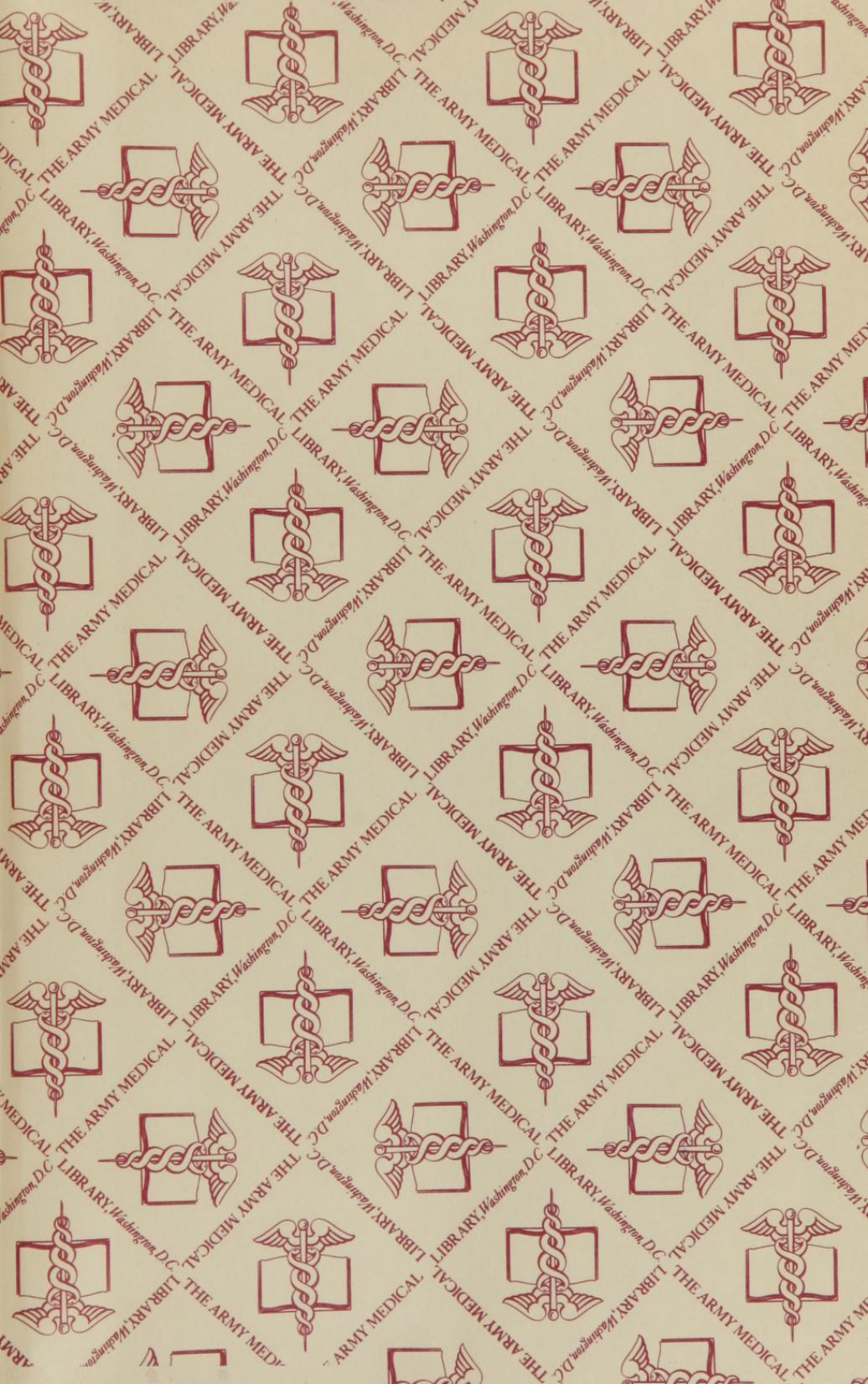


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Urethro-Vaginal, Vesico-Vaginal,

AND

RECTO-VAGINAL FISTULES:

GENERAL REMARKS;

REPORT OF CASES TREATED WITH THE BUTTON SUTURE
IN THIS COUNTRY, AND IN LONDON, EDINBURGH,
GLASGOW AND PARISIAN HOSPITALS.

BY

NATHAN BOZEMAN, M. D.,

OF NEW ORLEANS (LATE OF MONTGOMERY, ALA.).

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(From the New Orleans Medical and Surgical Journal for Jan., March and May, 1860.)

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The author takes this method of stating that it was his intention in the commencement of these reports to continue their publication in successive numbers of the New Orleans Medical and Surgical Journal, and after their completion, to issue the whole in pamphlet form. But, finding what he has already published to have reached such a length as to make a pamphlet of sufficient size, he has concluded to have several hundred copies bound for immediate distribution. The publication of the remainder will be continued as originally designed, and the several parts, as they appear, will be sent to all those now receiving a pamphlet. In this way the connection will be kept up, and the whole work made complete.

90 Baronne street, New Orleans.

RECTO-VAGINAL FISTULES

1870

RECTO-VAGINAL FISTULES

Some time since that two years have now elapsed since the publication of a paper by me in the *British Medical Journal* on the subject of Recto-Vaginal Fistulae. I then gave the results of my experiments, based upon the report of nine cases, and especially referred to one case of a woman in that time I have been enabled to prosecute my labors in this department of surgery, not only in this country, but in Great Britain and France, where I was invited to operate in some of the hospitals with an excellent result. Some of my operations in London have already been reported, but having been published in foreign journals, but few of us know in this country, I presume, have seen the account. Now the reason and the fact that the operations under which they were performed have not as yet been fully stated, I must be allowed for introducing some cases now in this journal.

In presenting the matter in this notice to the profession, it is my purpose only to present with a few remarks the report of

URETHRO-VAGINAL, VESICO-VAGINAL

AND

RECTO-VAGINAL FISTULES.

SOMETHING more than two years have now elapsed since my last paper upon the subject of *Urethro-Vaginal* and *Vesico-Vaginal Fistules* appeared in the *North American Medico-Chirurgical Review*. I then gave the profession the result of my experience, based upon the report of nineteen cases successfully treated by our new mode of suture. Since that time I have been steadily engaged in prosecuting my labors in this department of surgery, not only in this country, but in Great Britain and France, where I was invited to operate in some of the hospitals while on a visit there. Some of my operations in Europe have already been reported; but having been published in foreign journals, but few of my readers in this country, I presume, have seen the account. For this reason, and the fact that the circumstances under which they were performed have not as yet been fully stated, I must be excused for introducing these cases here in their regular order.

In presenting now another article to the notice of the profession, it is my purpose only to preface with a few remarks the report of

cases, the only sure way by which the merits of any plan of treatment can be correctly judged of.

The point which I would first touch upon, then, is *metallic sutures*, and the best mode of using them in the management of the class of diseases to which our attention is at present directed. The notice which has been given this subject, both in Europe and America, within the last year or two, has had the effect of arousing the entire profession to a sense of its importance. This is unquestionably due to the great success claimed by American surgeons in the treatment of the injuries of which we are speaking. The advantages of metallic sutures over all others as thus shown, had, it is true, been known to us for more than a quarter of a century before, still but little had been said or written upon the subject. The fact was familiar to us, and the question that occupied our minds was as to the best mode of employing them. The various plans proposed are familiar to every surgeon, and consequently need not occupy our time here. Suffice it to say, the results produced from them in the aggregate far exceeded what had been furnished by the whole of Europe together. At the late period referred to, Great Britain was aroused, as if from a slumber, to the great importance of metallic sutures, as being something new. Prof. Simpson, so distinguished for his zeal in the cause of science, took hold of the subject at once, and we absolutely find him, by experiments on a pig, arriving at results precisely the same as were presented to the profession more than thirty years ago by our countryman, Dr. Levert. His conclusions as to the non-irritating effect of metallic sutures as compared to that of organic, were certainly most satisfactory, and he proved beyond doubt that they were of ancient origin in the treatment of ordinary wounds. What I object to, however, is the preference which he gives to iron-wire sutures over silver, and his manner of using them. Let us see, then, what he predicates this preference upon. It is that iron-wire "is stronger, cheaper, and altogether more easily worked with than silver-wire."* Now, that iron-wire is a little stronger and cheaper than silver, does not perhaps admit of a doubt; but in affirming that it is more easily worked with than the latter, he certainly labors under a wide mistake, if the experience of others amounts to anything. The result of my own is, that there is no comparison between the two. I have tried the best quality of iron-wire, that

*London Medical Times and Gazette.

manufactured for Prof. Simpson's own use by the firm of Cockers Brothers, of Sheffield, and even this is greatly wanting in the softness and flexibility characterizing silver. Admitting, however, all he says of what may be called the working qualities of iron-wire, what are we next to infer of its effects on the animal tissues as compared to silver? He here tells us that he has employed "iron-wire coated with tin, silver, etc., as well as wires of platinum and other metals, but not one of them fulfills any indication better than the simple annealed iron-wire," which, he says, remains "passive" in the tissues, and "not at all liable to become changed and oxidated."* Now, this does not accord with my experience. I have never yet seen iron-wire remain in the tissues even a few days without being turned black. Not only this; I have always observed, where there was much dragging upon the sutures of this metal, they would cause ulceration and frequently cut out. This is almost certain to occur in cases of fistule requiring more than four sutures. I have not the slightest doubt that the failure of Prof. Simpson's first operation with the button and iron-wire sutures, which he attributes to awkwardness in adjustment, is to be ascribed to this cause alone. He tells us that in that operation he employed five iron-wire sutures, and that the edges of the fistule "united opposite four of these sutures, but gave way early opposite the middle suture of the five." Upon this middle suture was the greatest strain, and for the reason of its irritating effect, it cut out early, thus causing a partial failure of the operation. Had the same strain been upon the other four sutures, they would have also cut out and caused a complete failure. This, however, did not exist in the nature of things. In a linc caused by the approximation of the two sides of any incised wound, the force required to hold them together, whatever may be the means employed, will be found to diminish as you go from the center to either angle, and *vice versa*. This same general law obtains when the edges of a fistulous opening are brought together by sutures; and here, I may say, if the chasm is of considerable size, it is more marked than almost anywhere else in the body, as will be indicated by the intolerance of the tissues to the amount of pressure exerted at the several points of suture. Every surgeon, I suppose, has observed the above results to a greater or less extent in the employment of silk sutures in ordinary wounds. I have myself repeatedly observed the fact. During the whole course

* *Op. cit.*

of my practice in vesico-vaginal fistule, however, I never saw a more beautiful illustration of it than was presented to my notice about a year ago in London. The case was one which had been operated upon at the "London Home" by my highly esteemed friend Mr. Isaac Baker Brown. Mr. B., although he had had unprecedented success in his operations with the button suture, yet was induced, by way of trial in this instance, to substitute Prof. Simpson's iron-wire sutures for silver. The fistule required five of these sutures, which he secured on the ordinary button principle. The ninth day he remove the apparatus, and to his astonishment found all the sutures nearly cut out, the middle one quite so, and a fistulous opening remained in its tract. Four or five days afterwards he requested that I should see the case with him, but did not tell me anything about his having employed iron-wire sutures. No sooner, however, had he introduced his speculum and threw the parts into view, than I remarked to him that silver sutures had not been used in the operation, and if so, there was an effect from them that I had never before observed. He then stated that he had employed iron-wire in the case, as an experiment, and that the partial failure of his operation, he believed, was to be ascribed to to this circumstance alone. Such was the opinion of all who witnessed the result, there being five or six other physicians present. There were red lines on either side of the cicatrix, caused by the healing up of the ulcerated points of the sutures. These lines varied in length, increasing from the first, near the original angles of the fistule, to the center one, in whose tract was situated the remaining fistule, caused doubtless by the suture here cutting out and destroying the cicatrix.

Now, the indications which I have just pointed out that led me to the detection of the use of iron-wire sutures in a case of which I knew nothing, certainly should be regarded as one of the most convincing arguments that could be adduced in favor of silver sutures, if such were necessary. Believing, however, as I have before said, that sutures of these two metals admit of no comparison, I deem it a waste of time here to discuss further the superior claims of the latter. That iron-wire, excepting for hydrocele or other diseases treated upon the same principle, is to take the place of silver sutures, it is a manifest absurdity. But few operators in Europe, and I venture to say none, in this country, will be found to follow the example of Prof. Simpson in his use of it.

It was my intention in the outset to notice Prof. Simpson's proposal to modify our button principle, by what he terms an "iron-wire splint;" but as the results of his own practice with it do not even warrant the claims set up to improvement, as I have been informed I shall pass it over. Whatever success he may have had with this contrivance is to be attributed to the principle of our button, differing widely, however, from the latter as to the combination of advantages. It could lay claim to but one; namely, steadiness and support to the approximated edges of the fistulous opening. This now brings us to a consideration of our button and the ends we attain by its use. I here propose a short notice of the principle of its action, for the reason that it is not generally understood by physicians, as I have been induced to believe from the many questions asked me about it. If it can be employed for no other purpose than simply the name of the thing, why let it be dispensed with. What, then, are the advantages of the button as employed by us? The conclusions I have long since arrived at, and which every day's experience serves to strengthen my conviction as to their correctness, may be thus briefly stated :

1. That our button, in conjunction with the sutures comprising the apparatus, in the treatment of the class of diseases under consideration, does exert a powerful controlling influence in directing and forcing the edges of the fistulous opening in perfect apposition; that is to say, it is the level to which they are applied, and in nowise can their inversion or eversion take place in being thus secured.

2. That it does give steadiness and support to the edges of the fistule, when adjusted, on the same principle, excepting that it is more efficient, as the adhesive strips, compress and roller, when applied to incised wounds generally.

3. That it does protect the denuded edges of the fistule from all extraneous influences, such as vaginal and uterine secretions, and the urine in cases of double and triple fistules, when it is desirable to close up but one at a time.

Now, that all these points are attained by the employment of the button as a part of our suture apparatus admits of the clearest demonstration, which any one can test by applying the principle to two pieces of softened sole-leather with their edges slightly beveled off. As to the greatest proof I can offer of the efficiency of the contrivance, I appeal to the report of my cases, embracing as it does the largest collection on record by any one surgeon, either in this country

or Europe, now amounting to nearly fifty. My success in the management of these cases has been such, I conceive, as to justify all that I have claimed for the button suture. So far as I am informed, there is not another method from which such results have been produced, a majority of my cases having been cured by the first operation; almost every shade of difference, ranging from the simplest to the worst form of the disease, has been met with. Only one case out of the number has been rejected as not admitting of operative procedure. Only one, operated upon and afterwards discharged incurable. One terminated fatally from pyæmia. The operation in this case was performed in the Royal Infirmary, at Edinburgh, and as regarded closure of the fistulous opening, it was found, after death, to be complete. This case has been reported by my friend Dr. Keiller, in the *Edinburgh Medical Journal*. But from its general interest, I propose introducing it here among my other cases.

Several of the cases that I am now about to report are of unusual interest; one, perhaps, the most remarkable on record. This was a case of both vesico-vaginal and recto-vaginal fistules, and from its peculiarities occasioned the inauguration of a new and successful plan of treatment never before adopted, that I am aware of, and one to be regarded of the greatest practical utility. The vesical opening was of enormous dimensions, involving nearly the whole of the vesico-vaginal septum, together with half an inch of the root of the urethra, and a large part of the cervix uteri. Through it the fundus of the bladder protruded externally in the form of a large red tumor. The recto-vaginal opening, situated about two and a half inches from the anus, was associated with a broad, hard, and unyielding band below it, which prevented any movement of the septum, and consequently any depression of the uterus, which is usually made subservient to the closure of openings in the bladder attended with such extensive loss of substance. This unyielding nature of the posterior septum could not be overcome by any plan of treatment. This, therefore, left us with no other alternative than the obturation of the vagina at the vulva, according to the method of Vidal (*de Casis*). In addition, now, to the ordinary objections to the above procedure, there was one in the present instance, that at first appeared insurmountable; namely, the existence of the recto-vaginal fistule. With this remaining, not only the urine and catamenia, but the fæces would have been turned into one common receptacle with no other outlet than the urethra. For the latter

to become dissolved in the other two excretions, and be discharged with them, would have been next to impossible. M. Vidal's operation, therefore, was out of the question, unless the recto-vaginal opening could first be closed; and to the success of this there appeared one very great obstacle, namely, the uncontrolled urine. This, in almost any position of the patient, would necessarily come more or less in contact with the raw edges of the fistule when brought together, and by its irritating effect have prevented their union. Relying, however, upon the protective power of our button, as shown on former occasions in the management of double and triple vesico-vaginal fistules, I resolved to hazard an attempt at least to place our patient in a condition for obturation of the vagina, which, however partial the relief promised, seemed to be called for under the circumstances. I say partial relief, because it is well known that closure of the vagina, as directed by M. Vidal, leaves the patient with no control over the urine, to say nothing of the ill consequences arising from the more or less stagnation of this fluid, and the catamenia at the lower part of the vagina. To prevent the latter result, therefore, it required that these excretions should always be freely and completely discharged, whether involuntarily or not. This, in my judgment, could be effected in no other way than by attaching the posterior to the anterior wall of the vagina just below the vesical extremity of the urethra, thus placing our line of cicatrization horizontally and far above the perpendicular one of M. Vidal, just within the meatus urinarius. Therefore, after closing the recto-vaginal opening, if possible, I determined to put into practice this new procedure. Accordingly, I went to work, and to my great astonishment the rectal opening was closed at our first trial. It remained now for me to see what could be realized by the procedure above proposed. The mode of performing this, however, we must defer until the case is introduced in its appropriate place. Suffice it to say, our first operation was attended with entire success, and our patient, contrary to the most sanguine hope, had almost complete control over her urine. I say almost complete, because she retains and passes it at will, dribbling only taking place from the urethra occasionally when she goes too long without emptying the bladder. She keeps perfectly dry at night, not requiring to get up at all, and during the day, when walking about, she can sometimes go three or four hours without any dribbling.

When I performed this operation, I did not for a moment suppose

that our patient would regain, to any extent, the power of controlling her urine, if ever so successful. The most that I hoped for was a mechanical obstruction to its flow while the patient was in the recumbent posture, thus enabling her to lie dry at night. The result, however, has proven most conclusively that the vagina, thus occluded, secures to the patient the power of retaining and passing her urine at will, as though the fistulous opening itself were closed.

This operation, therefore, cannot be regarded otherwise than as a great triumph. It enables us now to manage a class of cases, if not as satisfactorily as we could desire, certainly upon scientific principles, and with results never heretofore attained, as far as my information extends. Vidal's operation, however successfully performed, must, from the very nature of things, always be attended with an involuntary flow of urine upon leaving the recumbent posture, and therewith a downward pressure or unpleasant feeling at the lower extremity of the vagina, caused by the accumulation of urine constantly going on there.

A word now as to the classification of fistules, and I will then be ready to enter upon the report of cases. The rules for classifying all urinary fistules belonging to the female, are laid down in the paper referred to in the outset of these remarks, and consequently need not be repeated here. The object of classifying is to facilitate a correct understanding of the peculiarities of fistules, as well as the various modifications of treatment required for their successful management. Experience led me to the adoption of this course, and I see no reason for departing from it. The many advantages of such an arrangement it is not my purpose here to enlarge upon; this I have already sufficiently done elsewhere. Suffice it to say, I shall adhere to the same general plan in the following report of cases.

CASE XX.*—*Vesico-Vaginal Fistule of large size, complicated with loss of the Cervix Uteri; two Operations with the Button Suture; Cure.*—Mrs. —, of Greenville, Alabama, applied to me for treatment of her case, in the month of November, 1857. She is of tall and slender figure, aged about 33, and had always enjoyed pretty good health, until the birth of her last child, five years ago. This was her fifth labor, being tedious, as all previous ones had been. In no instance

*It is proper that I should state that the numbering of my cases here is a continuation from the November number of the North American Medico-Chirurgical Review, my report of cases at that time having reached nineteen.

before, however, did instruments require to be used, the efforts of nature being quite sufficient to complete delivery. This time they failed, after continuing uninterruptedly for sixty hours. The physicians in attendance applied the usual remedies, but no action of the uterus could be gotten up. A thorough examination now not only showed that the child was unusually large, but that its life was extinct.

With this state of things, it was thought advisable to employ instruments. Craniotomy was accordingly performed, and speedy delivery effected.

Patient states that there was more or less dribbling of her urine all the next day; the day after there was still some, though not enough to relieve the bladder. Distension of the organ, with no ability to relieve itself, was the consequence. From this there was considerable suffering. An attempt was now made to relieve the bladder by introducing a catheter, but the instrument, it seems, could not be carried far enough to answer the purpose. Relief from this cause, however, soon followed, by a slough of the vesico-vaginal septum—caused, doubtless, by the long pressure of the child's head there. Constant dribbling of the urine now was the result. It was several months before the patient got out of bed, and when she did, her general health was very indifferent. Her menstruation, however, came on at the usual period after delivery, and continued pretty regular up to the present time, which is somewhat remarkable.

In almost all cases, according to my observation, and especially when the injury to the vaginal walls is considerable, as it was in this instance, there is almost a total cessation of the catamenia. There is certainly nothing like regularity in its return.

Examination.—Fistule belonged to my fifth class—second variety. It was somewhat triangular in shape, with its base downwards, and the apex formed by a rent in the anterior part of the cervix uteri. Three fingers could almost be introduced through the opening into the bladder, and owing to this enormous size, the mucous coat of the bladder kept pretty constantly protruded. The extent of the cervix lost was considerable, there being no trace of either lip present. With this there was also very great contraction of its canal, the parts around being very much indurated. The posterior edge of the fistule proper and the uterus, at first allowed of but very little depression—nothing like enough to effect apposition with the opposite

side. Here, then, was a very great obstacle in the way of a successful management of the case. Knowing, however, that closure of the chasm could be effected in no other way, I set to work to overcome this difficulty, as a preparatory step. This I did by forcibly drawing the parts down every day, stretching them, so to speak. The instrument I employed for the purpose was a pair of strong forceps, having circular blades, with a groove on the face of one and a corresponding ridge or tongue on the other. With this kind of appliance the upper edge of the fistule could be seized and drawn down with considerable force, without danger of being cut or torn. By this procedure I was enabled, in the course of ten days, to get the two sides of the fistule together with perfect ease, and to secure such an amount of elasticity of the parts as to remove all apprehension as to the probable cutting out of our sutures.

Operation—The patient being placed in the usual position, upon her knees and elbows, and the speculum introduced and held by an assistant, I proceeded to pare the edges of the fistule. What was peculiar in this process, was the free trimming of the corners of the cleft cervix, together with the adjacent septum, done for the purpose of reducing this border of the opening to a suitable shape to match the one of the opposite side. This being done, our sutures, eight in number, were next introduced. Two of these were carried through the stump of the cervix, one upon either side of the canal. Upon being adjusted now, a button, bent upon its convexity and notched in the upper edge, was slid down upon them, and secured in place by compressed shot. For a view of the kind of button used in this case, excepting that it has no curve upon its convexity, see figure 13, in the *North American Medico-Chirurgical Review* for July, 1859. The line of perforations in this button, it will be perceived, is straight, and such was the feature of the button I used in the present instance. The result, however, proved that I was mistaken as to its adaptation to the parts. The operation was a partial failure. A small triangular opening was left, it being the apex of the original fistule. Through this small opening nearly all the urine passed, after the catheter was laid aside. The strain, too, upon the newly-formed cicatrix I found to be very considerable, and after the patient was allowed to get up, it began to give way at each angle of the fistule, and so continued until the whole of it had yielded, thus leaving the opening in the bladder larger than it was in the outset. We had, therefore, to commence our treatment *de novo*.

The mistake I made in the adjustment of the suture apparatus, in this instance, was as to the extent of elasticity belonging to the anterior border of the fistule, and the manner of introducing the central sutures. This border of the opening, in attempting approximation, could not be brought up to the straight line of perforations in our buttons ; and in the upper border we lost all mechanical advantage over the apex of the fistule, by having our sutures upon either side too far removed from it. The consequence of this was an imperfect coaptation of the two edges of the fistule in the center, and a certain failure to unite to that extent.

In my next operation, therefore, I was prepared to take advantage of these oversights. The difficulty was easily overcome, and a perfect cure of our patient secured. Instead, now, of employing a button with the line of perforations straight, I had it curved to correspond exactly with the anterior border of the opening, and next, instead of having the central sutures in the upper border off to either side of the apex of our triangular opening, I placed them directly over it, so as to secure the greatest possible amount of power here, to force coaptation. The removal of the suture apparatus on the ninth day, showed how perfect its adaptation had been. Complete union throughout was the result. After a few days our patient was allowed to get up. She at first had some incontinence of urine, doubtless the result of weakness. This gradually disappeared, and after a couple of weeks she was going about as well as she ever was, having perfect control over her urine.

Remarks.—I have thus minutely described my operation in the above case, thinking it of such interest as to warrant it. It illustrates, I conceive, several important points in practice, which the surgeon should never lose sight of ; namely, a close inquiry into the nature of the parts before proceeding to operate, and a careful adaptation of the mechanical appliances called for. It was inattention to these that doubtless caused the partial failure of my first operation. I have nothing to say of our ultimate success in the case ; certainly nothing could have been more satisfactory than it was.

CASE XXI.—*Urethro-Vaginal and Vesico-Vaginal Fistules ; Partial Obliteration of the Urethra ; all the Result of Lithotomy through the Vesico-Vaginal Septum, and Sloughing Caused by the "Clamp Suture ;" Obliteration of the Urethra overcome, and both Fistules closed with the Button Suture ; Perfect Control over the Urine afterwards.*—The subject

of this case was a mulatto girl, Louisa, sent to me by Mr. John Bondurant, of Marion, Alabama, January the 18th, 1858. She is about 18 years old, of large stature, and apparently in good health. Upon being interrogated, she stated that, as far back as she could recollect, there had been great difficulty, at times, in passing her urine, and now and then it would be mixed with a little blood. This trouble continued to increase as she grew older; and finally, when about nine years old, it became so severe that it was thought advisable to put her under some physician for regular treatment. Dr. J. M. Sims, then residing in Montgomery, Alabama, was put in charge of the case, who, upon examination, detected the existence of a calculus in the bladder. The account of the case, while under the care of Dr. S., I give from my own recollection, knowing, as I did, something of its management. Dr. Sims' proposal was to rupture the hymen, and to dilate the vagina to a sufficient extent to allow of the stone being removed by an incision through the vesico-vaginal septum; afterwards to close the opening with his "clamp suture." The preparatory treatment, then, having been gone through with, which required several weeks, Dr. S. proceeded to perform the operation above indicated, in the presence of myself and several other physicians. The incision was made through the septum longitudinally, and about an inch in length. Through this opening the stone, about the size of a partridge egg, was easily extracted. This part of the operation, as well as the application of the clamp suture afterwards, was done with the utmost skill and dexterity. The case was now conducted on general principles; such as position upon the back, catheter in the bladder, light diet, opiates to hold the bowels in check, etc.

After waiting the usual length of time, the suture apparatus was removed; but, unfortunately, closure of the wound had not taken place. A vesico-vaginal fistule, with all the ill consequences of one arising from tedious and badly managed labor, now remained.

Operation after operation Dr. S. performed, though without success. The patient says that she was under treatment eighteen months or two years, and underwent, first and last, about eight or ten operations; thinks that her suffering was worse after removal of the stone than before. Menstruation did not take place until the age of seventeen.

Examination.—Upon placing the patient in the usual position, pro-

cidentia uteri was found to exist—a very unusual position, certainly, of this organ for a woman who had never borne a child. This “falling of the womb,” she said, had existed for two or three years.

I had no difficulty in replacing the organ. This being done, the speculum was next introduced, and the opening in the vesico-vaginal septum brought into view. It was situated in the median line, and about half an inch above the mouth of the urethra; its size was sufficiently large to admit the point of the index finger. A catheter now introduced into the urethra, and passed on, made its appearance in the vagina, about one inch and a quarter from the meatus and an inch from the opening above described. All my efforts to pass the instrument beyond this point failed. The smallest size probe was then attempted to be passed, but with no better success. Obliteration of the passage above this point was the cause of the trouble. Both fistules were situated pretty much upon the same line, with reference to the longitudinal axis of the vagina.

Operation—This was performed in the presence of Drs. Fowler, Weatherly, and Gaston, in the following manner: Both openings were converted into one, in the first place, my object being to reëstablish the urethra, and to simplify the main steps of the operation. This was effected by a long and narrow bladed knife, entered in the urethra at the meatus, and brought out at the opening near its root, and then carried through the other one, into the bladder. With its edge then turned towards the symphysis pubis, and by a sawing motion, the parts were easily laid open to a depth sufficient to reach the opposite side of the obliterated portion of the urethra. This being done, I next pared the edges of the two fistules, and introduced my sutures, seven in all, four to the urethra and three to the bladder. The closure of the whole was effected over an elastic catheter. The button employed was of the ordinary shape, and when adjusted, lay longitudinally.

The after treatment was conducted upon general principles. It being desirable not to remove the catheter, choking was prevented by passing through it, as often as necessary, a small wire.

On the eighth day, removed the suture apparatus, and found union of the parts complete, all to a small point corresponding to the original seat of the urethro-vaginal opening. This I had to close at another operation, which left the cure complete, the patient with

entire control over her urine. The procidentia uteri gradually disappeared under the free use of astringent injections.

Remarks.—The above case being somewhat out of the ordinary course of things, the few reflections that I may make here will not, I trust, be regarded as foreign to the subject.

The occurrence of the injuries, under the circumstances stated in this case, together with the long suffering of the patient afterwards, and the consequent procidentia uteri, make it rather unique, and certainly not devoid of interest. As to the propriety of the general course of treatment that was adopted in the outset for the removal of the stone in the bladder, it is not my purpose to criticise. Such a procedure as this, I am convinced, should be the established practice in older subjects, especially those who have borne children, now that our method of closing up the wound has become so simple and easy.

The risk of incontinence of urine, and consequent misery, perhaps for life, would be entirely avoided in this way. In such subjects, dilatation of the urethra, with or without incision, is exceedingly liable to be followed by the above result, especially if the calculus to be removed is rough, and of any considerable size. The vagina, in this class of cases, being already sufficiently dilated, we have only to make the required incision through the septum, remove the stone, and apply the button suture for closure of the wound. The whole thing is quickly done, and our patient placed in the very best condition for a permanent cure in a few days, without any risk whatever.

In young subjects, however, as the above case was, when the hymen has to be ruptured, and a long course of dilatation of the vagina—in short, complete defloration has to be instituted as a preliminary treatment only, to say nothing of the removal of the calculus afterwards, then the question as to the best operative procedure becomes a matter of grave consideration. As to the course that should be pursued under such circumstances, there is no doubt in my mind. The procedure ascribed to Paul Dubois is the one I should most certainly adopt; namely, dilatation of the urethra by incision, to a sufficient extent to allow of the easy removal of the calculus. In giving preference to this method, however, I do it, not because I think that I should not be able to close the wound through the vesicovaginal septum, as happened to the distinguished surgeon whose name I have mentioned in connection with this case, but that by adopting it time and trouble would be greatly lessened, and the

defloration of our patient avoided ; both matters, I conceive, of the very greatest importance, when the result is, perhaps, more satisfactory than could be obtained in any other way. This operation, in very young subjects, is simple and easy to perform, and as a general rule, is attended with the 'most satisfactory results, as there is abundant testimony to prove. My own experience, though small, fully warrants me in saying what I have.

Not quite two years ago, I had occasion to perform this operation upon a little girl, not quite three years and a half old. The stone was almost as large as the one in the above case, and yet there was no sort of difficulty experienced in its removal through the dilated urethra. Our little patient could scarcely be kept in bed for twenty-four hours after the operation. Not an untoward symptom followed. There was the most perfect control over the urine, and now she is as healthy and sprightly as any child of her age. At some future time, I hope to be able to report the details of this case at length, and some others of a similar nature, in the mode in which I adopted an operative procedure not heretofore practised, that I am aware of, to any extent, in this country. I allude to the operation with the *rectangular staff*, as performed by Professor Buchanan, of Glasgow, Scotland.

CASE xxii.—*Vesico-Vaginal Fistule of large size ; Successful application of the Button Suture.*—The subject of this case, Mrs. O., of Conyers, Georgia, was sent to me by my friend Dr. Dean, of the same place, in the month of March, 1858. Her history is as follows : *æt.* 41, of medium stature, good form, and always enjoyed good health until the birth of her ninth and last child, eight years ago, at which time she became the subject of her present affliction. She says that all previous labors were easy, excepting two, and these were not very tedious. At the time of her injury, labor lasted only twenty-four hours, and terminated naturally. She does not recollect, however, of passing any urine during the time, nor for thirty-six hours afterwards, and then only by the use of a catheter, when a large quantity was drawn off, very much to her relief. Her suffering, for some hours previous to the use of the catheter, was such as she never before experienced, even in her confinements. Very soon after this, dribbling of her urine took place, which has continued ever since, with an almost constant scalding effect.

About six months previous to consulting me, this patient applied

to a distinguished surgeon, of Augusta, Georgia, who performed several operations upon her, though without any material benefit. She next consulted a surgeon at Atlanta, who, after putting her upon the table, and giving her chloroform for an operation, declined performing it. Such was the discouraging account given by herself, upon applying to me.

Examination.—This revealed the existence of a fistulous opening, large enough to admit easily two fingers into the bladder. It was oval in shape, with its long axis transverse, and belonging to my fifth class, first variety.

Ten days after my first examination, I proceeded to operate, in the presence of Drs. Gaston and Norton, of Montgomery, and Dr. Johnson, of Notasulga, Alabama. Seven sutures were required to close the opening, these being carried through the anterior lip of the cervix uteri. The usual shaped button for this form of fistule, was used. (See figure 13, *op. cit.*)

Patient got on remarkably well, after the operation. Ninth day removed the suture apparatus, and found union perfect, all to a small point at the right hand angle, which, however, closed up in two or three days, without further trouble.

After getting up, there was a little incontinence of urine, and an inability to go longer than two or three hours without emptying the bladder. In both of these respects, however, there was a constant and rapid improvement.

About a month after the operation, our patient was discharged, with no incontinence of urine, but still an inability to go longer than three or four hours without emptying the bladder. This I was disposed to attribute to long disuse of the organ, and diminution of its cavity.

I very recently received a letter from my friend Dr. Deane, in relation to this case, it having been nearly two years since my operation. He states that the inability to retain the urine any great length of time still continues, and that, upon a thorough examination, he can report a permanent closure of the fistule.

Remarks.—Considering the nature and size of the fistulous opening, and the discouragement the patient had met with before applying to us, the result of our operation cannot be regarded otherwise than of the most satisfactory nature. Her inability to retain the urine as long as formerly, results from an unnatural cause, which is beyond

the reach of art (diminution of the capacity of the bladder), and, therefore, should not be considered as lessening the fullest extent of success, to which we might with propriety lay claim.

CASE xxiii.—*Vesico-Vaginal Fistule; First application of the Button Suture successful.*—Mrs. T., of Elkton, Kentucky, consulted me, March the 25th, 1858, in relation to her case: *æt.* 26, rather large and fleshy, and, to all appearances, in the enjoyment of perfect health; states that she was confined at full term with her first child, February, 1856; was in labor only seventeen hours, and delivery natural; does not recollect of passing any urine during the time. After delivery it had to be drawn off with a catheter, which required to be kept up daily, for more than a week. Soon after leaving off the instrument, first noticed dribbling of the urine, which has continued unabated ever since. Three operations, she says, have been performed for closure of the fistule, but without affording her any relief whatever.

Examination.—Fistule was found to belong to my fourth class, first variety; that is to say, it involved both the trigonus vesicalis and the root of the urethra. It was rather oval in shape, with its long axis corresponding to that of the vagina. Its edges were quite red, and very much thickened; I suppose, from a quarter to a third of an inch of the urethra had sloughed away.

March 26th, I proceeded to operate in the usual manner (see *op. cit.*). In paring the edges, I took special care to so shape them that the line of approximation should be transverse to the urethra. This is a very important point, and should always be borne in mind in the management of cases belonging to this class. It is only when our sutures are introduced antero-posteriorly, in such cases, that we can produce an easy and natural coaptation of the parts, and, consequently, prevent an undue amount of traction, which would otherwise take place. The reverse of this was the plan followed by the surgeon who preceded me, and to this circumstance, I doubt not, is to be attributed his failures.

Four sutures were called for, two upon either side of the urethra. A button of the usual shape for this class of fistules, was used (see figure 10, *op. cit.*).

In the after treatment there was nothing worthy of note. On the ninth day, removed the suture apparatus, and had the satisfaction of finding perfect union throughout. In a few days, our patient got up

and went about, as well as she ever was, having entire control over her urine.

Remarks.—This case, as well as the preceding one, illustrates, in a very striking degree, the fact that tedious and protracted labor is not always essential to the production of such accidents. In one, labor lasted only twenty-four hours, and in the other seventeen. Another fact too, worthy of note is, that in neither case were instruments employed.

CASE XXIV.—*Vesico-Vaginal Fistule of large size, requiring for its closure ten Sutures; First operation with the Button Suture successful.*—This patient, a colored girl, was very kindly sent to me for treatment by my friend Dr. W. P. Reese, of Selma, Alabama, March, 1858. She is about 28 years old, spare built, and rather delicate-looking; states that the confinement at which she became the subject of the above injury occurred only six or eight weeks before, it being her eighth, and, this time, with twins. All previous labors had been easy. In the present instance, however, it was tedious, lasting about fifty-two hours. The first child was delivered naturally, about twenty-eight hours after the commencement of labor, and the second one by forceps, about twenty-four hours after this. Says that she passed but very little urine until after the birth of the first child, and then no more until after the delivery of the other. Soon after this, noticed that it was dribbling off, without her having any desire to pass it in the natural way.

Examination.—Fistule was found to belong to my fourth class, third variety. It was of enormous dimensions, admitting readily three fingers into the bladder. The fact is, nearly the whole of the septum, with at least a third of an inch of the urethra, had sloughed away. The chasm was almost circular, the transverse diameter being a little the longest.

April the 3d, operated upon the case. After paring the edges in the usual manner, ten sutures were found to be necessary. The uterus, in this instance, had to be pulled down, in order to close the opening, its anterior border being immovable. This step of the operation was easily effected, and perfect coaptation of the two denuded surfaces secured. (For a view of the button here employed, see figure 22, in the number of the Journal previously referred to.) After treatment the same as usual. Ninth day, removed suture apparatus, and found union of the parts throughout.

By way of experiment, I introduced, at my operation, two zinc wire sutures, one at each angle of the fistule. My object was to see what would be the effect of this metal on the tissues, as compared with that of silver. The result was anything but satisfactory. When I came to remove my button, I found both of these sutures so brittle that they could scarcely be withdrawn, and along the track of each there was considerable ulceration—more, indeed, than we would have expected from silk sutures. A small secondary fistule followed the use of each of these sutures, but, being very favorably situated, they both closed without my having to resort to another operation. Our patient was discharged a few weeks afterwards, entirely well, having complete control over her urine.

CASE XXV.—*Two Vesico-Vaginal and one Recto-Vaginal Fistules, complicated with Retroversion of the Uterus; all successfully closed with the Button Suture.*—While on a visit to this city, in January, 1858, I was requested by my distinguished friend Dr. Cartwright, to visit and examine a colored girl, belonging to Mr. Geo. Moore, of St. James parish. He stated that the girl had been under his treatment for a disease known as *Yaws*, of which she was almost, if not entirely relieved, but that there still existed the condition above stated, which he hoped I could do something for. A very accurate and interesting account of the case, and its treatment while under his charge, may be seen by reference to the number of this Journal for July of last year. The history of the case, upon coming under my care, is as follows: Mary, æt. 30, under medium size, and rather delicately formed; states that she has had six children, the first at the age of fifteen, and the last at twenty-three, when she sustained her present injuries. Labor, this time, lasted forty-eight hours, and during the time she passed but little if any urine. The child's head being unusually large, and the circumstances of the case demanding it, the physician in attendance thought it advisable to resort to instruments. Craniotomy was accordingly performed, and delivery effected in the usual manner. The next day she discovered dribbling of the urine, and very soon after this, its entire passage through the vagina took place; and so it has continued to the present time. Patient is somewhat reduced in flesh, and has the appearance of one who has endured great suffering. Menstruation is scanty, and very irregular.

Examination.—The patient, on being placed in the usual position, upon her knees and elbows, and the speculum introduced into the

vagina, my attention was first called to a change in the relationship of the parts ; indeed, so great was this that I could form no conception of the nature of the injury I was in search of. There was the most complete retroversion of the uterus I had ever seen. The fundus rested very low down, between the posterior wall of the vagina and the rectum, with the cervix turned into the bladder through the fistulous opening, and presenting upwards. The organ appeared to me to be almost entirely reversed. To restore the organ, now to its proper position, I found to be highly necessary for a further and satisfactory examination of the parts involved. This end I attained by passing a blunt hook through the fistulous opening and along the cervix, until I could hitch it in the os uteri. This having been accomplished, I then drew the cervix downwards and backwards, at the same time, with a probang resting against the fundus of the organ, I forced this upwards and forwards, thus causing it to assume its normal position. Both the anterior and posterior walls of the vagina could now be clearly seen, in their proper relationship with the apertures in them. The recto-vaginal opening I had not before suspected, my attention not having been called specially to it by the patient. It was situated just below the posterior lip of the cervix uteri, almost circular in shape, and of a size sufficient to admit of a No. 8 bougie. It admitted the passage of a large portion of the fæces into the vagina, when in a fluid state.

On the other side now of the vaginal canal there were to be seen two vesical openings, both quite large. One situated in the *bas fond* of the bladder, and the other, the trigonus vesicalis, and separated from each other by a narrow bridge of the septum, say half an inch wide. Each one measured upwards of an inch in its transverse diameter, and was rather oval in shape. Seeing now that the intervening substance was not of sufficient width to allow of the opposite sides of both openings being attached to it, I concluded to remove it entirely, thus converting both fistules into one which would belong to the third variety of my fourth class. This little operation I easily performed with a pair of curved scissors; there resulted from it considerable hæmorrhage, however, which I had some trouble in arresting. The next thing I did after this was to introduce a large tube into the vagina for the purpose of keeping the uterus in its place, which it did most effectually. This was removed every day, and the vagina syringed out with cold water. Under this preparatory

treatment, our patient was soon ready for the operation of closure of the fistulous openings.

March 16th, every thing being in pretty favorable condition, I proceeded to operate upon the vesico-vaginal fistule in the usual manner. After the paring was done, nine sutures were found to be necessary. Upon approximating the two sides of the opening, the line thus formed showed itself to be somewhat semi-circular, its concavity presenting upwards and its convexity downwards. In addition to this, the surface on which our button was to stand was undulating. In accordance with these peculiarities of the parts it had to be formed and adjusted. In the first place it was made semi-circular, and then grooved and floored upon its edges in the ordinary manner. The line of perforations was made to correspond to the line of approximation, and thereby binding it upon its convexity and twisting it in several ways, it was made to conform to the inequalities of the parts upon which it was to stand. The whole adjustment was easily and quickly done, and the apparatus when secured in place set most beautifully.

There was nothing which required to be noted in the after treatment, excepting a slight leakage, which was noticed after the third day, indicating that a partial failure of the operation, at least, had to be looked for.

On the ninth day I removed the suture apparatus, and sure enough found the line of union incomplete. At the right hand angle there remained an opening not larger than a pin's head. About half an inch from this there was another one of about the same size. Through these little openings, after the button was removed, a considerable quantity of urine escaped.

Another operation therefore was called for, and in planning this, I resolved to attempt closure not only of these fistules, but the recto-vaginal also. Accordingly on the 3d of April, I operated. Two sutures were employed for each of the vesico-vaginal openings, and three for the recto-vaginal.

On the eighth day removed the suture apparatus, but found only one of the vesical openings completely closed; the other, and the rectal opening partially so only. The former failed, I was disposed to think, from imperfect paring, the light having been very bad at the time of our operation. The urine escaping through this, found its way beneath the button on the rectal opening, and thus prevented

this from closing. Another operation, therefore, was called for, which I performed after waiting a suitable length of time.

Our patient now was not in a favorable condition for the operation, her general health being somewhat impaired. Both openings, at this sitting, were closed.

Upon removing suture apparatus on the eighth day, I found another failure. The vesical opening was greatly reduced in size, but the other opening was about the same. Our patient after this was sent to the country to recuperate her health. So soon as this took place, strange to say, the small vesical opening closed spontaneously, leaving the patient with entire control over her urine. Only the rectal opening now remained, and at another operation this was closed, and the cure of our patient thereby completed.

Remarks.—I have detailed this case at length, even risking being considered tedious, to state all the circumstances connected with its management. It is, I think, interesting in several respects. The existence of two fistulous openings, involving nearly the whole of the vesico-vaginal septum, and their complication with recto-vaginal fistule and retrocession of the uterus, the difficulty experienced in obtaining a complete result, the final cure after so many years of suffering, are all points of no ordinary interest. Our first operation, considering the size of the fistule and the tendency of the cervix uteri to fall through it into the bladder, was, it must be admitted, attended with a highly satisfactory result. The two small points that remained unclosed were doubtless owing to imperfect paring, not to any cutting out of the sutures or imperfect adaptation of other parts of the apparatus. Our failure, at subsequent operations to close these small openings, as well as the one in the bowel, is such that every surgeon may expect now and then to meet with. One who is constantly operating is liable to become careless in attending to small matters, which frequently leads to unfavorable results when it might not otherwise have happened. I am not exempt from this fault myself, and I think if I had taken a little more pains with my operations in this case, I would not now be under the necessity of recording my two failures.

CASE XXVI.—*One Urethra-Vaginal and Two Vesico-Vaginal Fistules, with great Contraction of the Vagina; Failure of the "Clamp Suture;" Case that led to the adoption of the Button Suture; Closure of all the Fistules; Relapse; Case finally discharged uncured.*—Matilda, colored

girl, property of Col. M. Stamper, of Early county, Ga., was put under my care February, 1855. *Æt.* about 21; short, heavy built and stout; was confined with her first child in 1850. Says that she was in labor about two days; child was removed with instruments; does not recollect anything about passing urine during labor; very soon afterwards first noticed it dribbling from her without having any desire or ability to pass it in the natural way; was for several months confined to bed, and during this time had great soreness of the parts. Amenorrhœa now; general health somewhat impaired.

Examination.—Found the vagina very much contracted by indurated bands extending across it. One just below the cervix uteri occasioned such narrowing of the canal that the point of the index finger could scarcely be passed through it. On the posterior side of the organ the induration and contraction were greatest, giving rise here to considerable shortening of the canal and drawing in the labium of one side. Communicating with the urethra very near the meatus, there was a small opening; further back, just across the beginning or root of the urethra was situated another, about three-quarters of an inch in length, and of course communicating with the bladder. About half an inch above this last and to the extreme right was situated still another opening, about the same size. These two last, one having its longest diameter transverse and the other longitudinal, represented two sides of a square.

In attempting now to pass a catheter through the urethra into the bladder, I found great difficulty, owing to distortion at its neck, caused by the anterior border of the fistule situated there being drawn up to the pubic bones.

Having considered now the case in all its bearings, I determined to make an application of Dr. Sims's "clamp suture," this being the suture at that time I was employing. Before proceeding to the operation, however, the question arose in my mind as to the possibility of closing both of the vesical openings at once by two sets of clamps, this appearing to me to be the preferable course. Upon a minute examination now of the parts with reference to the practicability of such a procedure, I was convinced that it could not be done, owing to the narrowness of the intervening tissue upon which both sets of clamps would have to rest. Thus applied, one of each set of clamps would necessarily cross the other. Seeing this difficulty, therefore, I determined upon the only alternative, which was to close

one opening at a time. The upper one I selected for my first operation, thinking by this to avoid to some extent the irritating effect of the urine passing through the lower opening. As a preparatory measure now for this operation, I had to make deep incisions in the contracting bands of the vagina, and then dilate the organ by the use of tents. This took up considerable time, and was the cause of much suffering to the patient, owing to the excessive irritability of the parts.

Operation.—March the 23d, 1855, everything being as favorable as we could expect under the circumstances, the operation above indicated was performed. Owing to the great induration and contraction of the parts, I encountered no little difficulty in going through with the different stages. Three sutures were required to close the opening after its edges were thoroughly pared. These being introduced, transversely of course, the clamps were applied and secured as Dr. Sims directs. The edges of the opening came together well enough, but they were not accurately adapted to each other, owing to a greater thickness of one than the other, and the consequent elevation of the corresponding clamp above its fellow.

With this condition of things our patient was put to bed and a catheter introduced into the bladder to convey off as much of the urine as possible. Very little of it, however, passed through the instrument; it continued its old course through the vagina. The clamps were allowed to remain the usual length of time. When I came to remove them I had no need of scissors. The whole concern had sloughed out and lay loose in the fistulous opening, now greatly enlarged.

The result of this operation thoroughly satisfied me that I should never be able to close successively the fistulous openings in this case. The whole failure I attributed to the poisonous effect of the urine upon the denuded edges of the fistule and the raw surfaces caused by the embedding of the clamps. So well was I convinced of this fact that I should have discharged the patient without ever making another trial, had not the idea fortunately occurred to me of protection to the approximated edges of one fistule from the irritating effect of the urine passing through the other. From this thought, scarcely need I say, the principle of our button suture originated and was put into practice. Although the principle of protection was suggested to me as above stated by the peculiarities of this case, yet

the first trial of it was not made here. Having at the time other cases ready for operation, I applied the principle in them. From the great success I had with it in these cases, I was now encouraged to believe that I would soon be able to effect a cure in this one. So accordingly I commenced a course of treatment preparatory to an operation. This consisted in making daily incisions into the indurated bands, and then dilating the vagina as far as was practicable, as I did before my first operation with the clamps. Although, after several months' perseverance I succeeded in dilating the parts pretty well, still there remained great hardness and a disposition of them to return to their former condition. I took advantage of a favorable opportunity, however, and operated, selecting again the upper fistule.

After paring the edges thoroughly, three sutures were called for, and a button of the ordinary shape. Everything did as well as could be expected under the circumstances. On the ninth day, removed the suture apparatus, and was delighted to find union complete. Upon examination of the parts, several days afterwards, however, I discovered that the newly-formed cicatrix, at its lower extremity, had given way—in short, there was a partial re-production of the fistulous opening. This was my twelfth operation with the button suture, and I may add, my first failure with it.

My next operation was to close this small fistule, which had been re-produced, and the one just across the root of the urethra, which I did under one button. Four sutures were required for the lower one and two for the upper. The former were introduced antero-posteriorly, and the latter transversely. A single button, as above stated, was used for both fistules. The case progressed very well to the ninth day, when we removed the suture apparatus. We now found that the upper opening had failed to close, and the lower one had closed only partially, the failure being at the right hand extremity. After this operation, there was considerable irritation, and some ulcerative inflammation of the vaginal mucous membrane, occasioned by a more acrid condition of the urine.

I next concluded to try the urethral opening. This, it will be recollected, was situated very near the meatus urinarius. The narrow bridle separating the one from the other, I laid open as a preliminary step, and then treated it as an ordinary rent, employing my peculiar form of button for this injury. (See figure 9, in the article previously referred to)

Upon removing the suture apparatus on the eighth day, I found union of the parts so near complete that I considered our operation successful. Only the two small vesical openings, both the result of partial failures, now remained. These I worked upon in good earnest, hoping to obtain a complete result in spite of the ulcerative inflammation now and then set up, and the tendency of the vagina to re-contract. Operation after operation I performed, with varying success, until finally the last one was closed, and our patient pronounced cured. Our consolation at this gratifying result, however, was of short duration. Four or five days had scarcely elapsed before ulcerative inflammation of the vagina supervened, and partially destroyed the cicatrix of the last fistule closed. By this unfortunate result, urine was again allowed to pass into the vagina, which now appeared more acrid or irritating in its effects than ever. Months were required now to subdue this inflammatory action, and to overcome the contraction of the organ, which followed as a consequence. During this period, the patient's general health suffered very much.

Still not discouraged at the above unfortunate results, I concluded to renew my operations; believing, however, that there was considerable doubt as to my ever being able to effect a permanent cure, owing to this proneness of the parts to take on morbid action. After this, every operation, or even an incision made in the dilating process, would be followed by the peculiar form of inflammation which we have mentioned. Instead now of advancing our patient towards a cure, the reverse was observed. Every effort of ours, seemingly, was attended with a loss of ground, until finally one cicatrix after another yielded to destructive morbid action, and our patient was placed where we started with her. In this condition I discharged her, April, 1858, she having been under treatment something over three years. I performed in all, according to my recollection, ten operations.

Remarks.—This is one of the two cases referred to as being still under treatment, in the concluding remarks of my article, published in the *North American Medico-Chirurgical Review* for July, 1857. The case I have reported here at length, for the reason that I am desirous of recording, in regular order, my unsuccessful as well as my successful operations. The result, as above shown, is, I conceive, by far more interesting, in a practical point of view, than if it had been ever so successful. It certainly illustrates, in the most striking

manner, some of the difficulties to be encountered in practice, and the perseverance that is sometimes necessary to overcome them.

Again, I may say, the case is interesting in other respects. First, it was its peculiarity of triple fistules which first caused me to see the imperfection of the so-called clamp suture, and to lead me to the adoption of our protective principle, or button suture. Secondly, the case is interesting as being the first in which the latter form of suture had failed in my hands, this being the twelfth application of it. Thirdly, the case is remarkable as being the only one I ever discharged uncured, when a fair trial of the button suture had been made.

CASE XXVII.—*Vesico-Vaginal Fistule, complicated with Constriction of the Vagina; Case operated upon with the Button Suture, at the University College Hospital, London; Operation successful; Relapse.*—Soon after my arrival in London, June, 1858, I was told by Prof. Erichsen that there was a case of vesico-vaginal fistule in one of the wards of the above-named hospital, which had been for some time under the treatment of Mr. Marshall, by the electric cautery. He requested that I should accompany him to the hospital and make an examination of the case, which I did, in the presence of himself and Mr. Marshall. My notes of the history of the case I have lost, but this is of no consequence. The woman, according to my recollection, was about thirty-five or forty years old, rather above medium stature, stout and heavily built, and excepting her excessive nervousness, appeared to be in the enjoyment of good health. She had been married a good many years, and had had several children. At the birth of her last she sustained the injury of her bladder for which she was admitted into the hospital.

Examination.—Fistule belonged to my fifth class, first variety; that is to say, it was high up in the vagina, complicating the anterior lip of the cervix uteri, which formed its upper border. It was rather circular, and about large enough to admit easily a No. 10 bougie. Even beyond the limits of the cervix uteri, the edges were hard and unyielding. Across the vagina, just a little below, there were hard and unyielding bands, which had resulted in great constriction of the canal at this point, and contributed largely to the condition of the edges of the fistule above mentioned. This feature of the vaginal canal I regarded as a very serious complication of the case,

and so expressed myself to the gentlemen present, not believing, however, but that it could be overcome and a cure effected.

Prof. E. now requested that I should take charge of the case, and at my convenience to operate, as he desired to see me make an application of the button suture. At first I did not feel much inclined to do so, knowing what the difficulty in the case would be, and believing that my instruments would not arrive in time from New York to enable me to carry out the preparatory treatment necessary, before my engagements would require that I should leave London. I consented, however, to operate under the circumstances, and as soon as I could, which was ten days or two weeks after my first examination, I commenced the preparatory treatment. This consisted in making a deep incision upon each side of the constricted portion of the vagina, and then dilating the canal by the use of sponge tents. These were worn as constantly as the patient could bear, their size being gradually increased according to the progress of dilatation. Every day the tent was removed, and the vagina syringed out with cold water.

The above plan of treatment was kept up until the 21st of July, at which time I concluded to operate for the closing of the fistulous opening. The incisions I had previously made in the vagina had not, however, healed up; a condition of things which I very much regretted, knowing, as I did, that it would militate very much against the permanent success of the operation. But my engagements to leave London in a few days, left me with no other alternative than to operate at once. I remarked to Prof. Erichsen, that these granulating surfaces being in such close proximity to the fistulous opening, were liable to do mischief by their cicatrization and the consequent re-contraction of the vagina. I had before operated under similar circumstances, and had seen a reproduction of the fistulous opening from the above causes; I was, therefore, prepared to meet with an unsuccessful result.

Operation.—The patient being brought into the amphitheatre, was placed upon a table, on her knees and elbows, and the operation commenced. Present: Professor Erichsen, Mr. Marshall, Mr. I. B. Brown, Mr. Spencer Wells, Dr. Tanner, Dr. Browning, Dr. J. Henry Bennet, Dr. Stone, the distinguished Professor of Surgery of the University of Louisiana, and a number of other medical gentlemen and students. Upon introducing the speculum, I found that the

fistulous opening could be but very poorly displayed, owing to the fact of our having a sky-light instead of the light from a side window, which is always preferable. The disadvantage I labored under on this account retarded very much the different stages of the operation, and especially that of paring. I succeeded, however, in completing the operation to my satisfaction in about three-quarters of an hour. Three sutures were required (one of them touching the anterior lip of the cervix uteri), and a button of the usual shape for this variety of fistule. The whole being secured in place, the patient was put to bed, and a self-retaining catheter introduced.

I attended the case for three or four days after the operation, and during this time there was not an untoward symptom—everything went on, as well as could be desired.

Upon my departure from London, I left the case in charge of Prof. Erichsen, with directions to remove the suture apparatus on the ninth day, which he accordingly did. Two or three days afterwards he addressed a letter to me at Edinburgh, where I was sojourning, as follows: "I am very glad to say that the case of vesico-vaginal fistula on which you operated last week has gone on most satisfactorily. The wires and plate were removed on Friday, the ninth day after the operation. Union appeared to be firm and complete, and not a drop of urine has since escaped. We may, therefore, I think, look upon the cure as perfect."

As would be indicated by the above report, the result of our operation was entirely satisfactory. I certainly regarded it so, and would not have thought otherwise, had I not received, a couple of weeks afterwards, a letter from Mr. Wilkerson, House Surgeon of the University College Hospital, stating that the cure of our patient had not been permanent; in other words, that there was leakage of the bladder. This result I, of course, regretted very much to learn, but I cannot say that I was much surprised at it. I recollected the condition of the parts when I performed my operation, and knew very well what had happened. The raw surfaces in the vagina, heretofore mentioned, had cicatrized, and the consequent contraction of the canal had partially pulled asunder the edges of the fistulous opening; hence the partial or complete failure of the operation, and dribbling of urine. Such a result, as I have before said, was to be expected under the circumstances. Upon my return to London, some six weeks after the operation, I learned from Prof. Erichsen that our

patient had gone to the country to recruit her health, and would soon return to the hospital. He remarked that dribbling of urine did not take place for four or five days after the removal of the suture apparatus. This showed very conclusively that there was a reproduction of the fistule there, which can only be explained by the causes above mentioned.

This case, therefore, will require to be thoroughly prepared before any operation is likely to be attended with permanent success. I do not regard it as at all difficult, and had I the time to devote to it, I could, at another operation, I am quite sure, guarantee entire success.

Remarks.—This case I have reported at length, giving all the facts connected with it as near as I can. Our operation, although performed under many disadvantages, as is to be inferred from the facts above stated, may very justly be said to have been successful, and yet not absolutely so. The immediate result of it cannot be regarded otherwise than satisfactory, as showing the efficacy of the method adopted. The reproduction of the fistulous opening was, from the very nature of things, to be expected, and should not detract in the least degree from the merits of a successful operation.

Could I have prepared this case properly for an operation, and attended it throughout, it certainly would have been more gratifying to me, and perhaps more decisive of the just claims of our suture, and have saved it from the unjust animadversions which appeared in the London Medical Times and Gazette a couple of months after our operation.

The object of the author of these remarks seemed to be to show the inefficiency of our suture apparatus. This he did by producing the results of our operations in Great Britain, performed, as they all were, under many disadvantages. Thus, in the case of which we are speaking, he puts down the result as a failure, without the statement of a single fact connected with it. Whether our operation was a failure or not, I will leave to others to decide. All the facts of the case are fairly stated.

CASE XXVIII.—*Vesico-Vaginal Fistule, complicated with Retroversion of the body of the Uterus and Incarceration of its Cervix in the Bladder; Case operated upon at the Royal Infirmary, Edinburgh, with the Button Suture; Death of the patient on the sixth day; Autopsy.*—The following report is taken from the *Edinburgh Medical Journal* for October, 1858, and is by my much esteemed friend Alexander Keiller,

M. D., F. R. C. P., Lecturer on Midwifery and the Diseases of Women and Children in the Medical School, Surgeons' Hall, Edinburgh :

[The pitiable condition of those laboring under vesico-vaginal fistula can scarcely fail to enlist the sympathy even of the least humane ; the state of misery to which the unfortunate subjects of this complaint are constantly subjected being, in most cases, more than sufficient to excite regret that a structural defect so local and comparatively insignificant should be considered so much beyond the pale of curative control.

It may be confidently affirmed, that the records of surgical experience sufficiently show that the results of even the most approved modes of treating vesico-vaginal fistula have been the reverse of encouraging, if not in the great majority of cases absolutely futile, and it therefore must be conceded that to the originator of any operative procedure or plan of treatment, calculated to restore the efficiency of the vesico-urethral canal in urinary fistula occurring in the female, much credit is due, and a large amount of gratitude will doubtless be experienced towards those whose persevering ingenuity and skill may lead to the achievement of such an important practical result, as the satisfactory cure of that hitherto unmanageable lesion.

It being by no means an easy or gracious task to decide as to whom such an honor may already belong, it is not my intention here to canvass the individual merits or special claims of those who may be entitled to much of our regard in connection with this subject, my object on the present occasion is simply to relate the particulars of an unusually interesting case which was recently operated on, at my request, by Dr. Bozeman, of Montgomery, Alabama, United States, who is well known to have distinguished himself, not only by the discovery of what is styled the "button mode of suture," but by the singular amount of success which, in his hands, has attended this very ingenious plan of treatment.

As the comparative value and safety of the various modes of operative treatment, recommended from time to time, can alone be determined by a correct knowledge of the facts and circumstances connected with unfortunate as well as successful results, it behooves the practitioner faithfully to record the particulars of any special instances of failure, which may in any degree tend to the onward progress of surgical art.

Besides such cases, the publication of which are often so instruc-

tive, there are unfortunate results occasionally occurring, which, although they cannot fairly be attributed, either to the operation or the operator, it is not only proper but prudent to make known.

Such a case is the following, which, in accordance with the views just expressed, and with the concurrence, or rather the solicitation, of Dr. Bozeman, I will now endeavor to relate.

Catherine M., æt. 28, native of Ireland, first pregnancy, was admitted into the Royal Maternity Hospital at 5, P. M., on the 26th September, 1854. Although symptoms of labor had come on previous to her admission, the first stage was not completed until 9, P. M., on the 28th, and her delivery was not accomplished until the evening of the 29th, when, immediately after being summoned to the case, I applied the long forceps, and with some difficulty extracted a large dead male child. The labor thus having been allowed to occupy upwards of 88 hours, it was not difficult to account for the vesico-vaginal sloughing and fistula which followed. The urine was first observed to come per vaginam, within a fortnight after delivery, corresponding with the period at which the separation of the slough usually occurs; and subsequent examination, as well as the persistence of the urinary sign, left no reason to doubt that an extensive breach in the vesico-vaginal septum had taken place.

After a very tedious convalescence from her unusually protracted labor, the patient was able to move about; but, from being originally of a somewhat plump and healthy frame, gradually began to indicate the undermining effects of the constant irritation and discomfort so inseparable from such a condition, more especially among the poorer class of women to which she belonged.

During the years which occurred from her parturition to the date of the operation, I had frequent opportunities of observing the wretched state of health in which she lived. On several occasions she placed herself under my care, with the view to an attempt being made at a radical cure, but because of the large size of the fistulous opening, and the restless, unmanageable character of the patient, no operative measures were adopted.

The nature and extent of the fistula were investigated by several gentlemen accustomed to examine and treat such cases; amongst others I may mention Mr. Spencer Wells, who, on one occasion, now several years ago, satisfied himself that the opening was situated in close approximation to the cervix uteri, and was capable of admit-

ting the points of three fingers (or about the size of half a crown in circumference), and considered that it could not be cured but by repeated operations (probably three), and, moreover, stated his belief that a preparatory step would be necessary; viz: that of dividing the whole of the mucous tissue, between the cervix and the fistula, so as to admit of the posterior edge of the latter being sufficiently separated from the anterior lip of the former, in order to allow approximation and union taking place without injurious dragging of the adjoining parts.

I mention this circumstance for the purpose of proving the particular relative position of the parts involved, as seen to exist at the time just referred to, and as compared to their subsequent relation, a change of position having occurred, which led me, along with others, to believe that, in addition to fistula, a state of vaginal occlusion had gradually supervened; for, on examining the parts on a more recent occasion, we were induced to suppose, from the entire absence of the os and cervix uteri from the vagina (which had now become very much shortened), that occlusion of the latter canal had taken place, and that in the event of an operation being now had recourse to, it would be necessary to get rid of this supposed state of occlusion before the fistulous opening could be properly reached and treated.

Such being our opinion of the state of matters in this case up to the time of its being seen by Dr. Bozeman, I felt justified in specially referring to it at one of the recent meetings of the British Medical Association, when Mr. I. B. Brown communicated his paper on the subject of vesico-vaginal fistula.

This view, however, of the nature and relative position of the parts, was corrected during a careful examination, subsequently conducted by Dr. Bozeman, who, by the use of a speculum and other instruments, admirably adapted for the purposes of diagnosis, convinced me as to the exact relation of the organs involved.

On placing the patient on her knees, the fistulous opening was readily brought into view by the introduction of the speculum referred to. The os uteri was now found directed forwards, completely through the fistulous opening into the bladder, by which relative position the fundus uteri was pressed downwards and backwards, and by being thus partially retroverted, accounted for the shortening

of the posterior wall of the vagina, and the apparent vaginal occlusion before alluded to.

By passing a sound backwards through the ante-verted os, the retroversion of the fundus was distinctly shown, and it was, moreover, ascertained that the whole cervical portion of the uterus had become fixed into the gap formed in the bladder, the *posterior* lip of the os being now the most dependent, and lying in immediate contact with the fistulous opening in the upper and anterior wall of the vagina. By this abnormal position, it became abundantly evident that menstruation had for some time past taken place through the vesico-vaginal opening, from which was seen protruding a portion of the lining membrane of the bladder. This herniated condition of the mucous membrane was in a state of considerable congestion.

Although the parts had thus become unusually situated and fixed, Dr. B. undertook the treatment of the case, according to a plan which he has the merit of suggesting; and, in several equally complicated cases, successfully carrying into effect; viz: that of first relieving the vesical incarceration of the cervix uteri, and then restoring it to its normal position in the vagina; and this he accomplished by a peculiar modification of the more ordinary plan of fixing the button suture. To the nature of this ingenious procedure I shall now refer, and state the facts connected with the operation as they were noted at the time.

August 4th.—To-day Dr. Bozeman operated in presence of Drs. Simpson, Weir, and a number of other members of the profession in Edinburgh. The patient, after being put under the influence of chloroform, was placed on her face, with the pelvis raised, and the head and chest in a depending position, which was maintained by a peculiar arrangement on the operating table, and partly by manual support. Considerable difficulty was, however, experienced in keeping her in a proper attitude, and at the same time continuing the safe and sufficient administration of chloroform. The necessity of having a table specially adapted for the purpose of operating on, in such cases, under chloroform, was very evident. Dr. Bozeman commenced by enlarging the opening on either side by carefully dividing its extremities in a lateral direction by means of an angular bladed knife. By these lateral incisions the cervix uteri became disengaged from the bladder, so as to allow of its being more readily restored to its normal position in the vagina.

Having, by this preparatory procedure, brought the os and fistulous opening, not only into more distinct view, but into a more natural position (the anterior, and not as before the posterior lip of the former, being now in more immediate juxtaposition with the anterior edge of the latter), the operation was proceeded with in the following manner: By means of a small hook, the right angle of the anterior edge of the fistula was raised, and the mucous membrane dissected off transversely towards the left angle. The anterior lip of the cervix uteri was then pared far in upon the vesical side, so as when the sutures were introduced and adjusted, the tendency to the previously existing uterine displacement might be overcome. By means of an ingenious *port-aiguille*, seven silk sutures were passed through the now denuded lips of the fistula; to the end of each silk thread a silver suture was attached, and the former then drawn through, so as to bring the latter into their position. The silver sutures being arranged in pairs, and the parts to which they were attached put on the stretch, Dr. B., after observing the extent and shape of the fistula thus ligatured, cut out a leaden button, shaped and perforated it on the spot, and immediately applied it over the sutures, fixing the former to the latter by means of seven small perforated leaden bars or crotchets, which he squeezed so as to sufficiently compress the sutures—each suture, after being by means of forceps turned over the edge of its corresponding bar, was cut through, and the whole apparatus described left lying so completely against the fistulous opening, as to induce every one present to express their admiration, not only of the ingenuity of the plan, but of the admirable manner in which in this case it was accomplished. In manufacturing the button (which occupied but a few minutes), Dr. B. took care to make a deep notch in its posterior edge, for the purpose of better accommodating and preventing injurious pressure upon the denuded anterior lip of the now replaced cervix uteri. The great advantage of substituting *lead* for silver (or other hard and inflexible material) in the formation of the button, was thus rendered obvious, its soft and comparatively ductile properties readily admitting of its being cut and moulded into the form adopted for the case in hand. The patient was put to bed and placed on her back, a catheter was then introduced through the urethra, but with considerable difficulty, owing apparently to some constriction at the vesical extremity of the urethra.

August 5th.—The catheter introduced into the bladder after the operation was allowed to remain, with directions for its being taken out every twelve hours, and the external parts syringed with warm water and again introduced. One grain of opium to be given every four hours. During the evening the patient became irritable and unruly, constantly trying to withdraw the catheter. In the evening she vomited several times.

At 11, P. M., she was quite drowsy, urine coming freely by the catheter.

August 6th.—Complains of much thirst and paroxysms of pain in the abdomen. Catheter removed, cleaned, and reintroduced; pulse 100. Slight tenderness on surface of abdomen, tongue dry and dark—skin hot, is very irritable and restless. Opium continued. Menstruation has appeared; the catamenial fluid escaping from the vaginal canal; none through the catheter. The urine flows freely through the catheter, none is escaping per vaginam. Ordered lemonade *ad libitum*.

August 7th.—Has not slept through the night; is very restless, complaining of pain in the abdomen, which is tympanitic and tender to the touch, particularly in the right groin; pulse 114, full and strong; skin hot and dry; much thirst, tongue brown and parched; she is still found to be menstruating, all the secretion coming per vaginam. The urine is freely secreted, and flows freely by catheter, which has been regularly removed, and there is no admixture of blood. No urine escaping by the vagina. She has a constant hacking dry cough, and has vomited twice this morning. Hot poultices to be constantly applied to abdomen, and opium continued.

7, P. M.—She is much in the same condition, but the pain somewhat less in the belly, which, however, is more tympanitic.

August 8th.—Menstruation continues, and the urine flows freely, and quite unmixed with any blood. Pulse 122, full, strong, and hard; no escape of urine per vaginam. Much pain and distension in abdomen. Turpentine stupes applied, and opium continued; the changing of the catheter has been regularly attended to; bowels still confined; tongue dry and dark; skin hot. This evening she has vomited several times; ordered mustard poultices to abdomen.

August 9th.—Slept a little during the night; feels less pain in the belly, which, however, has become still more tympanitic. Pulse 116, but weak; skin cooler; much less thirst, but the vomiting

continues. Menstruation ceased. Stimulants to be given occasionally. The urine flows freely by catheter, unmixed with blood.

7, P. M.—Appears weak, and still inclines to vomit; ordered brandy $\bar{\text{z}}$ iv. Opium continued.

2 o'clock, A. M.—Has not slept, and is crying out with pain in the belly, which has become much aggravated. Vomiting. Hot turpentine stupes applied freely. Brandy and opium. Pulse very rapid.

6.30, P. M.—The vomiting incessantly continues; pain unabated; pulse irregular, weak, and fluttering. Much tympanites; tongue dry; considerable thirst. All the urine comes by the catheter, but it appears darker, and is less in quantity; she appears sinking. The catheter has been regularly removed and washed out; bowels not moved since operation. During the day the symptoms of peritonitis continued, and death occurred about 7, P. M., on the sixth day after the operation.

Post Mortem Appearances.—The surface of the peritoneum was covered with recent lymph, which glued together the coils of the intestines.

No trace whatever of any wound, or direct injury to the peritoneum in the vicinity of the parts involved in the operation, was discovered, either before or after their removal from the pelvis, which was most carefully done with the view of ascertaining the source of the inflammatory process. The pelvic organs being removed *en masse*, together with the front of the pubis and ischium, with the external genitals, and other soft parts attached, the edges of the fistulous opening were found well approximated, the application and adjustment of the suture apparatus being in every respect perfect.

On opening the bladder, so as to obtain a view of the vesical side of the septum, union was here also found perfect. At the right extremity of the line of union, however, a sloughy condition of a small portion of the mucous coat of the bladder existed, at which point (in all probability consequent on slight urinary infiltration) cellular inflammation had kindled up, extending subsequently into the surrounding tissues, and more especially downwards towards the right ramus of the pubis, where a small quantity of thin purulent matter existed.

From the progress and character of the symptoms during life, and the appearances observed on dissection, it was evident that cellulitis

had set in early ; that the inflammatory process had commenced in, and was communicated from, the sloughy point referred to, as having been seen at the angle of the fistula on its mucous surface, and that subsequent peritonitis was the cause of the fatal termination. The position of the uterus, as well as the condition of the vesico-vaginal septum, showed that the special mode of operation adopted in this case (a mode which seems sanctioned by the results of Dr. Bozeman's previous experience, *vide* his Pamphlet, pp. 26-7), fulfilled the object intended ; viz : that of excluding the os uteri from the cavity of the bladder, and fixing the cervix into its normal direction towards the vagina, thus overcoming the tendency to ante-version, and at the same time facilitating the approximation and necessary coaptation of the two edges of the fistulous opening.

The two sutures which were specially introduced for this purpose, through the substance of the cervix uteri, were found transfixing the anterior lip to the depth of half an inch from the os ; the paring of the edges of the fistula, their coaptation by the various sutures, and their fixing by the button apparatus, being altogether as perfect as could in any case be desired.

I deem it proper to state, that the bodily and mental conditions of the patient were such as to go far to account for the unfortunate termination, she having, for a considerable period previous to the operation, lived in a state of great penury, being ill-fed, wretchedly clothed, and long accustomed to a mode of life which rendered her a most unfavorable subject for an operation.

Although endeavors were made from time to time to restore her bodily health, her weak and singular state of mind usually rendered her very unmanageable, and doubtless had a most injurious influence immediately subsequent to the operation.)

Remarks.—The above case, scarcely need I say, is one of much interest to the surgeon. To me it is especially so, being the first and only one I ever had to terminate fatally from an operation of this kind. When the case was presented to me for an examination, I knew nothing of its previous history. I took it for granted that, as regarded the general health, all was right, and I viewed it only in a surgical light. I saw at once what the difficulty in the case was, and I knew it could be overcome. In deciding upon the course, however, to be pursued, as regarded an operative procedure, it did not enter my mind that I had a broken-down constitution to deal with—a

condition of things, according to my experience, seldom met with in the United States. The class of patients we mostly have in this part of the Union—negroes—are well-fed, have good constitutions, and stand operations, perhaps, better than any other population in the world. In Europe, the reverse of this is true. A large proportion of this class of patients, in that country, are reduced to the lowest penury, with broken-down constitutions, from drink and other vices, when they apply for surgical aid. The surgeon's chances of success, then, are, as a matter of course, greatly lessened, however skillful he may be. Under such circumstances the simplest case is liable to be attended with the most disastrous consequences from an operation. Such was the character of our patient, and the causes which determined the unfavorable result of our operation. Even a simple incision in the vagina, or in almost any other part of the body, would, in all probability, have been attended by a like result. I had met with the same complication that existed in this case, in my practice in this country, and yet I had never seen an untoward symptom after any of my operations. The pyæmia, therefore, which carried our patient off, I little expected.

This patient, as it seems from Dr. Keiller's account, had been a standing case at the hospital for some years, and from what I could learn, had been given over as incurable. It was, therefore, calculated to excite the deepest commiseration, and to call aloud for the best resources of surgical art. In such a condition, and with no prospect of relief, what was life to this poor creature! Death was far preferable, and to this end, I have no doubt, she had given herself up; therefore, almost any attempt to relieve her seemed to be justifiable. Could she have undergone some preparatory treatment before our operation, the result might probably have been different. Should I ever be so unfortunate as to meet with a similar case, I shall take this precautionary step before operating.

As to the post-mortem appearances we found, Dr. Keiller has said all that is required.

* The preparation (namely, the parts involved in the operation, with the suture apparatus adjusted just as it was at the time of the operation), is in the possession of my friend Dr. Keiller. So far as the immediate result of the operation is concerned, it must be regarded as entirely successful. Union of the edges of the fistule was found to be complete throughout, and the cervix uteri restored to its proper

place in the vagina; our patient, therefore, lived long enough to prove, we may truthfully say, the success of the operation.

CASE XXIX.—*Vesico-Vaginal Fistule operated upon with the Button Suture, at Edinburgh, in the private practice of Prof. Simpson. Operation successful.*—The subject of this case came to Edinburgh to consult Prof. Simpson, just after my operation in the preceding case. Being in the city at the time, Prof. S. requested that I should make an examination of the case, with a view to an operation, which I accordingly did, in the presence of himself and several other medical gentlemen. The case I found to be plain and simple. My notes of this case enable me to state it as follows: Mrs. W., from Loch Lomond, aged 32, tall, well-formed, and apparently enjoying very good health. She states that she was confined with her third child about fifteen weeks ago, at which time she became the subject of her present affliction. Her former labors were unattended with difficulty. Her last labor lasted twenty-seven hours, and was terminated by opening the child's head and delivering in that way. After this she had considerable difficulty in relieving the bladder; the catheter was required; about two weeks after labor, first noticed dribbling of urine, which has continued uninterruptedly to the present moment.

Examination.—Fistule was found in the *bas fond* of the bladder, and accordingly belonged to the third class of Velpeau. It was circular, and scarcely large enough to admit the point of the index-finger into the bladder. Its posterior border was somewhat indurated.

There being no previous preparation of the case required, excepting to clear out the bowels, I proceeded, August 15th, to the

Operation.—There were present Prof. Simpson, Dr. Keiller, Dr. Coghill, Dr. A. Simpson, and Mr. Edwards, of Edinburgh, and Dr. Paul, of Elgin. The patient was placed in the usual position, upon her knees and elbows, before a window, and the operation commenced. The edges of the fistule were easily pared, and the sutures then introduced, four being required. Two of them were of iron-wire, which I introduced at the solicitation of Prof. Simpson, in order that the comparative effects of the two metals might be tested. I was rather averse to doing so, but seeing that there was not likely to be much dragging upon the sutures, I accordingly put them in.

The sutures now being adjusted, a button of the ordinary shape

was slid down upon them and secured in the usual way. The patient was then put to bed, and a self-retaining catheter introduced. The after-treatment consisted in keeping the bowels locked up by the free use of opium, cleansing the catheter once or twice a day, and syringing out the vagina with cold water. Diet to be light. Day after the operation patient is doing well. All the urine passes through the catheter.

My engagements to leave Edinburgh now prevented me from seeing further the progress of the case. It was left in charge of Prof. Simpson, with directions to remove the suture apparatus on the ninth day. As to the result, here is what Prof. Simpson says, in a letter addressed to me at Paris, some six weeks afterwards: "The patient you operated on recovered excellently. The two iron stitches were exactly in the same healthy condition as the two silver stitches, when I removed the shield. She has gone home quite well."

Remarks.—The report of Prof. Simpson, as to the result of the above case, was truly gratifying to me, especially so, as my other operation in Edinburgh had turned out so unfavorably. As to his statement of the comparative effects upon the tissues of the two metals used in the case, I do not for a moment question it. It does not, however, accord with my experience, nor that of others who have employed these two kinds of suture. This was a very favorable case for the iron-wire sutures, and being used in conjunction with those of silver, the difference of effect upon the tissues would necessarily be slight. I do not pretend to doubt that, when the fistulous opening is small, the edges coming together easily, as was the case in the present instance, iron-wire sutures may be made to answer, as they will not cut out to a sufficient extent to endanger the tender cicatrix before their removal becomes necessary. But, as I have heretofore said, if the opening is of considerable size, and there is more than ordinary stress upon them, some, especially the middle ones, are almost sure to cut through and cause a partial failure of the operation, as I have seen. Knowing this, therefore, to be a fact, I could not recommend sutures of this metal, and would not have employed them in the present instance, but for the request to do so by my friend Prof. Simpson. There is no metallic suture, in my humble judgment, equal in all respects to that of silver.

CASE XXX.—*Vesico-Vaginal Fistule operated upon with the Button*

Suture, at the Royal Infirmary, Scotland ; Operation successful ; Case Reported in the Glasgow Medical Journal for October, 1858, by GEORGE BUCHANAN, A. M., M. D., one of the Surgeons to the Infirmary.—The above case, I should observe, was republished in this Journal for Jan., 1859, to which I must refer for a full account of our operation, and the after-treatment. As the case, therefore, has been presented once to the readers of this Journal, I shall content myself with introducing here, again, only what relates to its history and the final result, which I prefer doing in Dr. Buchanan's own language, as follows :

Mrs. Mary Cairney, aged thirty-five, was admitted to the Royal Infirmary on the 18th of August, and gave the following history of her case : She has had two children, and on both occasions labor was tedious. At the birth of her first child, which happened ten years ago, she was attended by a midwife, and labor lasted two days. She was delivered without the aid of instruments, the child being born dead. Her recovery was not tedious, and she soon regained her strength.

About nine years ago she had a second child, on which occasion she engaged the services of a medical man. Labor was again lingering, and at the expiration of thirty hours she was delivered with instruments, though of what kind she does not know. During the use of the instruments she suffered great pain, and the child was born dead. Immediately after the birth of this second child, she found herself totally unable to retain her urine and fæces. The dribbling of the urine annoyed her so much that she became a patient in the hospital of Enniskillen, where she was under treatment for five months ; but her health failing, she returned home for awhile. After several months she was reâdmitted to the hospital, and was again under treatment for a second period of five months, at the end of which time she was dismissed in much the same state as before admission. During her residence in the hospital she was seen by a number of medical men, and various plans of treatment were tried, but of what nature she is unable to explain ; the result, however, was always unsuccessful. Since then, that is, for about eight years, she has remained in the same state, and has not applied for relief to any surgeon, although she has always suffered the greatest inconvenience and annoyance from the urine constantly dribbling away, keeping her clothes moist and foul.

On admission to the Infirmary, examination of the parts disclosed a fistula the size of a sixpence, communicating between the bladder and the vagina, the situation of which was about an inch internal to the orifice of the urethra, and in the mesial line. The perineum was found to be ruptured, and the fissure between the rectum and vagina to extend for about three inches, laying these two canals into one for that extent.

Dr. Bozeman, of America, being in Glasgow on a short visit at this time, he was requested to examine the patient, and he pronounced it a case in which he could nearly insure success by his new plan of operation.

A consultation of the physicians and surgeons of the Infirmary was called, and they unanimously agreed to request Dr. Bozeman to perform the operation. Accordingly, that gentleman, having shown and explained the exceedingly perfect and ingenious instruments which he had brought along with him, proceeded to operate in the following manner, in presence of the hospital staff, and several medical gentlemen who had heard of the case, and were interested in the result.

Here Dr. Buchanan describes the operation—four sutures and a button of the ordinary shape were required.

August 26th.—The catheter has daily been removed, cleansed, and replaced. It remains *in situ* without apparatus, and the patient has remained steadily in one position. The bowels have not been moved, and there is apparently no ulceration around the shield. This being the ninth day from the operation, and the period which Dr. Bozeman recommends, I proceeded to remove the apparatus. The patient was placed on her knees, as at the operation, and the vagina being exposed, with the aid of a bent speculum, I removed the bullets by twisting them a little to one side with a long forceps, and snipping across the wires between them and the leaden shield. When the bullets were cut off the shield fell off, and the wound was seen perfectly cicatrized throughout its whole extent. Three of the wires I easily got hold of with a pair of forceps, and pulled out; the fourth had got imbedded in the soft tissue, and I could not find it. However, knowing that a metallic wire would produce no irritation, I left it in, rather than disturb the parts by a prolonged search. The patient was again removed to bed, the catheter retained as before, and she was requested to move about as little as possible for a day or two. The opium was discontinued.

27th.—Urine passes entirely by the catheter. Complains of headache and uneasiness in bowels. To have two drachms of sulphur and bitartrate of potash.

September 1.—Bowels moved freely yesterday by a large dose of black draught, after which the use of the catheter was discontinued. She can now retain the urine for some hours, and pass it voluntarily. Dismissed to-day.

On the 7th September I visited the patient at her own house, and found that the cicatrix had become quite firm. She can retain urine for two or three hours in the recumbent position, but not so long in the erect. Still complains of headache and indigestion, with irregularity of the bowels. I ordered some Gregory's mixture, and a small dose of quinine, twice daily.

On the 16th September the patient was stronger, but still had some uneasiness in stomach and bowels. She was ordered to take a little exercise in the open air, having confined herself to the house since she returned home. In examining the cicatrix, which I found perfectly strong, I felt the sharp point of the wire which was left in the tissues when the shield was removed. It had produced no inflammation or ulceration, and I easily seized it with the forceps and withdrew it. The bladder had not yet entirely regained its retaining power when the patient stands or walks, but she has perfect control over the urine for several hours when in bed. The bed is never wet, as it used constantly to be, and both the patient and her husband express themselves as exceedingly happy at the result, and thankful for the success of the operation.

October 4th.—I received a letter, while at Paris, from Dr. Buchanan, to this effect: "The woman is now very comfortable, but still is unable to control the urine when she stands or moves about. The cure of the fistula is perfect, but I presume long loss of vesical muscular action has caused this weakness, which, however, is slowly but gradually improving."

Remarks.—The fistule in this case belonged to my fourth class, first variety; that is to say, it involved a part of the trigonus vesicalis and the root of the urethra. The loss of substance here accounts for the want of power to control the urine while the patient stands or walks about. The retentive power of the bladder, under these circumstances, may, after a lapse of time, be restored, but it is very questionable in my mind. I have always found that, in this

variety of fistule, the want of retentive power of the bladder continues to a greater or lesser extent, however well the fistulous opening may have been closed. So far as the operation itself, in the present instance, is concerned, it could not have been more successful. This fortunate result now places the patient in a condition that she may be operated upon for the ruptured perineum under which she labors, with some prospect of success ; otherwise, an operation for this would be useless. The irritating effect of the uncontrolled urine being the obstacle to success.

CASE xxxi.—*Vesico-Vaginal Fistule of enormous dimensions, in the Hotel Dieu, Paris ; Two operations by MM. Verneuil and Robert ; Both failures ; Case afterwards operated upon with the Button Suture ; Fistulous opening closed at the first operation ; Case reported in the Gazette des Hôpitaux for January 4th and 6th, 1859, under the head, " Opération de Fistule Vésico-Vaginale Practiquée Suivant la Méthode Américaine," by M. ROBERT, one of the Surgeons to the Hotel Dieu.*—M. Robert's general remarks upon the case, the history, the progress of it after our operation, and the final result, I have translated as follows : For some years the American, and more recently the English Journals, have announced to the profession a number of successes in the operation for vesico-vaginal fistule. I admit that the recital of these cures left some doubts upon my mind ; doubts rather founded to the effect that, in France, notwithstanding the important works of M. Jobert upon this subject, the success of operations for vesico-vaginal fistule was as yet only exceptional, whilst in America almost as many successes are claimed as operations.

The truth is, I think that I should have the same doubts still as to the results of the operation practised in America and England, but for the fortunate circumstance which brought into our wards at the *Hotel Dieu* Dr. Bozeman, of the United States, one of the principal promoters of this method. By chance, we had then in the ward St. Paul a patient affected with a fistule, very large and very rebellious. We presented the patient to Dr. Bozeman, who, seeing the considerable dimensions of the vesico-vaginal perforation, hesitated a little to operate upon the patient. I insisted that the American surgeon should operate, agreeing with him that the case was very difficult, and affirming, besides, that a failure, under the circumstances, would not, in my eyes, be a sufficient reason to detract from the value of his operative pro-

cedure. Finally, he consented to my request, and performed the operation; in consideration of which he explained to us the advantages of the American method, such as is actually used, after the different modifications that it has undergone.

You know the result of the operation performed before us by Dr. Bozeman; it is very beautiful, very remarkable, and has entirely convinced us of the importance of the method.

In fine, one of our *internes*, M. Dubrizey, in a visit which he lately made to London, has had occasion to assist at three operations for vesico-vaginal fistule, performed by Mr. Baker Brown. He followed these patients; he took notes of them, and then, upon his departure, he was able to state that two of these patients were completely cured; the third was still under treatment; but after his return to Paris, he received a letter from Mr. Baker Brown, who informed him of the complete cure of this patient. Thus, in England, out of three operations, three cures were well authenticated by an eye-witness. This is a result truly magnificent, and such, it is proper to say, French surgeons are not accustomed to.

What is the reason of these successes, so numerous in America and England, whilst they are less frequent among us? Evidently this difference in the results can be attributed only to choice of operative procedure. It will be interesting, therefore, to inquire what are the fundamental principles of the French method, compared to those of the American, and to examine in detail the different modifications, the one and the other have undergone since their adoption to the present moment.

We will first say that vesico-vaginal fistules, rather rare in France, are, on the contrary, frequent in England and America, because of the position the patients in these two countries are made to take during parturition, which is to sit upon a chair. The pelvis is, therefore, placed in a declining position, and the head of the child presses strongly upon the anterior wall of the vagina; thus, fistules are frequent. The surgeons, therefore, have numerous operations to perform; and it seems, indeed, that Mr. Baker Brown, of London, pays special attention to this branch of surgery.

We will give here the case of the patient upon whom Dr. Bozeman had the kindness to practise before us his method; then we will examine summarily the principles upon which the French method is founded, compared to those which are embodied in the American.

Finally, we will give in detail the operation actually employed in America, and which the English surgeons have of late fully adopted.

At No. 7, ward St. Paul, is lying a woman named Dubocq, aged thirty-five; burnisher; entered Sept. 11th, 1858. She is the mother of nine children; each time delivered easily and without accident. In the month of July, of this year, she was delivered for the tenth time. The presentation was the breech, and the child came dead, after only twelve hours' labor. The lochia was scanty; the patient had no milk. She remained in bed eleven days, urinating as usual, and having no symptom calculated to lead her to suspect what had taken place during her delivery, and which came to be known afterwards.

The twelfth day she got up, and soon perceived that a quantity of water ran down between her legs. Here is what had happened: The vesico-vaginal wall, strongly compressed by the passage of the child, had become mortified, and the eschar which had resulted from this did not become detached until the twelfth day; then, the patient being up, the weight of the abdominal viscera pressing upon the bladder, caused a rupture of the last attachments which retained the gangrenous portion of the vagina, and allowed the passage of urine. Since then the catamenia have not returned.

The patient entered the hospital the 11th of September, seven weeks after her confinement. M. Verneuil, who replaced us, then proceeded to the examination, and stated the case as follows: The general health is good; the patient cannot retain her urine; she is constantly wet, and never feels any desire to urinate. She is not conscious of the passage of urine through the fistule. Nothing goes through the urethra. We found upon the vesico-vaginal wall, to the right of the anterior column of the vagina, a solution of continuity, about 0.035 millim. in diameter; the anterior lip of this perforation is situated at 0 m., 04 from the orifice of the vulva, and the posterior, is distant 0 m., 03 from the neck of the uterus*. The vaginal and

* Here I would remark that M. Verneuil was deceived as to the situation and extent of the fistulous opening. At my examination, I found it involving nearly the whole of the trigonus vesicalis and the *bas fund* of the bladder. It extended about as far on one side of the longitudinal axis of the vagina as the other, and measured in its transverse diameter something over two inches. It did not quite touch the root of the urethra below, nor the anterior lip of the cervix uteri above. Its anterior edge was deeply notched opposite the urethra, and could not be carried upwards any, because of its close attachment to the pubic bones. There was less protrusion than usual of the vesical mucous membrane, considering the size of the fistule. The fistule belonged to my fourth class, second variety. R.

vesical mucous membranes were entirely united around the whole circumference of the fistule.

September 21st, M. Verneuil operated upon the patient. The scarification was made with care, and the lips of the wound were simply united by suture.

The first days after the operation were marked by a desire to urinate; but it was soon perceived that reünion had totally failed. The patient, on the 10th of October, was in the same state as before the operation.

October 18th, I operated myself, according to the autoplatic procedure of Gerdy, which consists in lapping the vaginal mucous membrane over each lip of the fistule, in order to obtain two flaps, which are united by the *suture enchevillée*.

For three days urine passed by the catheter, but on the fourth day some clots of blood escaped from the vagina, and from this moment the desire to urinate disappeared.

November 2d, I examined the patient, and found that the flaps were gangrenous. The fistule presented the same dimensions as before.

The patient was reduced to this state, when, on the 16th of November, at our request, Dr. Bozeman had the kindness to operate upon her. I pass over the details of the operation here. It will suffice to state that ten silver sutures were required to unite the edges of the fistule, and that no lateral incisions were made.

November 18th.—The abdomen is painful and tympanitic. I fear a latent peritonitis. *Onguent napolitain belladonné et cataplasmes sur le ventre; potion avec camphre et opium, 10 centigrammes.* The urine passes by the catheter. This general and local state continues until the 22d, at which time the fever diminishes, the abdomen becomes soft, and the pain ceases. The urine still passes through the catheter. The patient supports opium badly, which causes vomiting. Opium discontinued. The same day she had an action of the bowels, but without any effort.

24th.—General condition very good; Dr. Bozeman removed the sutures. We could then see that union was complete in 19-20ths of the wound. This small part, not united, was at the right extremity of the wound. Dr. Bozeman recollected, then, that in this place he had seen the orifice of the ureter during the operation, but he did not care to dissect it out.

During the removal, which required nearly half an hour, the urine accumulated in the bladder, and the patient experienced a desire to pass it. Dr. Bozeman, being about to quit France now, recommended us to continue the use of the catheter seven days longer and not to permit the patient to get up under twelve days.

December 5th.—The catheter is removed, and the patient commences to leave her bed. She experiences a desire to urinate.

11th.—Examined her with the speculum. The wound seems to be completely united. There is no appearance of the small opening discovered at the time of removing the suture apparatus. Nevertheless, the patient, who urinates seven or eight times a day, and retains perfectly her urine two hours at least, says that she feels wet at times.

Cold injections, as on the preceding days, to be made into the vagina.

Patient continues to get up. She is gaining strength. She can retain her urine for two hours, and passes each time about a wine glass full.

14th.—Another examination with the speculum. The vagina is a little moist at the moment when the instrument is introduced. A sponge passed over the walls of the vagina, removes every trace of humidity. Notwithstanding the minutest care and the most serious attention, it is impossible to discover the slightest opening. We looked for some minutes to see if there did not escape a little fluid ; the vagina remained perfectly dry.

How, then, explain this fact, related by the patient, that sometimes, after having retained her urine for two hours, she feels herself wet ? There are but two hypotheses possible ; one is, that there exists an opening, a passage very narrow, so small that by the minutest examination it cannot be discovered. In this case we are obliged to inject a colored fluid into the bladder, that we may see it escape in the vagina, when there exists a perforation, but in the case of the patient of whom we are speaking, the vagina, once wiped, remains perfectly dry. We cannot, therefore, admit the existence of an opening. The second hypothesis, the only one probable in the case, is this : Women who have had a vesico-vaginal fistule, preserve, for a variable length of time after the operation, a very small bladder, capable of holding but a small quantity of urine. This fact of retraction of the walls of the bladder upon themselves, in case of per-

foration, is constant, and, therefore, explains itself very readily; add to this, then, that the capacity of the reservoir is still more or less diminished, in consequence of the loss of substance which it has undergone. But our patient can retain her urine for two hours; this is already an immense progress; but this proves to us, likewise, that the bladder is still very small. It is, therefore, very probable that there is in this woman a little incontinence of urine when the bladder is distended as much as possible; incontinence which, first, easily explains itself by the weakness of the neck of the bladder in women generally, and, secondly, by the circumstance that, in this particular case, Dr. Bozeman, in his operation, was obliged to implicate the neck of the bladder.

Lastly, 18th of December, I profit by the state of the weather, which gives us a clear light, to examine again the state of the parts. This last examination has not left any doubt upon my mind. There is no incontinence of urine; nothing passes by the urethra. The vagina, at the moment when the speculum is introduced, and whilst the patient remains quiet, is, and continues, perfectly dry; but when the patient makes an effort, we see a drop of urine escape in the vagina. There is, therefore, a small opening, but it is so contracted that we cannot discover it, however much care we take. We could make a colored injection into the bladder, in order to determine the seat of this opening, but the patient declares herself perfectly satisfied with her condition. She retains her urine for more than two hours, is very rarely wet, and there is scarcely a drop of urine that escapes.

She asks to leave the hospital. We recommend her to use, night and morning, astringent injections per vaginam, persuaded that this small fistulous opening will disappear completely, as it has already so diminished, after a month, that we cannot discover it to-day.

This is, therefore, a new success to record in favor of the American method—success, the more remarkable in this woman, as there was a loss of substance from $3\frac{1}{2}$ to 4 *centimètres*, and that the operation seemed to offer so little chance of success that Dr. Bozeman hesitated a long time before he would undertake it.

Here M. Robert examines in what consists the American method, prefacing his remarks with a notice of the procedure of M. Jobert, denominated *autoplastie par glissement*. The latter he regards as differing totally from the former, it being essentially an autoplasmic operation, whereas the other is not.

The American method he considers the result of a combination of procedures devised by many surgeons, and thus has allowed himself to be led into the error of supposing that the "clamp suture" of Dr. Sims and our button suture differed but very little, not seeming to know that the former had been entirely abandoned by its author.

He next states what position of the patient is preferred in this country, and the kind of speculum in use, after which he proceeds to describe the different stages of the operation, making two only :

1st. Scarification.

2d. Reunion.

These stages, with the various instruments employed in the operation, together with our suture apparatus, he describes very minutely. He then concludes with a supplementary note as to the further progress of our patient, and the conclusions arrived at finally. Here is what he says : At the moment of going out, the patient had an attack of inflammation in the lower part of the abdomen, probably the result of cold. She, therefore, remained some days longer in the hospital, to undergo antiphlogistic treatment, to which the disease rapidly yielded.

Finally, the 30th of December, the patient, on going out, was subjected to a last examination, with this result : With the catheter, the bladder being completely emptied of about 130 grammes of urine, we injected into it 300 grammes of milk. Notice, *en passant*, this considerable increase in the capacity of the bladder. The vagina then being dilated by means of a speculum, we explored this canal. The milk injected in the bladder neither escaped into the vagina nor by the urethra. After prolonging the examination, however, we saw now and then a drop of clear urine escape from the vesico-vaginal wall, at the point precisely where Dr. Bozeman had encountered the right ureter, and which he endeavored to avoid with the suture. This examination, therefore, demonstrates in a positive manner : 1st. That the vesico-vaginal perforation is obliterated, since the milk contained in the bladder does not escape into the vagina. 2d. That the urine which wets the vagina from time to time, is turned directly into the canal by the ureter, which was implicated by the suture, notwithstanding the efforts of the surgeon to prevent it. We would remark that the dribbling of the urine from the right ureter into the vagina, is limited to a few drops, because of the compression that the cicatrix exerts over the former, which is found to be considerably diminished in size. 3d. Lastly, and this is the main fact, that the opening

in the vesico-vaginal wall, being 4 *centimètres* in diameter, has been completely obliterated by the simple suture, without having recourse to incisions to permit locomotion of the tissues, and notwithstanding, too, the presence of the ureter between the edges of the fistule.

Remarks.—It may be thought by the reader that M. Robert himself has said enough in connection with this case, but as he has shown himself to be in error in some of his statements, I must be excused for appending these additional remarks, by way of explanation.

First, he says that vesico-vaginal fistule is rather rare in France, but, on the contrary, frequent in England and America. This circumstance he attributes to the position the patient in these two countries is made to take during labor, which is sitting upon a chair. In this, scarcely need I say, he is entirely mistaken. The back and side are the two positions generally recommended in this country, and they are, I think, as a general rule, preferred in England.

The above explanation of M. Robert as to the frequency of vesico-vaginal fistule among us, recalls to my mind another one, equally erroneous, though made with less charity, which I saw a year or two ago in the *Dublin Hospital Gazette*. The writer here says: "One fact must painfully strike us—the frequency of vesico-vaginal fistula in the States; surely it indicates a great amount of ignorance and rashness in American midwifery." Now, such an explanation as the latter certainly implies very great wisdom on the part of Irish practitioners, and must strike the reader with peculiar force. If I may be allowed to judge, this sage writer might have given another, and I am inclined to think a truer, explanation of the matter. It is this, namely; his inability to cure the disease in question, has placed him in a position not to be applied to by this lamentable class of sufferers, of which he can consequently know but little. It is well known that, as yet, comparatively little has been done in Ireland in this branch of surgery; but because this is so, it is no proof of the disease not being as common there as it is in America. I hold it to be true, that injuries incidental to parturition are equally common everywhere, and that whenever the surgeons of Ireland, France, or any other country arrive at that degree of success in treating these accidents, which has for several years characterized the practice of American and English surgeons, then, and not until then, will they be placed in a position that will enable them to speak knowingly as to the frequency of these diseases in other countries, as compared to their own.

Another point that I would now call attention to, is M. Robert's remarks relative to the small opening that remained after our operation. This, he says, was at the right extremity of the cicatrix. Here he is mistaken again; it was nearly half an inch from this point, corresponding, though, as he states, with the entrance of the right ureter into the bladder. It was in paring the posterior edge of the fistule that I cut off the end of the ureter. I was not positive, at the time, that it had been done. The cut end was not visible upon the pared surface, as is usually the case; nor could I discover any urine issuing from it. I had seen the urine escaping from this point before I commenced the operation, and it was owing to this circumstance that I was on the lookout for the ureter in my operation. I remarked to one of my assistants, Dr. Noyes, that I did not understand how it could escape being cut, and expressed my fears as to the consequences, should I not be able to find it. The difficulty, under such circumstances, must at once suggest itself to the mind. The cut ureter opening upon the denuded edge of the fistule, is in a situation to be brought directly against the opposite one, when the sutures are introduced, and approximation comes to be effected; hence the necessity of the urine coming from the corresponding kidney, forcing an outlet. The resistance being less in the direction of the vagina, the urine very naturally escapes that way, owing to the manner in which the edges of the fistule are pared, and the force with which they are brought together on the vesical side of the septum.

My usual plan of overcoming this obstacle, when I can find the cut end of the ureter, is to slit it up to the extent of a third of an inch on the vesical side of the septum, including, of course, the vesical mucous membrane with it, which can be done without difficulty. In this way an opening to the bladder is made, and the entrance of the urine consequently turned away from the approximated edges of the fistule. Could we have discovered the ureter in this case, and disposed of it as above stated, no difficulty would have been experienced. As our operation was completed, however, the result was inevitable; namely, a partial failure. Upon visiting our patient a few hours after she had been put to bed, I found only about half of her urine passing by the catheter; the remainder was going through the vagina. Recollecting, now, my suspicions as to the implication of the right ureter at the time of the operation, I came to the conclusion at once what had happened, and explained it to one of the

externes, Dr. Whitehead. Had there been any doubts upon my mind as to the correctness of the conclusion arrived at, they would have been removed by seeing the quality of the urine. All the urine that came through the catheter was bloody, as it generally is for several days after the operation, whereas that which escaped from the vagina was clear, showing that it came directly from the kidney.

The morning after the operation, I explained to M. Robert what had taken place, and told him there would be a partial failure of our operation, just at the point where the right ureter entered the bladder. This explanation he seemed to doubt, and expressed his belief that it was impossible for me to tell where and to what extent the operation would fail. Now, M. Robert, in his account of the case and operation does not mention this circumstance, nor does he say anything about half of the urine passing through the vagina immediately after our operation. This I think is a great oversight, as these facts form a very important part of the history of the case, and go to prove, in a very striking manner, with what certainty we can calculate upon a successful result from an operation.

Another fact I should mention is, that the quantity of urine passing through the vagina became less every day, which I could explain in no other way than that the obstacle to its entrance into the bladder gradually gave way, and it changed its course; in other words, that the escape of urine through the vagina after a few days, was the result of a communication direct from the bladder, and not the ureter, as in the first instance.

On the eighth day after the operation, I proceeded to remove our suture apparatus, in the presence of Prof. Nélaton, M. Verneuil, M. Robert, Dr. Hayward, of Boston, Dr. Noyes, of Rhode Island, Dr. Whitehead, of Virginia, Dr. Hoff, of Georgia, and a number of other French, American, and English medical gentlemen. Before doing so, however, I explained what had happened in the outset of our treatment of the case, and stated that I expected to find a partial failure of the operation at the point heretofore designated; namely, at the entrance of the right ureter into the bladder.

The apparatus then being removed, showed that union of the edges of the fistule was complete throughout, excepting at the point above mentioned, where we found a small opening communicating with the bladder, as indicated by the introduction of a probe.

My engagements now to leave Paris prevented me from seeing any

further progress of the case. It was left in charge of M. Robert, with directions how to manage it in another operation which I expected, of course, would require to be performed to complete the cure.

The report of the case after this, M. Robert has furnished us with, and we can only judge of the final result from this. It seems that he never attempted an operation for the closure of the small remaining fistule. At his last examination, he satisfied himself, as he states, that there was no communication between the bladder and vagina, which he did by injecting milk into the former until it was distended, none of which escaped into the vagina. By looking closely, and for some time, a drop of clear urine was seen to issue from the vesico-vaginal wall just opposite the end of the right ureter.

Now, M. Robert's test, as to their being an opening in the bladder, was certainly very satisfactory, and proved beyond doubt that none existed. But, admitting this to be true, and that the right ureter, as he says, did open directly into the vagina, we are forced to doubt his statement as to the drop of urine escaping into the vagina from the latter, which could only be seen after looking for some time. With this state of things, according to my observation, there would have been no difficulty in seeing the urine escape from the end of the ureter into the vagina. The quantity coming from one kidney, as was the case here, is considerable, and escapes in drops rather frequent. Again, if it should be said that the ureter entered both the bladder and vagina, and that the quantity of urine from the kidney was divided, why then we would have expected to see the milk injected into the bladder, enter the ureter on this side of the vesico-vaginal septum, and escape into the vagina by regurgitation. I take the position, therefore, that if no opening exists in the bladder, and the right ureter is turned into the vagina, not only the latter would be wet by the escape of urine here, as M. Robert says, but that the patient herself and clothes would be constantly wet; and furthermore, that no difficulty would be experienced in seeing the point whence the urine issued, as the flow direct from the kidney would be sufficiently constant to enable one to do so.

With these facts before me, therefore, I am forced to doubt the accuracy of M. Robert's statements as to the final result of the operation in this case. My convictions are that the ureter does not open into the vagina—that the opening seen here after the removal of our

suture apparatus closed up itself, and that the patient being made slightly wet at times was the result of incontinence ; in other words, the fistule was closed, but that the bladder, at the time of M. Robert's last examination, had not regained its retentive power. The latter condition I have known to continue for months, especially when the bladder had sustained great loss of substance, as was true of this case. In whatever light viewed, however, our operation, as regards closure of the fistulous opening, must be considered entirely successful.

CASE XXXII.—*Vesico-Vaginal Fistule, complicated with great contraction of the Vagina ; Fistulous Opening closed at the first Operation. Afterwards partial reproduction ; Patient finally discharged cured.*—Elizabeth, colored girl, servant of Dr. Applewhite of Ceralvo, Miss., was sent to me for treatment Dec. 24th, 1858. She is about 25 years old, tall and rather slender, and says that she has had three children at full term. Her first was born at the age of 14 ; her second, at 22 ; and her third about two years ago, at which time her bladder was injured. The first labor was short and easy, and the child did well. The second was a little more tedious, and the child came dead. The third was unusually protracted, lasting about six days, and the child was still-born ; no instruments were employed to aid delivery. She says that the catheter was used during labor, to relieve the bladder. Two days after delivery first noticed dribbling of urine, which has continued to the present moment. Menstruation for some time past has been regular, and to all appearances the general health is good.

Examination.—External parts of the genital organs very much excoriated by the urine. The introduction of the speculum showed the vagina to be considerably shortened and contracted. The fistule belonged to my fourth class, first variety. Only a very small portion of the urethra, however, appeared to be involved with the trigone of the bladder. The fistule was transversely oval, and its anterior edge admitted of very little motion. The constricted point was just above the fistule, and extended around the entire canal. The case, therefore, required some preparation before closure of the fistule could be undertaken. This consisted in making deep incisions in the constricted part, and then dilating the canal in the usual way with bags of oiled silk stuffed with bits of sponge. This course was continued until the incisions healed, and the constricted part appeared to be overcome, which was not until after several weeks had elapsed.

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Urethro-Vaginal, Vesico-Vaginal,

AND

RECTO-VAGINAL FISTULES:

GENERAL REMARKS;

REPORT OF CASES TREATED WITH THE BUTTON SUTURE
IN THIS COUNTRY, AND IN LONDON, EDINBURGH,
GLASGOW AND PARISIAN HOSPITALS.

BY

NATHAN BOZEMAN, M. D.,

OF NEW ORLEANS (LATE OF MONTGOMERY, ALA.).

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