CASE.—A housekeeper, aged 38, single, came under my care in November last. Sixteen months ago, she first noticed a swelling in the right breast, which gradually grew larger, and was excised in February 1874. Five weeks later, a fresh tumour had already formed, and was likewise removed by excision. Soon afterwards, numerous cancerous nodules sprang up about the cicatrices in the axillary glands, and also in the left breast; and, as further surgical operations appeared unadvisable, Mr. Irvine sent her to me. When I first saw her, on November 23rd, the cancerous cachexia was strongly marked. There was intense weakness and depression of spirits; the face bore an expression of agony; the complexion was sallow; there was complete loss of appetite, great wasting, restlessness at night, a pulse of 120, and sixty respirations in the minute. Towards evening, well marked febrile movements set in, and there was excruciating pain, more especially in the left shoulder.

Under these circumstances, no treatment could be expected to produce a decided change in the aspect of the case; but, as the patient and her friends were most anxious that something should be done, electrolysis was suggested. On November 30th, I introduced a needle connected with the cathode of Becker-Muirhead's battery into one of the cancerous nodes on the right side of the chest, and placed the anode to the left shoulder. The power of current was gradually raised from ten to thirty-five cells, and it was allowed to circulate for ten minutes. Immediately afterwards, the patient expressed herself as considerably relieved. I saw her again two days later, when she informed me that she had had less pain ever since, had slept better, and felt stronger and more cheerful. On December 14th, the cancerous node which had been electrolysed had disappeared, the tumour in the left breast was smaller, the pain was gone, the pulse had fallen to ninety beats, and the inspirations were only thirty-six in the minute. The patient said that she hardly felt any discomfort at all; looked wonderfully better, and entertained hopes of perfect recovery. During the intense frost which prevailed at that time, she caught a severe cold, which prevented her from coming to see me again, and she died on January 15th, 1875, from congestion of the lungs, but without a return of the pain. I should add that I also prescribed for this patient morphia, chloral, and quinine; but these remedies appeared to do little good, while, immediately after each electrolytic application, a decided change for the better took place.

I have now put before you as concisely as possible what I believe to be the advantages and limits of usefulness of the electrolytic treatment, and trust that you will henceforth use it more extensively in suitable cases than has hitherto been done.

USE OF PERCHLORIDE OF IRON IN *POST PARTUM* HÆMORRHAGE.

By LOMBE ATTHILL, M.D.,
Master of the Rotunda Lying-in Hospital, Dublin.

THE case recorded by Mr. Boddy, in which death followed almost instantaneously on the injection of a solution of the perchloride of iron, conveys a very important lesson. It is, as far as I am aware, the first recorded case in which there are just grounds for believing that death was due to the use of the styptic; but, even here, the cause of death remains doubtful, there not having been a *post mortem* examination, a matter greatly to be regretted. Mr. Boddy's conclusion that "without doubt death resulted from the action of the solution of iron upon the lining membrane of the uterus" is not, in my opinion, correct. First of all, the uterus has not, immediately after delivery, any "lining membrane" properly so-called; next, Dr. A. H. Ringland has, in several cases of *post partum* hæmorrhage recorded by him, carried the solid perchloride into the uterus and applied it direct to the interior of the uterus without producing any injurious results (*vide Proceedings of the Dublin Obstetrical Society*, session 1873-74).

I am not in a position to give an explanation of the cause of death in Mr. Boddy's case; but I believe it proved from Dr. A. H. Ringland's cases, in which he applied the solid perchloride to the inner surface of the uterus, and from my own (*Dublin Medical Journal*, April 1874), in which I injected a small quantity of a strong solution into the uterus, that the application of the styptic to the inner surface of the uterus is not *per se* a dangerous practice.

I would point out that in Mr. Boddy's case an unnecessarily large quantity of the styptic was injected; for, though "the hæmorrhage ceased immediately on the injection of the solution", the process was continued till the patient gave a shriek and died; and to this continuance of the injecting process after the purpose for which it had been employed was attained, the fatal result, in my opinion, is to be attributed,

which probably would not have occurred had but three or four ounces of a strong solution (one part of the strong liquor to two of water) been employed.

I think the profession are under a great obligation to Mr. Boddy for publishing this case.

THE TREATMENT OF SPINA BIFIDA.*

By JAMES MORTON, M.D.,
Surgeon to the Royal Infirmary, Glasgow; etc.

PREVIOUSLY to October 1871, it was the habit, with others as well as myself, to regard cases of spina bifida as hopeless, and to discountenance the idea of surgical interference. It was well known that they had been dealt with in a variety of ways, some of these reckless and rash, others more or less prudent, almost all proving in the end unfortunate. It was also known that in some few instances a spontaneous cure had taken place, but these were truly, like angels' visits, few and far between. It was universally admitted that very many died, in truth by far the greater number, the precise numerical proportion being difficult to arrive at; the conviction being general that only a very small percentage lived for any great length of time. As a proof of this, the prognosis usually given was a very hopeless one, and seldom falsified by the result.

So entirely had this view of the malformation taken possession of practitioners, that it was the custom to limit their efforts to what was called the palliative treatment, such as protection, or defence from injury, carried out in various ways, so as to avoid ulceration and bursting of the sac with its fatal ending. Up till the date mentioned, I was a follower of the do-nothing system; but, on October 2nd, 1871, a case was presented in the Glasgow Royal Infirmary, which prompted me to reconsider the question, more especially as the child was otherwise healthy, and I felt a strong desire to give it a chance. On turning my attention to the numerous methods previously employed, too numerous to mention here, it appeared to me that injection was the safest, as that could be effected without permitting the complete escape of the fluid contained in the protrusion. The kind of fluid to be injected next demanded consideration, when it occurred to me that a solution of iodine, less diffusible than either a spirituous or watery solution, would best suit my purpose, as being less likely to permeate the cerebrospinal fluid with rapidity, and, therefore, less likely to cause shock or bring on convulsions. With these views, I caused the following solution to be prepared, which is now known as the iodo-glycerine solution.

R. Iodi x gr.; potassii iodidi xxx gr.; glycerinæ j ʒ.

From half a drachm to two drachms of this fluid have been used, according to the size of the spinal protrusion.

Previously to injecting, I considered it prudent to make a tentative puncture, to ascertain whether such interference would be tolerated, and followed this course in the first case and most of the others. To close the openings made both by grooved needle and by trocar, collodion and flexible collodion have both been used, and have served the purpose, so that either may be employed. This mode of treatment was first employed by me in October 1871, and the details of the case are given in the abstract of a clinical lecture which appeared in the number of the BRITISH MEDICAL JOURNAL, dated April 6th, 1872, after having been shown to the members of the Glasgow Medico-Chirurgical Society on February 1st of that year.

The second case was shown to the same Society on May 30th, 1872, and was published in the JOURNAL named on June 15th succeeding.

Dr. J. R. Watt of Ayr successfully followed the same plan in two cases; one of which appeared in the BRITISH MEDICAL JOURNAL of April 26th, 1873, the other in that of January 31st, 1874, with a well executed photograph of the patient after cure.

Another case treated under my own care is published on October 24th, 1874, in the same JOURNAL. More recently a case has been successfully treated by Mr. Angus of Newcastle, which appeared in the JOURNAL for April 17th, 1875; and, in a private note with which he kindly favoured me, he expressed his confidence in the method employed if conducted with due care.

Since the beginning of this month (July 1875), I have treated another case with the like good fortune, and without a disagreeable symptom. The fluid was twice analysed by Professor Ferguson of Glasgow, but gave no indication of the presence of sugar.

During the past winter, a large cervical spina bifida was presented to me, which was several times injected without any appearance of

* Read in the Surgical Section at the Annual Meeting of the British Medical Association in Edinburgh, August 1875.

shock or suffering, but it ultimately succumbed to convulsions caused by the continued escape of the subarachnoid fluid. The domestic circumstances of the mother demanded her presence at home, and unfortunately she was allowed to leave the hospital with her child, and the following night the mischief took place; and, though the flow was stopped, it had already prostrated the child. Every reasonable effort was made to obtain a *post mortem* examination, but without success. I may mention that several analyses of the subarachnoid fluid withdrawn from this child were made, resulting in doubtful indications of the presence of sugar, or of some glucose matter which reduced copper oxide. At present, I have under observation another instance of this defect in the lumbar region; the child is about ten days old, and it has not yet been interfered with.

But the question may be put, How is the cure produced? or, What is the *modus operandi* of this solution when injected? The reply which most readily suggests itself is, that it is analogous to the process occurring in the tunica vaginalis consequent upon the operation for the radical cure of hydrocele.

Though the quantity of albumen in the subarachnoid fluid is small, a coagulum seems to form; adhesive lymph may be produced or deposited, and, at all events, arrest of further collection of fluid results from successful injection. This may be accompanied or followed by closing of the opening or channel of communication between the spinal canal and the protrusion.

The anatomy of this defect at once presents itself as a matter for consideration; and, on this point, I have made some inquiry, and have been rather disappointed to find that anatomists of very prolonged experience had little or nothing to offer me in the way of personal observation of its dissection. Figures of the parts have been given in books, with appropriate descriptions. All authors seem to agree in the local deficiency of the spinal canal, and the protrusion of the covering of the cord, containing a quantity of the spinal fluid, and the cord (or portions of its immediate branches), though it has been affirmed that occasionally the latter is absent. I am not aware upon what evidence this statement rests, and, meantime, prefer to believe in its presence while awaiting further investigation. Such belief may induce caution in treatment, though it need not lead us to doubt the possibility of cure, as a recent writer in the *BRITISH MEDICAL JOURNAL* seems to do. To assume the absence of the cord, or parts of it, in seven consecutive cases, is so entirely beyond the range of probability as to be altogether inadmissible, while possibly it was present in all. At the same time, I shall feel personally indebted to any one who may procure authentic information on this point, such information as may amount to a demonstration or dissection of parts. I am able to show you here a dorsal case, or rather a preparation of it. The child died, exhausted by the escape of the cerebrospinal fluid; no attempt having been made towards cure. The cord is seen projecting into the tumour, and attached to its walls. I am glad to say that, as yet, I cannot show an injected case, that is, a dissection of a case after successful injection, however much that may be regretted in an anatomical point of view. On this point, authors write very much as follows, which can be seen in Dr. Churchill's work on *Diseases of Children*, and there given on the authority of Dugès. "The condition of the spinal marrow is of considerable interest. Ollivier states that, when the case is not complicated with hydrocephalus, he has generally found the spinal marrow traversing the sac unaltered, except that in some cases it seems lengthened. But, if coexistent with hydrocephalus, or if the canal of the spinal marrow be distended with fluid, the cord may be flattened out, as it were, so as apparently to line the sac. In some few cases", continues Dr. Churchill, "the spinal cord seems to have left the canal, and to be contained within the tumour, forming what some authors have properly called hernia of the spinal marrow. This happens only when the deficiency is at the lower end of the spine."

In a lecture on pathological anatomy published in London this year, Drs. Wilks and Moxon write: "A funnel-like depression or umbilicus in the middle of the tumour, will generally signify the point of insertion of the spinal cord on the walls of the sac." This is worthy of recollection by those about to operate. There is evidently some variety in the position of the cord and the distribution of its branches.

The statistics of the operation at the present time are the following. This mode of injection has been employed in ten cases. Of these, seven have been successful, and entirely so; the cases being uncomplicated by paralysis or any other deformity, and, so far as known to me, remain well. Of the other three, one has been already referred to as dying from a preventable cause, a well known danger; another occurred in the hands of Dr. Watt, who states that the child was otherwise diseased at the time; and the third is the case published by Mr Burton of Liverpool, manifestly a case in which the spinal protrusion

was but a small part of the whole deformity; though, seeing the child in *extremis*, he considered it his duty to give it even a forlorn chance. We are thus in the position of recording 70 per cent. of cures, and at the worst 30 per cent. of mortality; and, when we revert to the past history of spina bifida, such a result is sufficiently gratifying. I ought to add, however, for the encouragement of others, that all my own lumbar and dorsal cases have proved fortunate hitherto; that they will always do so, I am not sanguine enough to expect, though I can now approach their management with less misgiving. I have been exceedingly pleased to find that this method of treatment has succeeded in the hands of others, and have to thank Dr. Watt and Mr. Angus for the publication of their cases.

In managing a case of spina bifida, the following points are important.

1. The child should be in a thriving condition.
2. Make a tentative puncture with a grooved needle.
3. Draw off not more than half of the fluid contents.
4. Carefully close the puncture by collodion or otherwise, so as to prevent further escape of fluid.
5. When proceeding to inject, use a trocar with cannula of a medium size, not too small, otherwise the glycerine solution will not run readily through the cannula.
6. The parts must be carefully handled and protected by the nurse, and the injection repeated, if required.

P.S.—At the Edinburgh meeting, in August last, Professor Pirrie, of Aberdeen, drew my attention to a wet preparation of a similar case, in which the cord passed through the sac, and was attached to the outer wall of it.

ON THE USE OF NITRIC ACID AS A CAUSTIC IN UTERINE PRACTICE, AND ITS SUPERIORITY AS SUCH TO NITRATE OF SILVER.*

By JAMES BRAITHWAITE, M.D. Lond.,

Co-Editor of *Braithwaite's Retrospect of Medicine*; Assistant-Surgeon to the Leeds Hospital for Women and Children.

I BELIEVE that, in cases in which the use of a caustic is necessary for the cure of ulceration or erosion of the os and cervix uteri, that which is generally, but not invariably, the most suitable for our purpose is nitric acid.

I do not propose to enter upon the disputed question of the pathological importance of these affections, nor upon any other point in their treatment, such as the primary relief of congestion or inflammation. I cannot, however, with Dr. Routh (*Transactions of Obstetrical Society of London*, vol. xi, page 94), look upon the use of caustics as solely for the purpose of relieving congestion by means of the discharge produced, in which case nitric acid would be useless, for it produces no discharge. I find that by curing the ulceration we cure the congestion, generally, but not always, without other treatment.

I think it will be admitted that nitrate of silver is the caustic in most general use, and that it is unnecessary I should take up your time by references to writers on the subject to prove this.

The great fault of nitrate of silver for the purpose in question is the fugitive nature of its action. Its influence seldom extends beyond five or six days, even when rubbed upon and held in contact with the parts. Again, nitrate of silver is more a stimulant than a caustic, causing extreme turgescence of the capillaries immediately below the surface actually influenced. This is evidenced by the frequency of hæmorrhage, often sufficient to obscure the parts before it has been removed from contact with them. The escharotic action of nitrate of silver, such as it is, is too superficial to destroy the diseased surface, and by the production of a slough to stimulate the parts beneath to the healthy activity necessary for its separation. At the second examination, we often find the ulceration or erosion very little, if at all, altered in appearance.

The action of nitrate of silver is thus defective for our purpose—1, in duration; 2, in quality; and 3, in degree; and these faults must be atoned for by its frequent reapplication. This necessitates each time the use of the speculum, distasteful alike to patient and to attendant. I believe in this really lies the source of the opinion held by some eminent men that these diseases require little or no local treatment. Our opinions are often unconsciously influenced by our wishes. Dissatisfaction with nitrate of silver has caused the trial of other applications such as sulphate of zinc points, nitrate of mercury, potassa cum calce,

* Read before the Section of Obstetric Medicine at the Annual Meeting of the British Medical Association in Edinburgh, August 1875.