, with a piece of sponge fastened midway. About two hours after I left her, I was again called, and informed that she was in greater agony than before delivery. On examination found a sanguineous tumour of left labium, the size of the child's head. A fomentation of chamomile flowers was ordered, which relieved the pain, and the next day the size of the tumour was diminished; the third day it was opened, and discharged a large quantity of coagulated blood and serum. Fomentations were continued for a few days, when the tumour all subsided, and she got up very quickly.

CASE II.—A few minutes before the subject of Case I. was delivered, her sister-in-law, then just nine months advanced in pregnancy with her first child, came into the room, and remained a few minutes. She became very much excited, and that night was seized with a very severe chill, after which she did not feel any motions of her child. I was called to attend her on the 27th September, at midnight, when she had suffered regular pains about eighteen hours. She was a short, very fleshy woman, weighing 160 pounds; eighteen years of age. On examination found head presenting at the superior strait, occiput to sacrum. Not having been informed of her having experienced chills, and since that time she had not felt any motions of the child, I trusted the case to nature. The pains were very strong and forcing, and towards 3 o'clock A.M. the bag of waters broke, relieving her of an enormous quantity, and very perceptibly diminishing her size. The pains now became more severe, and not being able to prevent her from striking and biting every one who came near, she was, about 5 o'clock, put under the influence of an anæsthetic, as in the first case, using the same apparatus, and allowing her to hold the inhaler. In the evening of the same day, the head had not passed below the superior strait, and was firmly impacted. By the use of the vectis the occiput was brought down, and its shortest diameter occupied the longest diameter of the pelvis. It made very slow progress from this time.

until the morning of the third day, the occiput then occupying the hollow of the sacrum. About this time the anæsthetic gave out, and no more could be obtained, she having used ℥xvj of ether, and ʒij of chloroform. She was now as uncontrollable as before, and it was impossible to apply the forceps. She was, however, delivered by the natural process about 11 o'clock P.M. of a male child weighing 10½ pounds, in an advanced state of decomposition. She lost a large quantity of blood, and during the time drank several gallons of water, which was immediately rejected, until it became necessary to allow her a few swallows only occasionally, notwithstanding her earnest entreaties for more. In about three hours after I left her, was again called, and found her in convulsions. As soon as possible she was made to swallow 10 grs. of the bromide of potassium in solution, when the convulsions ceased. The medicine was continued in 5 gr. doses through the night. The next morning she was in great distress, and, on examination, I found both labia the seat of sanguineous tumours the size of a man's fist. These were treated with fomentations of chamomile flowers, and entirely subsided in about a week. The day after delivery, the abdomen became very tender and painful, with a quick, hard pulse, and high fever. A large soap poultice was applied over the whole abdomen, and the veratrum viride, with spts. nitre, administered every four hours. The next day the symptoms were more favourable, and she gradually improved, with the exception of complete paralysis of the sphincter of anus and bladder, passing the contents of both involuntarily; from this she has but partially recovered up to this date, January 23, 1868. —*Amer. Jour. of the Med. Sciences.*

Laryngeal Tumour removed by opening the Larynx, after the insertion of a tube into the Trachea.

By JOHN L. ATLEE, M. D.

OF LANCASTER, PENN.

F. McF., æt. 15, small for his age, previously a hearty, robust child; became hoarse about eighteen months before I saw him, in September, 1868, and for the last sixteen months he has not been able to speak above a whisper. In August he experienced some difficulty in breathing, and this steadily increased until his nights became almost sleepless. He also lost flesh at the rate of two pounds a week.

When brought to me, he was voiceless, had a croupy cough, his ordinary respiration, quite laborious; pulse small, frequent, and rather feeble; appetite poor, and the countenance pale and indicating distress. The sounds of the lungs were normal both by auscultation and percussion. The difficulty seemed to be entirely restricted to the glottis. I attempted to use the laryngoscope, but the irritability of the fauces and difficulty of respiration made it impossible to obtain a satisfactory view of the parts. A solution of the nitrate of silver was applied to the glottis, but a spasm was excited that terrified the patient greatly and somewhat alarmed me. I directed the father to bring him to me again in a few days, and in the mean time the finger was to be frequently applied to the fauces, so as to accustom them to the presence of a foreign

body. When he returned, on the 29th September, his respiration was more laborious, indeed so very difficult was it that he was evidently about to die very soon for want of air, unless some means soon succeeded in giving relief. An attempt was again made to use the laryngoscope but unsuccessfully, its presence could not be borne long enough for an examination.

I told the father that it would be best to open the trachea, and insert a tube, through which the boy could breathe freely, and thus regain his strength. After that some means would be found of getting at the mischief in the glottis.

On the 3d of October, I opened the trachea and inserted a tube. At this time, he could breathe only by resting his head upon his hands, his elbows upon his knees and leaning very far forward. A mixture of ether and chloroform was attempted to be used by inhalation, but so much spasm of the glottis was excited that it was laid aside. As soon as the air rushed into the lungs he opened his eyes, put his hand on my arm, and nodded his head, evidently very much relieved. The presence of the tube was readily tolerated, and exhausted by previous loss of rest, he almost at once fell into a deep sleep.

November 17, I opened the larynx in the usual way, the patient being partially under the influence of an anæsthetic. On exposing the interior, masses of abnormal tissue presented themselves at the opening, during the efforts of coughing made to get rid of the blood flowing into the trachea. These were seized with the forceps from time to time and removed. Three portions, the first as large as a small filbert, the others the size of peas, were torn from their attachment to the mucous membrane. The ventricle of Morgagni on the left side seemed filled by this tissue. The whole amount removed would fill a large sized sewing thimble. As determined afterwards, it weighed twenty grains.

After thoroughly cleansing the interior, a stick of nitrate of silver was rubbed thoroughly over the whole surface, and the external wound was closed by two harelip sutures and adhesive strips.

The tumour removed, on examination, displayed under the microscope the anatomical elements found in epithelial growths.

I saw this patient on the 21st January. He had entirely recovered his voice, and was going to school. He had been kept from school for a year and a half on account of loss of voice. When first seen he was pale, emaciated, and rapidly losing flesh. He had become rosy, robust, and weighed 86 pounds, in place of 64. He appeared in every way perfectly well. —*Med. and Surg. Reporter.*

Medical News, Items, &c.

A Simple Cause for Severe Convulsions.

Dr. Nathaniel Field, M. D., of Jeffersonville, Ind. (*The Western Journal of Medicine*), states that some years ago a small boy about five years of age, living in his town, while in apparently good health, was suddenly attacked with an epileptic fit, from which he soon recovered. The parents were much surprised at the occurrence, and were unable to account for it. About two weeks afterwards he had another

strung convulsion, lasting several minutes; but it passed off without any constitutional disturbance. No cause for the attack was detected by him or other practitioners. In a day or two the fits returned, and were repeated at short intervals for about ten days, during which time he is confident he must have had a thousand. Every resource in his power was exhausted to relieve him, and three eminent medical professors examined the child from the crown of his head to the soles of his feet, but no local irritation was detected. After carefully watching the commencement of the paroxysms, he observed that the muscles of the left side of the face invariably began to twitch on the recurrence of a fit. After a convulsion had passed off, and while in a state of unconsciousness, he raised the upper lip as high as possible, and lo, and behold! the corona of the second canine tooth, instead of having caused by its pressure the absorption of the root of the deciduous tooth, had passed behind it and forced it through the alveolus and gum and into the lip. The gum was slit vertically and the old tooth removed. In less than an hour the convulsions began to subside, and before day they were entirely gone, and never appeared again.

It is a humiliating reflection, he says, in conclusion, that five old and respectable practitioners, and two of them professors in medical schools, should allow a child to have fits for ten days, the result of so simple a cause, and not sooner detect it.—*Medical Record*.

How to Disguise the Taste of Quinine.

Dr. R. W. Parke, of Mobile, Ala., says that chocolate will completely disguise the taste of this medicine.

Let the patient obtain a few "chocolate drops" from the confectioner, and he can take quinine in solution without tasting it. Immediately after each dose is swallowed, put two or three chocolate drops in the mouth and chew them up, and the bitter taste of quinine will no longer be perceived. Chocolate, perhaps, would answer the same purpose, but I have not tried it. Any one can satisfy himself of the truth of the above statement by filling the mouth with a solution of quinine, and using the chocolate drops immediately after ejecting it. By this simple means, the solution of quinine can be used, when otherwise the pillular form would have to be resorted to. Oftentimes it is desirable to get the patient quickly under the influence of the remedy, which could not be done where pills are used.—*Med. and Surg. Reporter*.

Mr. Lister's Carbolic Acid Lac Plaster.

The following is the formula for its preparation: Take of shellac three parts, and crystallized carbolic acid one part. Heat the lac with about a third part of the carbolic acid over a slow fire till the lac is completely melted; then remove from the fire, add the remainder of the acid, and stir briskly till the ingredients are thoroughly mixed. Next strain through muslin, and pour into the machine for spreading plaster; and when the liquid has thickened by cooling to a degree ascertained by experience, spread to the thickness of about one-fiftieth of an inch. Afterwards brush the surface of the

plaster lightly with a solution of gutta-percha in about thirty parts of bisulphide of carbon. When the sulphide has all evaporated the plaster may be plied in suitable length in a tin box.

For an antiseptic dressing that is intended to be changed from time to time, perfect absence of addressing or upon the skin during the process of withdrawing it, with the concomitant risk of regurgitation of air or liquid charged with living putrefactive organisms.

But for the permanent dressing in compound fracture, this complete want of adhesiveness is the converse of what we desire. Here, the material employed, being designed to form part of the scab, should stick to the skin or to anything that lies beneath it. The lac prepared as above described hesiveness is a most valuable property; not only because it permits all discharge to escape beneath it into the porous material placed outside to absorb it, but because it avoids traction upon any deeper may, however, be readily made suitable for this purpose, by rubbing off the film of gutta-percha by firm friction with a dry cloth, and then brushing the surface over with liquid carbolic acid. It then, at once, assumes a sufficient degree of adhesiveness.—*Brit. Med. Journ.*, Nov. 14, 1868.

Death from Gonorrhœa.

Samuel Jepsun, M.D., of Cincinnati, alludes to the following death from gonorrhœa: A male, aged 40, was admitted into the Cincinnati Hospital with gonorrhœa and painful prepuce, accompanied with marked swelling and redness. In a few days the entire organ was affected, the inflammation invaded the abdominal walls in right inguinal region, and finally implicated the scrotum. He never had any sore, either on the glans or the prepuce.

The prepuce and distended scrotum were freely incised, quite a quantity of serum evacuated, and a fomenting poultice was ordered to be applied to the affected parts, with tinct. ferri chlor., gtt. xx. , whiskey ʒ ss. , and beef essence ʒij. , every three hours. In ten days after admission he died of exhaustion. At the time of death, one-half of the glans penis was destroyed, also the anterior portion of the scrotum, exposing to full view the testicles, or what was left of them—for the right one had entirely sloughed away, and the left one was assuming a gangrenous appearance, when death interfered and ended the patient's sufferings.—*Cincinnati Med. Repository*.

Prescribing in Cheap Periodicals.

A most dangerous practice prevails of publishing in some of the cheap literature of the day various receipts for the cure of minor ailments, and it is one that is certainly upon the increase. Many of the prescriptions so given are absurd, and even dangerous; and this is not to be wondered at if we consider that the writer is often very deficient in all real knowledge of medicine, and that he is assisted by the errors of the printer to whom the symbols of quantities are so many hieroglyphics. Our attention has been called to the following prescription for instance: "Syr. of poppies one ounce and a half; syr. of squills, half an ounce; tincture of digitalis, thirty drops a teaspoonful to be given to a child frequently." We can quite imagine a fractious baby being dosed into the effectual quietness of death by such mixture.—*Lancet*.

Bread-Making.

When meat is soaked a long time in water, it loses its nutritive salts—the phosphates; and when corn is ground into flour, it loses its bran, which contains an amount of phosphates of lime and magnesia nearly three times larger than does wheat-flour. The famine in East Prussia, about eighteen months ago, led Baron Liebig to investigate the question of bread-making, the results of which he has published. We are indebted to a recent number of the *Chemists' and Druggists' Advocate* for the facts. In Baron Liebig's opinion, the trade of the baker is the only one which has not been touched by progress in the course of a thousand years. We eat to-day the leavened bread mentioned in the Bible, and described by Pliny, the flour being different, but, from a physiological point of view, not better. We have ourselves long been of opinion that a vast saving would be effected if families would buy corn instead of flour, and grind it for themselves in a mill; and we believe that an attempt will soon be made to introduce a machine for the purpose. The simplest way of obtaining the full value of wheat is simply to grind the corn and bake it; but neither the persuasions of chemists nor the considerations of economy are capable of making people eat what they do not like—and they do not like brown or black bread. The nutritive value of flour is said to be at least 12 or 15 per cent. less than that of corn; but as people object to the presence of the bran, an attempt as been made to restore the nutritive value of corn by adding the phosphates simply to the flour.

A bread powder has been made by Professor Horsford, of Cambridge, North America, which, according to Liebig, makes a first-class bread of agreeable taste. This bread powder consists of two preparations; the one contains the phosphates, the other bicarbonate of soda. These are mixed with the flour, water is added to make the dough, and the loaves are baked. The carbonic acid is displaced by the phosphoric during the process, the bubbles of which make the bread porous. The two chief advantages are that the bran still contains the phosphates of the corn, and no loss of flour takes place by fermentation caused by the use of leaven or yeast.—*Lancet*.

Acupressure at the New York Hospital.

Since the first of December acupressure has been employed at this hospital, in two amputations at the shoulder-joint, in two of the thigh, and in one at the knee-joint, with complete prevention of hemorrhage in every case. All the cases but one, which died of pyæmia, either have recovered or are in a fair way to do so.

The Solubility of False Diphtheritic Membranes.

A short review of the work of MM. Brichesteau and Adrain on this subject is contained in the *Journal de Chimie et de Pharmacie* for May. The following experiment is of interest. "A tracheal false membrane, weighing about twenty centigrammes, thick, resistant, and representing a square centimetre of surface, was placed in a tub containing about five grammes of water. To this were

added about two drops of lactic acid; the solution was then agitated. In two minutes the membrane began to disintegrate, and gave signs of dissolution. A few more drops of the acid brought about the complete solution of the membrane. A more complete result was obtained by using lime water, so as to form lactate of lime. Solutions of potash and soda acted much less powerfully. Bromine water, chlorate of potassa, and common salt, were all found less active in promoting solution of the membrane."

The solution of lactic acid is therefore recommended as the best topical application to the membranes of diphtheria.—*The Practitioner*.

Supervision versus Cure.

A droll defence to an action for the recovery of medical charges has lately been set up. A Major Beauclerc (of what corps did not appear) brought a sick child to Werthing, and engaged Dr. Goldsmith to attend professionally. Dr. Goldsmith did attend for two months, and the child recovered. At the beginning of the year Major Beauclerc wrote the following letter:—

"2, Bath-place, 3rd Jan. 1869.

"DEAR SIR,—Christmas having passed, which is the period when we make up our obligations, and as my dear child no longer requires much medical watching over, unless some relapse should occur, when we can again ask your attendance, perhaps you will let me know what I am indebted to you for your kindness, hoping at the same time that you will take the privilege of a friend to look in and have a chat with the little one whenever you are passing our door and have spare time on your hand, as Georgie says you certainly are one of the nicest doctors who has attended her.

"Yours truly obliged,

"G. BEAUCLERC.

"To Dr. Goldsmith."

Upon receipt of this, Dr. Goldsmith sent in a charge of £4 9s.; of which £3 appeared to be for twelve visits, and the rest for bottles of physic. An angry correspondence ensued; and, finally, the case was tried in the County Court at Werthing on the 8th inst. Major Beauclerc was his own lawyer, and, under the circumstances, seems not to have been an exceptional client. He first objected to pay for the visits on the ground that he had intended to write and stop them, and then on the further ground that the plaintiff had on one occasion wished Mrs. Beauclerc the compliments of the season. But the strong point of the defendant was, that he had only required from the Doctor a "general supervision" of the patient, and had not wished for his opinion.—"It seems exceedingly hard," said the gallant Major, "that I should ask for supervision, and then have to pay for cure. I never asked him to cure my child." Upon this, the Judge very sensibly remarked—"It is nonsense to talk in this way. You are charged for medicine and attendance. No medical man can be compelled to cure a patient. I think the charges are reasonable, and I find a verdict for the plaintiff."

Our readers will observe that the "great physic question" cropped up in this case, as in so many others that are disputed; and will feel, we are sure, that it would be better if the element of discord

could be removed from all discussions about professional remuneration. In the particular case of Major Beauclerc we cannot refrain from saying that it would be judicious, on the part of any practitioner hereafter honored by his confidence, to insist upon receiving a fee at each visit; and upon medicine, if made the subject of a charge, being paid for to the errand-boy on delivery. In worry and annoyance, and in the composition of letters and the loss of time, Dr. Goldsmith's modest charges have indeed been hardly earned.—*Lancet*.

Organic Synthesis.

The last number of Liebig's *Annalen* announces the fact, that the direct transformation of the acids of the fatty series into corresponding alcohols has been effected by *Linneemann*. It was accomplished by the action of sodium-amalgam on anhydrous acid. This important discovery supplies the missing link required to pass step by step up the ladder from the simplest alcohol (wood-spirit), up to the highest, wax alcohol.—*British Med. Journal*.

PROSTITUTION IN CHINA.—The *Union Medicale* has an article translated from the German, describing prostitution in China. The evil exists to an enormous extent in the cities of the Celestial Empire. The dwellings where the traffic is carried on are hardly "houses of ill-fame." So far from their being kept shady they are made conspicuous by blue window shades, whence they are called "blue houses." At night the curtains are raised in the front windows, the reception apartments are made brilliant with lights, and the building resonant with what is called music. Their patrons enter day and night without concealment. The prostitutes are entirely in the power of the proprietors of these establishments, and are often sold, when children of a dozen or more years, to be trained up to their miserable occupation. When no longer serviceable these creatures are turned off to wear out their existence in the streets, picking up a meagre pittance by mending garments and sundry menial offices.

As a concomitant of the social evil in China the most unbrinled obscenity of language appears in books and in the family circle, the presence of children placing no check upon it.

As a consequence of this state of things, venereal disease is rife and in a virulent form; but is said to be worse among women frequented by Europeans. The Chinese accordingly avoid those women whose traffic is among foreigners, to whom they endeavor to leave the inferior article.—*Boston Medical and Surgical Journal*.

IMMENSE NUMBER OF WORMS IN AN INFANT.—Dr. Dow reports a case to which he was called, where the patient was an infant ten months old, and who was in a somnolent condition; abdomen tumefied, and during sleep would writhe in its mother's arms; mouth twitching. Inquiry revealed the fact that the child had been allowed to eat an unlimited quantity of vegetables of all kinds, and green and ripe fruits. The pulse was about 130, and she had vomited worms. An emulsion of turpentine, every four hours, followed by calomel, was ordered. The next day she had had several pas-

sages, consisting principally of lumbricoides, with a little mucus, the former partly dead and living. The urine was high coloured: appetite normal; worms continued to be evacuated. Three days after the emulsion was discontinued, and spigelia, senna, and santonine substituted. With this treatment the worms passed freely, and for five days she passed little but the worms, many of which were 4 inches long, and none under an inch. The patient made a good recovery.—*Richmond and Louisville Medical Journal*.

ROBLEY DUNGLISON.

Died, in this city, April 1st, Robley Dunglison, M. D., Emeritus Professor of Institutes of Medicine in Jefferson Medical College, in the 72d year of his age. Obituary next week.

JEFFERSON MEDICAL COLLEGE.)
Philadelphia, April 2. 1869.)

Whereas, It has pleased Almighty God to remove from among us in the evening of his life, and in the fruition of a world-wide reputation, our friend and late associate, Dr. ROBLEY DUNGLISON, Emeritus Professor of the Institutes of Medicine in the Jefferson Medical College, and late Dean of this Faculty; and

Whereas, He was warmly endeared to us by his high social qualities, his stern integrity of character, his unceasing devotion to his official duties, his uniform urbanity and kindness, and the great purity of his life; and

Whereas, In his death the Medical Profession has lost one of its most learned, zealous, and exemplary members, Medical Literature one of its most able promoters; Medical Science one of its most successful cultivators, and Medical Philosophy one of its most faithful interpreters; therefore,

Resolved, That this faculty will attend the funeral of their friend and colleague in a body, and that one of their number be appointed to deliver, at the opening of the next session of the College, a discourse upon his life and character.

Resolved, That a copy of these signatures, authenticated by the signature of the Dean, be transmitted to the family of the deceased, with an expression of our heartfelt sympathy in their bereavement, and that the same be published in the different papers, and in the two medical papers of this city.

SAMUEL HENRY DICKSON, M. D.,
Dean of the Faculty.

—*Medical and Surgical Reporter*.

Books, Pamphlets, etc. Received.

On the treatment of paralysis by electrization, with an explanation of a new galvanic apparatus, being a paper read before the New York Academy of Medicine by A. D. Rockwell, M. D.

THE PROBE—An inquiry into the use of stimulants and narcotics. By Joseph Parrish, M. D.

A PRACTICAL TREATISE ON DISEASES OF WOMEN. By T. GAILLARD THOMAS, M. D. Philadelphia: H. C. Lea. Toronto: W. C. Chewett & Co.

In our last number, we omitted to credit the clinique of Prof. Davis, reported by W. A. Barstow, to the *Chicago Medical Examiner*.