way in which that benefit comes to pass. It will not do to set up the conceit of a little philosophy against the moral obligation of doing good.

In medicine, this incurable region is not only a pretty large one, but there is often as good reason for trust of things transacted therein it as of things done in more open day. And no disparagement of our profession is contained in this truth. A vast experience of results is needed as the groundwork of a sound faith in cure by specifics and special remedies; and surely such experience is a thing at least not opposed to knowledge.

Specifics or special remedies always seem to me to contain within them a promise or prophecy of future knowledge, waiting for time and opportunity and suitable minds to work it out. But, in the meanwhile, the results are so full of benefit to mankind, that they are allowed to have a premature accomplishment; and so we are put in trust of them and their great power and mystery of doing good, and find ourselves able to use them aright upon the simple condition of a large general experience. But the work is greater than the workman. It must be so at present; and there is good reason to be content. It may take ages to bring out the explanation how bark cures an ague; and the explanation, when it comes, may carry with it the discovery of new physiological truths. But these truths, known at last, may leave the practical uses of the remedy where they were. Thus, for wise ends, things seem to work in an inverted order; and the uses of knowledge take precedence of knowledge itself.

CURIOUS ZOOLOGICAL DISCOVERIES. When, some time ago, the telegraphic communication between Cagliari and Bona, in Algeria, was suddenly interrupted, after subsisting for the space of two years, measures were resorted to for the purpose of getting the cable up again, an operation which only succeeded partially. The portion of the cable recovered having laid in a submarine valley of the depth of from 6,000 to 8,000 feet, an excellent opportunity was thus offered for the study of the zoological species to be found at that depth. M. Alphonse Edwards, a French naturalist, who was on the spot at the time, has now published the results of his observations on that occasion. Among the extraneous bodies which adhered to the cable, he mentions several molluscs still living at the time they were brought up. One of them was the *ostrea cochlea*, a kind of oyster which is frequent enough in the Mediterranean at a depth of from 300 to 400 feet, but which had never been found at any depth approaching to that of the valley above mentioned. It must have fixed itself to the cable when very young; for its lower valve, about six centimetres in breadth, had completely assumed the shape of the cable's surface like a plaster-cast. There was also a *pecten opercularis*, a sea shell, one of the valves of which fits like a lid on the other, attached to the cable, and a much rarer one also, the *pecten testæ*. To these were added two gasteropodes, the *monodonta limbata*, and *fusus tamedosus*, both extremely rare, and containing the animal alive within. Of corals there were fourteen specimens belonging to three different species of the family of turbinolides, two of which are new; and one fossil, that is hitherto only found in ancient geological strata, mixed with other palæontological fragments. It has thus been ascertained beyond a doubt, that at a depth of 8,000 feet below the surface of the sea there exist living beings of sedentary habits, and mostly belonging to such species as have been very seldom found at more accessible depths.

Lecture

ON

VESICO-VAGINAL AND RECTO-VAGINAL FISTULA.

DELIVERED AT THE SAMARITAN HOSPITAL,

MAY 24TH, 1861.

BY

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[Concluded from page 252.]

THE wires having been passed, the next thing is to

Unite the Pared Edges by Twisting the Wires. In the great majority of cases, this can be done by the fingers alone. Wire is not to be tied in a knot, like thread or silk; a simple twist is enough to fix it securely. Each end of a wire is taken between the thumb and second finger of each hand, and the forefingers are passed on close to the fissure, the edges of which are brought together by crossing the wire. When the edges are seen to lie close together, not so squeezed that they are inverted, but simply drawn evenly together, a slight turn with the forefingers gives the first twist. The fingers are here shown just about to give this twist (*a*). Next (*b*) you see the twist complete, though the wire is opened out again to show the turn; and next (*c*), three or four turns have been made, and the ends of the wire cut off, thus completing the suture. (Fig. 13.) One after another, all the wires are so fast-

Fig. 13.

ened, and the ends cut off. This simple process fully answers the purpose in most cases. Where the fistula is so deep that the fingers do not reach easily, this instrument, Dr. Simpson's wire-twister, answers remarkably well. (Fig. 14.) There are two holes at the end of the shaft. One end of a wire is passed through one hole, the other end through the other hole, and the twister is then pushed on, while the wires are held tightly, till the edges of the opening are seen to be close together. Then two or three turns given to the handle fix the suture, as shewn in this larger view of the end. (Fig. 15.)

I believe this is all I really need say as to the mode of closing vaginal fistulæ; but the clamps of Sims, the button of Bozeman, and the splint of Simpson, have been so much talked about that,

though now almost disused, it is well you should be acquainted with them. Sims's clamp is nothing more than the old quill-suture, with metal bars instead of quills, and wire instead of string; and the wires are fastened by squeezing split or perforated shot on to them. (Fig. 16.) I show the suture; but the objections to it, or to any modification of it, are so great that it is put aside even by Sims himself. It is so difficult to hit upon the exact degree to which the two bars are to be drawn together, that ulceration or sloughing on the one hand, or imperfect closure on the other, were the rule. If the bars were too tight or too near the edges, the edges sloughed. If the bars were too far off, they were buried by the flaps, which became swollen, and were often destroyed. Even when properly placed, and

Fig. 14.

Fig. 15.

Fig. 16.

fixed just tight enough, some allowance being made for subsequent swelling, the swelling came on more or less than was expected, and failure resulted. There must be the same danger if pieces of bougie, or gutta percha, or India-rubber, be used instead of the metal bars. I once used with success this simple variety of the bar-suture. (Fig. 17.) I prepared

Fig. 17.

one perforated bar by passing a pin through it, and enlarging the head by a shot. Pushing the pin through both edges of the fistula, the second bar was placed over the pin; and a second shot having

been used to fix it, the end of the pin was cut off. I am disposed, with parental partiality, to regard this as about the best of the varieties of the quill-suture; but still as inferior to the simple twisted wire. Here is Bozeman's button. I used it twice; but, after the first trial, expressed the opinion, since become general, that the wire was the essential part of the suture, and the button an encumbrance. It is a perforated piece of thin lead. After bending the wires to bring the edges together, it was slipped over them thus (Fig. 18, a), and then fixed by shot, when the ends were cut off thus (Fig. 18, b). This button was afterwards modified by Mr. Hilliard, who placed small leaden tubes over each perforation; and Mr. Brown cut up the button into several pieces, applying each piece or "bar" separately; but all

Fig. 18. a.

b.

these contrivances are now laid aside, as is this wire splint of Dr. Simpson's. (Fig. 19.) You see how it was used. It was made by twisting a few lengths of iron wire together, and then making openings for

Fig. 19.

the sutures. It is just possible that, in some peculiar case, you may find some one or other of these things of use; but I am quite sure that the oftener you operate, the more likely you will be to keep to the simple suture of twisted wire.

It is generally easy so to turn the cut ends of the wires that they do not irritate the vagina; and I am sure it is better to leave them alone than to cover them with oiled lint or cotton-wool; but I think it is useful to dry the surface thoroughly, and brush some collodion over it.

The After-Treatment is, without any exaggeration, of equal importance with the operation. I am quite sure that many operations which failed would have proved successful, had sufficient care been taken after them. The bladder must be kept empty, or the united edges are pulled apart, urine dribbles between them, and patient and surgeon are both disappointed. The patient should be placed in bed, on her side, lying on a water-cushion, and with the thighs flexed up towards the abdomen. A catheter should be kept in the bladder; and the nurse must watch this assiduously night and day every quarter of an hour, to see that it is not plugged by mucus.

She must have two catheters, to change and clean one night and morning; and also have a stylet or a piece of wire, to clear the channel when it becomes stopped. This precaution is especially necessary about the third or fourth day. Some patients bear an elastic catheter better than a metallic one; some prefer the metal. You can try this before the operation, and select that which is the most comfortable. This short curved catheter (Fig. 20) of Sims or Bozeman often answers well; in other cases, a common elastic male catheter is preferred. In

Fig. 20.

either case, a piece of India-rubber tube is fastened to the end, and brought between the bedclothes so that it hangs over a chamber-pot, and the sound of the dripping of the urine becomes the index of safety both to nurse and patient. If the dripping stop, the nurse removes the tube, and clears the catheter with the wire, or changes the catheter. If the patient be in pain, or restless, opium may be given either by the mouth or rectum, in sufficient quantity to keep her easy; but some cases do well without a single dose. It is not advisable to run any risk of disturbing the parts by examination. Dribbling of urine by the vagina, or a profuse sanious discharge, are pretty certain signs of failure. If these be observed, it will be as well to relieve the patient from her irksome position, and remove the stitches; but, if all go on well, you would not remove them till the eighth, ninth, or tenth day; leaving them still longer if union did not seem to be firm. Of course, great care must be taken in the removal. The patient must be placed as at the operation; and each suture separately seized at the twist by forceps, drawn to one side, and the wire cut on the other side close to the spot where it emerges from the tissues. The small piece between the twist and the cut just made may then be snipped off, and the remainder of the wire is removed without any dragging, by gentle pressure with the point of the scissors away from the united fissure, while the forceps fix the twist. So each suture is removed separately. The patient may remain two or three days longer in bed, to make "assurance doubly sure"; and the catheter may still be used, unless there be unusual irritability of bladder. In this latter case, it is better to remove it, and have it passed every hour or two. In recent cases, the patient very soon recovers full power over the bladder; but, in cases of old standing, it may be weeks or months before the bladder is able to contain more than a very few ounces of water. The power, however, returns gradually; and it is not very long before the sufferer is thoroughly cured.

When a case proves wholly or partially unsuccessful, two or three courses may be adopted. First, as soon as the ununited edges of the opening appear to be covered by healthy granulations, the sutures may be reapplied. The granulating surfaces are thus brought into apposition, and union is often

obtained. Or, secondly, if it be undesirable to submit the patient at once to renewed confinement to bed, she may be allowed to go about; and the opening dressed daily with some astringent application, as a strong solution of tannin. After some days, as the opening contracts, she may be put to bed again, and the catheter used, while the astringent is carefully applied; and a cure is occasionally the result. We have seen this occur twice in this hospital; and one of the cases was a very obstinate one, of twenty-three years standing. Thirdly, supposing, from the appearance of the opening or the state of the patient, that either of these processes is not likely to succeed, the patient should go home, or to the country; and, after recruiting the general health for some weeks, return for a repetition of the operation.

There is a very troublesome class of cases in which the urethra is implicated in the fissure, and, while the bladder-portion of the opening heals, the urethra—disturbed, I suppose, by the pressure of the catheter—will not. I had a case of this kind in private; but, fortunately, the lady regained perfect control over her urine, though the urethra had been completely torn through, and it did not unite. This is interesting, as showing that the ring of muscular fibres at the neck of the bladder is competent alone to prevent incontinence of urine. In other cases, partial incontinence persists until the urethra is repaired. There is a case of this kind now in the house. I united completely a long vesico-vaginal fistula, which ran from the urethra quite up to the uterus, some months ago; and the patient can now hold her water generally for two or three days; but every now and then, on any sudden movement, some water escapes. To-morrow morning I shall pare the edges of the gap where the urethra ought to be, and unite them; and, instead of leaving a catheter in, it will be introduced three times a day. Even this, however, may probably disturb the healing process.*

I must conclude without entering into any detailed account of the various modifications of the proceedings I have described, which become necessary in complicated cases. In one case here, I had to remove a stone from the bladder before closing the fistula it had caused; becoming jammed, as it did, between the pubis and child's head. In other cases, we have had to treat both recto-vaginal and vesico-vaginal fistulae in the same patient. In others, the uterus has been more or less involved in the opening. In two cases, the uterus seemed to have completely disappeared; not one of us could discover a trace of it. In one case, the vagina was quite occluded just above a common opening into rectum and bladder; and the uterus was also out of reach. Frequently the vagina is contracted, in various directions and degrees, by cicatrices. All such conditions require either preliminary treatment by division of cicatricial bands and dilatation of vagina, or modifications in the operative proceeding. All this would require a longer explanation than our time now admits of, and a little reflection will make explanation unnecessary to any one who has thoroughly understood the mode of treating a simple case.

* The operation was done with complete success on May 25th, and perfect union was obtained.