

# BOZEMAN (N.)

ON KOLPOKLEISIS

*Obst-  
surg*

AND OTHER

ALLIED PROCEDURES

AS MEANS OF TREATING

## VESICO-VAGINAL FISTULE,

BEING

### AN ANSWER

TO THE

*Article of the Late Prof. Gustave Simon, of Heidelberg,*

ENTITLED

"A COMPARISON OF BOZEMAN'S OPERATION WITH THAT OF THE AUTHOR."

BY

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Consulting Surgeon to the St. Elizabeth's Hospital, N. Y.

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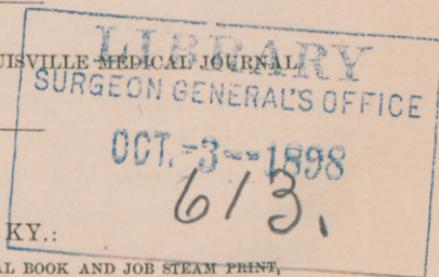
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Bozeman Nathan

On Kolporkleisis and other  
Applied Procedures as means of  
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answer to Late Prof. G. Simon of Heidelberg.

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## VESICO-VAGINAL FISTULE.

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*Introductory Remarks.*—It was only a few months ago that I read in the January number of the "Richmond and Louisville Medical Journal," for the first time, a translation from the German of the report by the late Prof. Gustave Simon upon the six cases of vesico-vaginal fistule treated by him and myself in the surgical clinic of the University of Heidelberg in the autumn of 1874. Scarcely need I say these cases were operated upon by us with the view of determining the relative merits of our respective methods. I was glad to find that the views of the able German master had thus been laid before the readers of so popular a journal in this country, and especially to see the force or comprehensiveness of these views maintained by the introduction of all of the *fac similes* of the author's wood cuts, which were not produced by a prominent British journal in a later London translation of the same article. These wood cuts are, I conceive, of the greatest importance, not only to illustrate the peculiarities presented in these cases, but to show the differences between our respective methods.

The criticisms in the article upon me and my operation are such as would naturally be expected from a misapprehension of facts, and from a master who knew what he was about, and wished to present the subject in the strongest possible light from his standpoint. Those contained in the introductory remarks of the translator "about certain things," as he terms it, are unwarranted, and from the spirit in which they were made will be passed over unnoticed. Now, under all these circumstances, I claim on the score of equal fairness and justice, and as an American, the right to lay before the readers of the "Richmond and Louisville Medical Journal" the other side of the question at issue between Professor Simon and myself, believing it will tend to a further advancement of science in this department of surgery at home and abroad, and to a corresponding amelioration of human suffering.

The first part of my reply will comprise a brief historical sketch of the labors of Professor Simon and myself up to the time that we met in Heidelberg, a tabular statement of the thirteen operations performed by us upon the six cases presented for treatment, and a correspondence between us about a year afterwards in relation to certain points of practice and to the results following some of our operations.

Now, to complete a reply to the translation as found published in the "Obstetrical Journal of Great Britain and Ireland," containing none of the wood cuts of Professor Simon, and to introduce those necessary to illustrate my own views, as I propose to do in the second part of my reply, would be a manifest injustice to him and his operation, which I wish to avoid. The importance of this point will readily appear to all, when it is recollected that the review and criticisms of Professor Simon extend to my operations in the General Hospital at Vienna as well as to those at Heidelberg; and that in defence of the positions I have assumed, it will be as necessary for me to refer to the former as well as to the latter. Besides this, Professor Simon, before commencing his review and criticisms, addressed a note to Dr. Beigel, of Vienna, in which he not only draws a comparison between his and my methods of operating, but between mine and that of Dr. Sims, which was made a pretext by Dr. B. through the "Wiener Medizinische Wochenschrift" to try to destroy the favorable impression made by my operations in Vienna, so ably reported by Dr. Ludwig Bandl, and to lug in side issues disparaging to my former labors at home and abroad, evidently intending by it to counteract the effects of the stunning blow already given by me to Professor Simon's theory of kolpokleisis, and thus to bring into favor in the Austrian capital the method of Dr. Sims, but little known and appreciated there.

So in order to continue my discussion of the subject in a connected manner, and to answer fairly the criticisms of Professor Simon, it will be far better for his claims, as well as for my own, to take as a guide the translation containing his wood cuts, as found in this Journal. Therefore the second part of my reply will comprise a letter addressed by me to my friend Dr. J. F. Chauvean soon after I left Heidelberg (published by him

in the "New York Medical Record"), and a translation from the German of Dr. Bandl's report with Beigel's criticisms. After this will follow an analytical and critical inquiry into the peculiarities, operations and results in all six of the cases jointly treated by Professor Simon and myself, as well as in the four individually treated by me in the service of Professor Von Braun at Vienna. Next I propose to examine some of the French modes of operating for vesico-vaginal fistule, with the view of showing how they have been influenced by German and American practice, and how little of real success surgeons there have been able to accomplish by the employment of the latter. In connection with this will also be presented the translation of a report by Dr. Paul Berger, of Paris, upon my operations in the service of Prof. Dolbeau at the Hospital Beaujon, with remarks and criticisms upon Dr. Sims' method, and upon his refusal a short time afterwards to meet me in a scientific contest, as Simon and Braun had found it agreeable to do in two most difficult cases, which each of us, individually, had been invited to examine and pronounce upon as to curability in the service of M. Péan at the Hospital St. Louis.

Now to indicate the scientific importance attached to eight of the eleven cases fairly submitted to me for treatment in the different hospitals at Heidelberg, Vienna and Paris, I will state here that they were regarded by the surgeons in charge as utterly beyond the resources of our art, except by such devices as kolpokleisis, *regarded by me under all circumstances as unnecessary and unjustifiable*. In the case at Heidelberg (the third of my series), a woman from Holland, Professor Simon proposed to me, as a test of our respective methods of exploration, that he would make the first examination and state to his class the result, and then immediately submit the case to me for a similar decision as to what course of treatment was called for under the circumstances. His opinion, expressed in the most positive manner, was that the fistule *could not be displayed, and that oblique kolpokleisis was called for*—such as he had performed in his first case of the kind at Rostock. My opinion, expressed in a manner no less positive, was that the fistule, *by preparatory treatment (gradual or siege approaches) from*

*twenty to thirty days, could not only be fairly displayed, but closed with conservation of the generative functions.* Scarcely need I say Professor S. upon the spot magnanimously turned the case over to me, instructing his assistants at the same time to give me all the coöperation needful to carry out my treatment. The other seven cases were more or less of the same character, and will hereafter appear more in detail. All were, however, resigned to me for treatment somewhat in the same manner. Two of the eight cases after completion of the gradual dilatation of the vagina were perfectly cured, each at a single operation; one at two operations; two so near it, each after one operation, that everybody admitted its possibility; one from three weeks' gradual dilatation was reduced to the greatest simplicity, but did not receive the necessary operation for closure of the fistule, as will hereafter be explained; one received only initiatory treatment, and was not again seen, but the result I afterwards learned was not satisfactory; one, the most hopeless of all, received initiatory treatment, but was abandoned for want of time and other reasons, which will hereafter be given.

From this then it will be seen that the great secret of success in these cases lay not so much in position, speculum and form of suture employed, as in the preparatory treatment (gradual or siege approaches); *a principle of practice first successfully applied by myself*, and the one above all others that has been in my reply to Professor Simon kept constantly in view as the distinguishing feature of our respective methods.

As to the great value of this principle of treatment there can be among enlightened physicians or surgeons but one opinion. Professor Simon himself admits that it is thoroughly correct, but says the same result can be accomplished by immediate incisions and dilatation; but this is simply begging the question, as his long experience and my own observation of his practice abundantly prove. Professor von Braun, in a letter addressed to me April 10, 1877, since my return to New York, speaks of it thus: "All cases that have been operated upon after your method have entirely recovered; not one has been sent away uncured. I shall endeavor to make known the results of all cases operated upon in my service, so that physicians may learn

its real worth. I am persuaded that it will find here, with each year, more and more adherents, and as to myself, I shall contribute all in my power to introduce it in Europe."\*

Dr. Bandl, May 27, 1877, writes me as follows: "Already in Vienna the gradual dilatation of the vagina as a preliminary step to reach the borders of fistules in difficult cases is becoming well known. Professors Billroth and Saltzer are now employing it. It will doubtless be gratifying to you to learn that Professor Saltzer invited me to operate in his service that he might better learn the method. This I did March 30th. The fistule, of considerable size and situated high up, was, after four weeks' dilatation, made quite accessible. I completed the operation in one and a half hours, using six sutures and a suitable plate (button). I removed the apparatus on the sixth day and found the cure complete. I think Professor Saltzer will order your instruments and operating chair. Besides this case, I have cured outside the General Hospital another having a large defect, and fifteen in the clinic of Professor von Braun, the most of them being difficult. In three of them no one expected a cure could be effected. In all I have seventeen cases, which you will soon have the opportunity of reading and judging."

Professor LeFort, under date of July 25, 1877, writes me from Paris thus: "Your patient left my service (Beaujon) a very short time after you had removed the sutures. She did not speak to me of any incontinence of urine, at least I have no recollection of her having done so. She figures in my reports as a complete cure. I thank you for your good services." Here we enter upon our subject:

#### PART FIRST.

*A, Historical Sketch—B, Tabular Statement of our Operations at Heidelberg—C, Our Correspondence.*—Soon after the appearance of the paper in the "Wiener Medizinische Wochenschrift," Nos. 27-32, 1876, by Professor Simon as above entitled, I began a reply to the same, and had advanced very

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\* The extracts from this and the following two letters I introduce here without asking the consent of their authors, feeling that the general scientific interest of their tenor fully warrants the liberty taken.

far with my work when the sad intelligence of the distinguished surgeon's death reached me at Paris. My first impulse was to finish my reply and publish it in accordance with the original plan, hoping that some one of the numerous followers of the German master would take up the discussion of the questions at issue between us, and answer the objections which I felt myself bound to make to his views of practice. But, after reflection upon all the circumstances of the case, I entirely abandoned the idea of a formal reply, and proposed to myself instead to review the whole field of French, German, English, and American operations. By this course I trusted to reach a solution of the important question, *What is the best and safest operation at the present moment for the cure of vesico-vaginal fistule, with preservation of the generative functions?*

I have been deeply engrossed with the subject from that time to the present, and hope at no distant day to lay the result of my labors before the Profession, believing that I shall thus contribute in a greater degree to the end proposed than I could do by pursuing any other course. But since I have carefully read the English translations of the article in question, and have found several criticisms therein which place me in a false light before the Profession, I deem it to be my duty to reply without delay.

Now, in order to do full justice to Professor Simon and his claims, and at the same time to place the differences between us as regards kolpokleisis and the best means of avoiding it in a clear light, I will here introduce a few extracts from publications made by us respectively in 1868, 1869 and 1870.

In the first place, however, it is proper to say that in two articles published by me ("New Orleans Medical and Surgical Journal," January, 1860, and "New York Medical Record," December 2, 1867), I contended for priority in the operation of *transverse obliteration of the vagina in the urethral portion, kolpokleisis*, as a means of relieving incontinence of urine, supposed to be otherwise incurable. Professor Simon having anticipated me in this operation nearly four years, and having seen my claim in the last-named journal, felt himself called upon to prove his rights to priority, and this he did to my entire

satisfaction in a letter addressed to me through the "Deutsche Klinik," numbers 45 and 46, 1868, and a translation of which he caused to be made and distributed among the Profession in America. Of the operation in question, and of his views at that date upon the treatment generally of vesico-vaginal fistule, he said:

"The reason why I have proved the validity of my claims of priority at such length is simply this, that, in my opinion, kolpokleisis is the most important plastic operation which in the last decennia has originated from one single man. The operation for vesico-vaginal fistula by uniting the borders of the defect is indeed, in its present perfection and precision, a much more important acquisition than kolpokleisis, and probably the greatest achievement of our century in plastic surgery; but it has not been carried to that perfection by a single man, but on the contrary, operators of all nations have contributed their share to it. The 'uranoplasty' of our ingenious countryman, von Langenbach, could alone be placed by the side of kolpokleisis, as far as the safety of the performance and its immediate success are concerned. It would rank higher still, on account of its more frequent occurrence, if its benefit for the voice in increasing its purity could be secured in all, or in the majority of cases. But as in many cases this result is not obtained at all, and in others only incompletely, kolpokleisis must be considered the more important operation, as in all cases it fully answers its purpose. This operation, which I invented at the time when the obliteration of the vulva, proposed by Vidal, proved inefficacious in re-establishing continence of urine, has already been performed more than fifty times with complete success. Through it many patients with incurable defects of the bladder have been freed of the most intolerable suffering; viz., the incontinence of urine. I have myself in eighteen cases succeeded in effecting perfect obliteration, and every German surgeon who practices the art of curing vesico-vaginal fistules has recorded one or more successful cases of that kind.

"Since the invention of kolpokleisis, however, I have not remained satisfied with that mode of operation, to which you still adhere. On the contrary, I have constantly labored to perfect

the method of operating; to multiply its chances of success in the different parts of the vagina, and to render its indications more precise. Whereas I had, in my first cases, operated only in the lower parts of the vagina, and had repeatedly met with small remaining fistules which could not be brought to heal, such occurrences are now extremely rare, and I close, as the case may be, in any height of the vagina, and immediately below the defect. Nay, in one case, where the fistule was high up in the fornix, I needed only one-half of the latter for the obliteration, thus preserving the vagina in its whole length (*see* my "Beiträge zur Plastischen Chirurgie," Prag., 1868, p. 216). Moreover, whereas I used to consider kolpopleisis indicated only where very large defects existed, I have now limited this indication a good deal, having cured at later periods very considerable defects by uniting the borders of the wound by sutures like these ( $\frown$ , T, A,  $\overline{\lambda}$ ), by resorting to incisions along the sides and parallel with the sutures, and even by transplanting a flap from the vesico-vaginal wall. The size of a defect has, for the reasons enumerated, during the last five or six years, not been in my eyes an indication for kolpopleisis. On the other hand, I have found, among the large number of difficult and complicated cases which have come under my treatment, several in which it was either impossible or too dangerous to unite the borders, so that here I resorted to kolpopleisis.

"So much for kolpopleisis. I avail myself of this opportunity to present to you, esteemed colleague, and to your countrymen, a statement of the growth and progress of the operation for vesico-vaginal fistules in Germany, as much on this subject may still be unknown to you. My statements will no doubt be for you—the most experienced operator on fistules in America—of the greatest interest, as you will thereby perceive that the operation in question was fully practiced in Germany before you and Sims came forth with it in England and France; that in this country it has been carried to a simplicity, perfection and certainty of success which it has not attained in any other country, and that especially your American method and its modifications have been surpassed in every respect. Without fear of contradiction, I believe myself justified in considering that, of

all surgeons, I have been most extensively occupied with this operation, practically and theoretically, and have most promoted its perfection. For this reason it will not seem extravagant to you if I speak in the following more particularly of my method of operating and the results achieved thereby. . . . My results *in toto* are consequently the following:

Of 118 fistules which existed in 105 patients—

" 104	"	"	"	"	"	92	"	were completely cured.
" 5	"	"	"	"	"	5	"	closed except small openings.
" 3	"	"	"	"	"	2	"	as incurable, dismissed.
" 6	"	"	"	"	"	6	"	died.

"Thus in comparing the results of 1859 by the old imperfect method with those attained after that year by means of the improved one, the proportion is considerably in favor of the latter. While previous to 1859, of 22 fistules, only 14 (equal 64 per cent.) were cured, and 2 patients (equal 9 per cent) died, after that period of 96 fistules which existed in 83 patients, 89 (equal 92 $\frac{2}{3}$  per cent.) fistules in 77 patients were cured, and only 4 patients (4 $\frac{1}{3}$  per cent.) died.

"With what safety the cures are effected by my simplified method, the following report of my latest operations may serve to inform you, besides my works of 1862 and 1868, in which the results are given in detail. During six months' residence at Heidelberg (from May to October, 1868), we have operated on, in the hospital, 14 fistules in 14 patients. I have performed 12, and my assistants, Messrs. Heine and Hotz, each 1. Three of the fistules were very small; they had remained after previous operations at Rostock; the other 11 were new cases, but 6 of them had been operated already once or several times by other surgeons. Several of them were of considerable size; in 5 cases 12 sutures were required in order to close them; in 1 even 15. *Moreover, different complications existed, which made it necessary three times to embrace the posterior lip of the os uteri in the suture; once to overlap an existing atresia of the urethra; once to remove one; twice to perform kolpokleisis; and once to make a transplantation of a flap from the vulva.\** Yet notwithstanding these troublesome circumstances all 14 patients

\* The italics are mine.

were cured by 17 operations. Of these, 11 required only 1 operation; 3 had to be operated on twice each; among them were 2 small fistules which had remained from previous operations.

"After such results, you will agree with me, esteemed colleague, that fine silk thread, which is much easier to apply than silver wire, is in no wise inferior to it, and that the catheter in permanence is an unnecessary and even detrimental burden to the patient. And you will also feel yourself in justice bound to acknowledge that the operation of vesico-vaginal fistula has reached, in Germany, a higher degree of simplicity, perfection, and certainty than in any other country."

As further proof of the value attached by Professor Simon about that date to kolpokleisis, I will quote the views entertained by him upon the extension of the principle, as found published in his justly popular work on Plastic Surgery ("*Beiträge zur Plastischen Chirurgie*," Prag., 1868, p. 216). Having found that transverse obliteration of the vagina in its lower third necessitated too great a sacrifice of the vaginal tract in cases where the fistule was small, but inaccessible on account of its height, he added two other forms of procedure, making in all three, and designated them topographically as follows:

"1. Transverse obliteration of the vagina in the urethral portion.

"2. Transverse obliteration of the vagina within the limits of the base of the bladder.

"3. Oblique obliteration of the vagina in one or the other of the vaginal arches, according to the right or left situation of the fistule."

Again, as a guide for the employment of these classified procedures, he laid down (op. cit., p. 229) the following eight indications, based principally on the pathological conditions of the vagina and cervix uteri:

"1. Great loss of substance, making it impossible to bring the two sides of the fistule together.

"2. Inaccessibility of the fistule from its high position, from the inversion of its edges, etc.

"3. Loss of the infra-vaginal cervix, and danger to the peritoneum.

"4. Hæmorrhage into the bladder, where considerable, after operations.

"5. Confinement by adhesions of the stump of the cervix uteri, inside the bladder.

"6. Atresia vaginæ above the fistule, with immobility of the posterior border of the latter.

"7. Obliteration of the urethra, with one fistule below and another above.

"8. Uretero-vaginal and uretero-uterine fistules."

The next year ("Deutsche Klinik," No. 15, 1869), in an article entitled "Effects of Urine and Saliva upon Tissues deprived of Epithelium," Professor Simon recorded some fifteen experiments made upon man, dogs, and rabbits, with the view, as stated, of controverting a popular error, with regard to the injurious influences of these secretions upon fresh wounds. Of the effects of urine he said :

"It has been an undisputed dogma until quite recently that urine by its chemical properties has a very injurious effect upon the unprotected tissues of animals; that it prevents union by first intention; that it destroys fresh cicatrices, and that when infiltrated in the tissues it leads in the end to their necrosis. This view has been held not only with regard to decomposed and alkaline, but with regard to undecomposed and still acid urine. The latter has been supposed either in itself to have an injurious effect, or to rapidly undergo an ammoniacal decomposition when in contact with unprotected tissues, and then to develop destructive properties. Repeated observations which I have had the opportunity of making at the bedside, and experiments on animals, by which I have sought to confirm and to complete these observations, have contradicted this dogma in its main points; and I have already, in several papers relating to operations on the generative and urinary organs of women, expressed my disbelief in it. In these papers, however, the experiments were only mentioned, and not described in detail, so that my views, as therein expressed, were without their complete demonstration. I am therefore induced by the importance of the subject to repair my omission here, and at the same time to explain the practical conclusions which may be drawn."

The first five of these experiments were made with fresh urine showing acid reaction. After injecting the fluid into the subcutaneous tissue of several rabbits and dogs, and seeing that it disappeared by absorption in a few hours without leaving any trace of its effects, it was then tried upon man, with a like negative result. Here the exposed surfaces resulting from incisions for hare-lip, and from other plastic operations about the face, were *washed* with the secretion, and then brought together with sutures in the ordinary way. In every case union by the first intention was said to take place with the same readiness as though water had been used. Even urine from a case of vesico-vaginal fistule loaded with pus and mucus, though still showing acid reaction, was used upon several dogs without changing the above results in the slightest particular.

The sixth and seventh experiments were made with ammoniacal urine, unfiltered and filtered. From their importance as relates to the operation of kolpokleisis, I will here copy *in extenso*:

“Experiment 6. From two to four drachms of alkaline urine, containing triple phosphates, mucus, and pus, were injected into several dogs and rabbits. *Result*: In all cases a large abscess was produced, containing dark and offensive pus, and the skin covering it soon sloughed, and left a large, slowly healing ulcer.

“Experiment 7. From two to four drachms of alkaline filtered urine were injected subcutaneously on several occasions into dogs. *Result*: In all these cases also abscesses were produced, but they ran their course with less destruction of the skin than in experiment 6; they made a smaller aperture in breaking, and healed more rapidly.”

The eighth, ninth, and tenth experiments were made upon the urine itself in open and closed vessels exposed to an average temperature with the view of determining under varied circumstances the time necessary to convert acid into alkaline urine. As these experiments are also important as illustrating the principle underlying the employment of kolpokleisis, I will copy these *in extenso*:

“Experiment 8. Half a drachm of good pus was mixed with half a pound of urine, and the fluid exposed daily for five or six hours to a temperature of 30°–50° C. The glass was not closed. *Result*: Alkaline reaction did not appear till the sixth day.

“Experiment 9. Two drachms of lean meat one day old were placed in one pound of fresh urine. The vessel was left open, and exposed daily for four to five hours to a temperature of 30°–50° C. *Result*: Alkaline reaction first appeared on the fifth day (after 106 hours).

“Experiment 10. The same experiment was performed with the modification that the vessel, having been completely filled, was closed, so as to exclude the air. *Result*: On the tenth day, when the vessel was opened, the urine was still acid, and the meat was not decomposed.”

The remaining five experiments were made with the view of explaining the mechanism and evil results of infiltration of urine resulting from rupture of the male urethra, and from other causes.

The deductions drawn by Professor Simon from these experiments are to be found in his concluding remarks, which, from their direct bearing upon the subject before us, I again quote *in extenso*:

“The doctrine established by the foregoing experiments of the harmless effects of acid urine upon unprotected tissues, wounds, and cicatrices, which was first suggested to me many years ago by my observations at the bedside, and which has since received manifold confirmation in the experience of surgeons and gynæcologists who operate on the sexual and urinary organs, has a bearing, the extensiveness of which can not be overrated, upon the mode of performing and upon the result of such operations. In former days, when operators used the utmost care to convey the urine away from the wound, but paid much less attention to the mode of executing the operation, the result of the operations was most unfavorable. Since, however, the opposite plan has been adopted of expending the utmost care upon the execution of the operation, and adopting few or

no precautions for the conveying away of the urine, most remarkable success has been attained. A good many years ago, Wutzer, in operations for vesico-vaginal fistula, used to puncture the bladder above the pubes in order to convey the urine away, and fastened the patients by straps in the prone position until the effects of pressure on knees and elbows rendered it impossible to maintain it longer. He was compelled, however, to repeat the operation ten or twenty times for the cure of the smallest fistulæ, and could only exceptionally record a complete cure. I, following an absolutely contrary principle, never even introduce a self-retaining catheter, and have often allowed the patients soon after the operation to leave their beds, and go for a walk with the sutures in place. Nevertheless, I have already cured more than a hundred fistulæ, most of them by a single operation, and, in common with all operators of the present day, I regard an incurable fistula as an extremely rare exception. But although the mode of executing this and other plastic operations upon, or in the neighborhood of the urinary organs, such as that for recto-vaginal fistula, or ruptured perineum, as well as urethrorraphy and urethro-plasty in the male sex, has been immensely improved; although it is scarcely now maintained that acid urine hinders union by first intention, yet the doctrine of its harmless effects upon wounds and cicatrices, and especially the fact that no alkaline decomposition is set up in it by the secretion of united wounds, have not yet been so fully recognized as might be desired in the interests of the patients concerned. For American, English, and French surgeons after the operation for vesico-vaginal fistula or similar lesions about urinary or genital organs still always employ the self-retaining catheter, or at any rate believe that they must not allow the urine to be passed at pleasure, but only to be drawn off by catheter. But this precaution, which causes so much inconvenience both to patient and surgeon, and which may set up mischief through irritation of the bladder and urethra, will, with better knowledge, vanish from the after-treatment and give place to the far simpler and more rational mode of management, which I have followed for years with the best results; namely, to provide for the cleansing of the external genital organs

and the vagina, and to allow the urine to be passed at pleasure (see my article 'On Kolpopleisis and the Operation for Vesico-Vaginal Fistula in Germany,' in this Journal, 1868. Numbers 45 and 46).

"In the rare cases in which the urine of a patient, on whom the operation of vesico-vaginal fistula is to be performed, has an alkaline reaction, and is therefore actually injurious, the operator will endeavor first to render the urine again normal, by treatment of the causes of its alkaline decomposition (extraction of a calculus, treatment of vesical catarrh, etc.). He will never undertake the operation while the urine is alkaline, unless, for other reasons, it is impossible to defer it. In such cases the utmost care must be used in the operation, that not a drop of urine may be able to penetrate between the margins of the wound. A self-retaining catheter is not to be introduced, because it would not be tolerated, and by increasing the irritation, might set up acute cystitis. In one case of vesico-vaginal fistula, in which I was obliged to carry out the operation while the urine was alkaline from the effect of obstinate vesical catarrh, I attained the cure by using the most minute care in the execution of the operation; in a second case the attempt failed twice, and I did not succeed in closing the fistula until I had cured the vesical catarrh.

"With regard to the treatment of infiltration of urine, this consists, according to the direction of surgical text-books, in deep incisions into the most prominent parts. It is intended by this means to let the infiltrated urine escape from the tissues, and to allow a free outflow to that which still forces its way through the lesion in the bladder or urethra. But relying on the experiments above described, I would, in a future case, somewhat modify this method of treatment. Instead of the numerous incisions, I would make an opening between the perineum and urethra; that is to say, I would perform perineal section, and for the first few days leave in place a catheter passed through the wound into the bladder. The urine already infiltrated I would leave to its fate. In this way the wound produced would be much less than with the treatment hitherto adopted. Any further infiltration would be most completely

prevented, the urine having a direct outlet; and the urine already infiltrated would not, as has been hitherto feared, develop any injurious properties; but, as the experiments show, would be reabsorbed without harm. Even when a slough has been already formed, I consider opening the urethra by perineal section to be the best mode of treatment."

From the foregoing extracts there can be no doubt of the fact that Professor Simon, in 1868, was thoroughly convinced of the value of kolpokleisis, performed for whatever cause; and equally evident is the error into which he had been led as to the extent of my appreciation of it. Had he known that I had employed it only a single time in about the same number of cases that he had then treated, he would not have spoken so disparagingly of my method of operating, and of the methods of other surgeons in comparison with his own. An advance from 64 per cent. of cures, as shown by his old method, to 92 $\frac{2}{3}$  per cent. under the new or simplified method, was indeed enough cause for congratulation, and fourteen successful operations out of seventeen—82 per cent.—undoubtedly marked a very high degree of surgical skill. But what was the character of these fourteen cures? The lines in the first extract, which I have italicised, should be carefully read, showing that five must be subtracted from the fourteen, being the number of cases in which the generative functions were destroyed, when nine—64 $\frac{1}{3}$  per cent.—of legitimate cures remain, to say nothing about the hiding away of the obliterated part of the urethra in one case, and unusual expedients in the other two.

These results of Professor Simon justify me in putting the question thus: If 35 $\frac{2}{3}$  per cent. of expedients which destroyed the generative functions were necessary in the treatment of ninety-six fistules in eighty-three patients from 1859 to 1868, when he had reached his highest degree of success, what did they amount to in the twenty-two fistules in twenty-two patients who were treated by his "old, imperfect method" from 1853 to 1859? I will return furthermore to the subject of alkaline urine and the deductions drawn by Professor Simon from his experiments.

Here I may be permitted to tabulate my experience during a

part only of the <sup>period of the</sup> "old, imperfect method" of Professor Simon, extending from May, 1855,\* to June, 1859:

\* This was the date (May, 1855) at which I, at Montgomery, Alabama, first associated my new form of suture with incisions and dilatation of vaginal atresias (gradual preparatory treatment), in complicated cases of vesico-vaginal fistule, and thus established the standard of my form of cure with preservation of the generative functions, to which I have ever since adhered without modification, except in the two cases here noted, both of which occurred before I had fairly perfected my system. Professor Simon, at Darmstadt, as appears from a comparison of his recorded experience with mine, in the same year and in the same month, associated his double interrupted silk suture (doppel naht) with his new principle of kolpokerleisis, as a means of compensating for loss of tissue, leaving vaginal atresias untreated, entirely sacrificing the generative functions, and so established the standard of his form of cure, to which he adhered with but little modification up to the time of his decease. Dr. Sims, who has unfairly claimed the first success in the treatment of vesico-vaginal fistule in America, was at this date using in New York his defective clamp or quilled suture, *which was totally inapplicable to any form of fistule associated with vaginal atresia*. Fourteen months later, however (June 24, 1856), and only six weeks after the description of my new system appeared in the "Louisville Review," Dr. Sims renounced his old form of suture, and employed for the first time the simple interrupted silver suture, which he soon afterwards associated with his improved duck-bill speculum, *with the folding of the edges of the fistule, and sometimes the cervix uteri into the bladder*, and with gradual preparatory treatment of vaginal atresias, *sacrificing to a limited extent the generative functions*, and thus established the standard of his form of cure, to which he and his followers have ever since adhered, with but little, if any, modification. I had previously (from June, 1853, to May, 1855) been a follower of Dr. Sims with his defective clamp suture, and had succeeded in curing only two simple cases of vesico-vaginal fistule out of six (33½ per cent.), which was very little, if any, less than his success with it, according to the results which he had recorded up to that date.

It was therefore only after Dr. Sims *had been driven* from the support of his *clamp suture contrivance*, as I expect to show more in detail after I shall have finished my reply to Professor Simon, that he caught up at the eleventh hour the *simple interrupted silver wire*, which he fastened on the *torsion principle* of Methauer and Gosset, in use already by them for twenty-five years, and which he united with the *principle of vaginal dilatation* then in use by me for more than three years, all too without the slightest acknowledgment. His procedure, thus made up, he heralded forth to the world as something entirely new, claiming that his discovery of silver wire (adroitly purloined from the published experiments of the late Dr. Henry S. Levert, of Mobile, Alabama, "Am. Jour. Med. Sciences," May, 1829) had done all this and even more, and that in the *interest of posterity* he had the right to proclaim the fact not only before the New York Academy of Medicine at one of its anniversary meetings, but from the house-tops (Silver Sutures in Surgery, 1863). 58

Upon fifty-two fistules in forty patients sixty-eight operations were performed.

Upon forty-four fistules in thirty-four patients fifty-three operations were performed. These were completely cured with entire preservation of the generative functions.

Upon one fistule in one patient two operations were performed, by including the posterior lip of the cervix uteri, with loss of the generative functions (May, 1856).

Upon one fistule in one patient one operation was performed, for kolpoplekisis, with restoration of continence of urine, but loss of the generative functions (March, 1859).

Upon four fistules in two patients eleven operations were performed. These were completely cured, with preservation of the generative functions, but relapsed, owing to the incompleteness of the preparatory treatment (incisions and dilatations).

Upon one fistule in one patient one operation was performed. Patient died on the sixth day, though the autopsy showed complete closure of the fistule.

Upon one fistule in one patient no operation was performed. Considered incurable, and discharged without operation.

The details of the above cases are to be found in the "Louisville Review," May, 1856, the "North America Medico-Chirurgical Review," July and November, 1857, and the "New Orleans Medical and Surgical Journal," January, March, and May, 1860.

I think I am warranted in saying that this series of cases was the largest, and embraced a greater proportion of legitimate cures than had ever been published before by any single surgeon. Forty-four fistules in thirty-four patients, cured in fifty-three operations, with preservation of the generative functions, give a result that scarcely admits of comparison with that exhibited by Professor Simon at the date of his "simplified method," nine years later, including even his cases in which the

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Such are the facts briefly stated upon which rest the American claims to superiority in the treatment of vesico-vaginal fistule, and these I present here for the reasons that it will better enable me hereafter to distinguish true from false teachings both at home and abroad, and to point out some of the errors still operating to retard scientific progress in this branch of gynecological surgery.

generative functions were impaired or destroyed, and points to some other explanation than that of the position of the patient, the speculum, or the silk or silver sutures. What is that explanation? The recognition of the curability of the atresias of the vagina, and the adoption of a successful mode of treating them, simply as a preparatory measure. This I contend to have done almost at the outset of my experience, and I associated therewith a form of suture which combined advantages in the utilization of inodular tissue which were possessed by no simple interrupted suture, whether of silver or of silk, which had been previously in use. A careful examination of the details of the forty cases which I have tabulated above will show that a very large proportion of them presented very great obstacles. These difficulties were first met and surmounted by means of the knife and the dilator, and afterwards the cases were treated, as regarded the fistules, on general principles.

Having now learned from Professor Simon's letter (1868) to what extent he and his followers in Germany had carried the operation of kolpoplexis, and having become convinced of the greater advantages which are secured by my dilating speculum and support for the knee-chest position in the treatment of vaginal atresias and of the fistules which complicate them, I was led to the conclusion that kolpoplexis, which I had regarded up to this time as deserving favor, might in future be greatly curtailed in the range of its employment. I discovered that out of *eight* indications laid down by Professor Simon for the application of kolpoplexis, in only a single instance, according to my experience, was the operation admissible; viz., loss of tissue and impossibility from coëxisting adhesion of bringing the two sides of the fistule together. Even under these circumstances I began to think that, by greater perseverance in the preparatory treatment, in which, as before remarked, I had made so decided improvements, kolpoplexis might be avoided. Becoming strengthened in this conviction, my investigations and observations finally presented the whole subject to my mind in a new aspect, bearing upon the moral, chemical and physical results of the operation. Upon these several points I hope at some time to speak more fully. It will suffice at present

to say that patients came under my notice presenting reactionary complications of the most dreadful character, whose fistules had been treated by such expedients as felling or basting their edges, or folding them in the bladder, sometimes at the expense of incarcerating the cervix uteri in the bladder, and not seldom of obstructing the urethra—these expedients all growing out of the necessity of securing broad refreshed surfaces in the operation and in increasing the chances of success as regarding the relief of incontinence of urine.

At this juncture, and in this train of investigation, I conceived it to be of the greatest practical interest to learn the condition of cases, after some years, in which the operation of kolpopleisis was known to have been completely successful. I accordingly addressed a note to Dr. R. P. Means, of Hickory Grove, Ala., who had had my first and only patient upon whom kolpopleisis had been performed (1859) under observation for several years, requesting him to make a thorough investigation of the case and report to me the result. Here is his answer:

“Jane Finley is living, and her general health is very good. She can retain her urine while walking about sometimes, but it occasionally dribbles. If when lying down she immediately answers the call to urinate, she can retain the urine long enough to get up and go out doors. She does not complain of any pain, but says that she used to retain her water much better soon after the operation on her than she can now.”

About the same time I wrote to Professor Wernher, of Giessen, who was the first in Germany to secure a complete result from kolpopleisis, as stated by Professor Simon in his writings, and from him I received the following reply, dated December 12, 1869, with regard to his case:

“My patient died last summer. At the autopsy, I found in the vagina, above the seat of closure, a stone as big as a pigeon’s egg.”

A few months after I had learned the unfortunate result, at the end of twelve years, of Professor Wernher’s case, and had ascertained, after the lapse of ten years, that time was becoming more and more envious of the success in my first and only case, there came under my care, by a strange coincidence, a case of

spontaneous kolpokleisis, which not only confirmed the two reports just cited, but thoroughly convinced me that the expedient, at least, was only temporary in its beneficial results, and that, from its liability to be followed in a large proportion of cases by sequences dangerous to life, it ought to be condemned.

In an article published in the "American Journal of Medical Sciences," of July, 1870, I reviewed the subject, and after sharply criticising the eight indications which Professor Simon had laid down as a guide to the operation, I reported in detail the case of spontaneous kolpokleisis above referred to, which I here copy as an argument in support of the correctness of the position I then took. I said:

"Under our treatment at this moment is a fair example of Nature's kolpokleidic operations, in which, after having covered up and hid away old lesions, she has left the parts in a state analogous to that of surgical obliteration. The results before us teach what are to be expected from the latter, and confirm the previsions of pathological chemistry.

"Mrs. —, of Mobile, Alabama, aged twenty-three, a perfectly well-formed woman, after a first labor of eighty-four hours, March 31, 1865, lost, by sloughing, part of the lower third of her vagina, which, on healing, left a small urethro-vesico-vaginal fistule, and a recto-vaginal fistule higher up, with loss of control over the passage of either urine or fæces. Under this persistent local irritation the vagina just below the urinary fistule continued, however, to contract, enfolding both fistules, until by degrees she had regained control over the excretions. Her general health improved, but eighteen months after the first injury, and in the fourth month of a second pregnancy, she miscarried. Cystitis soon after set in, with a profuse discharge of bloody mucus. Five or six days of such painful inflammation continued, recurring at intervals of three or four months. It seemed to be provoked by the exertion of standing or walking too long. Still menstruation remained normal, and general health fair, with increased retentive power. By the end of the third year her vagina seemed completely closed; she lay dry all night, and could walk about in the day for several hours at a time without dribbling. But now came a change for the worse. Upon over-exertion she be-

came conscious of a fullness, as though something in the lower part of the vagina was pressing to come away, with urging to micturate every few minutes. This trouble increased until it culminated in an attack of cystitis. The urine, now always turbid, deposited a thick tough slime, and smelled very strong after standing a little while. A year ago fatigue in nursing a friend brought on a severe attack, which continued a whole month. The sanguinolent or brown turbid and offensive character of the urine has continued from that time with variations in degree up to the present date, at which we find it largely mixed with pus. During the past year her health has suffered much; she has become excessively nervous, and her menstruation painful. A deep-seated pain is assigned to the left ovarian region, and soreness is complained of over the whole abdomen. Since last autumn the flow has lasted but two days, and the epochs been retarded eight or ten days. Excruciating lumbar pains coincide with the cystic exacerbations at intervals of only eight or ten days. She has repeatedly swooned from their severity, and remained for hours unconscious. This unrelenting march in the gravity of her condition produced a state of anguish which, without positive derangement of mind, still urged toward suicide, but in this contention of spirit wiser counsels happily prevailed, and she has sought from the resources of surgery a salvation to which Nature has proved inadequate, although she had effected complete kolkokleisis, *'that most important plastic operation which, in the last decennia, has originated from one single man!'*

*"Actual State, March 10th, 1870.*—The vagina admits only a No. 6 bougie. The urethra is closed half an inch from the meatus. The vulva is much excoriated, with scalding on passage of urine, which has been the case from the first. Attempts to dilate the vaginal stricture cause extreme pain.

*"Preliminary Operations.*—Our first indication being to restore the vagina, we proceeded, after etherization, assisted by Drs. T. C. Finnell and J. H. Hinton, of New York, to cut deep into the cicatricial band, from one-half to three-fourths inch thick along its sides. Then we incised the posterior wall, introduced our speculum, and exposed the vagina above, which

was deeply congested and dotted with little red spots over its anterior wall. A small urethro-vesico-vaginal fistule was brought into view, just within the point of vaginal occlusion, and admitted a No. 4 bougie. The vaginal surface for nearly an inch above this point was studded with granulations that bled at the slightest touch. The neck of the womb was much enlarged, and its mouth patulous. Pus escaped with the urine through a catheter in the bladder. We all three verified the purulent character of this discharge. The recto-vaginal fistule was reopened by our dilatation of the vagina. Spontaneous atresia of the vagina had here restored continence of urine by drawing the small fistule up into the cicatricial band. The vaginal muscles could then aid the sphincter vesicæ in controlling the flow of urine through the urethro-vesical and vaginal orifices almost in juxtaposition. The urine, however, flowing into the vagina, had attacked its mucous membrane and the cervix, as betrayed by their congested, hæmorrhagic, and patulous state. Endometritis and ovaritis had supervened upon the cystitis and vaginitis. The discharge of muco-pus tinged with blood is now about half a pint in twenty-four hours. The subjoined analysis by a highly competent person—Dr. William B. Lewis, of this city—was made on a specimen of the urine drawn at the last exacerbation of our patient's cystic trouble, which occurred a few days after the operation pre-cited:

“March 18th.—Odor pungent, aromatic. Color and appearance, reddish, densely turbid. Sediment, after standing, one-eighth bulk of specimen, rather close, but light, of a brownish-white color. Reaction alkaline. Specific gravity, 1025. Earthy phosphates completely precipitated from supernatant fluid, but chlorides abundant. Albumen, half of the whole volume. Microscopical, oil globules, minute crystals of triple phosphates, pus corpuscles, amorphous urates and epithelium from the bladder. No casts were found. If present, they would be discovered with great difficulty, as the strongly-marked chemical characters of the specimen cloak the organic sediments and render their microscopical characters indefinite.

“The objects discovered by the microscope are in great part such as are naturally observed in alkaline urines. The features

of this specimen indicate that the cystitis from which the patient suffers is largely due to retained urine and pus. The large proportion of the latter accounts for the albumen present.'

"We should state here, while the general character of the urine in this attack remained the same, as observed by the patient for months before this preliminary operation, there was marked amelioration in her sufferings. Only a few moments at one time was the pain so severe as to cause swooning. The paroxysm was much shorter than usual, lasting only about two days, but the flow of mucus and pus continued the same as formerly, though diminished in quantity.

"The patient's good constitution and the conservative reactions of her organism during the earlier stages of her traumatic malady, its continued and vigorous efforts for self-recovery, more frequent in ratio to the local irritation; in short, the whole picture before us confirming and elucidating the pathologic history forbids us to attribute the decline of health or sympathetic sufferings to other than hydraulic and chemical causes; viz., the stagnation of urine retained in contact with mucous surfaces unprepared to resist its irritating salts, and whose exudations of protective mucus have but increased the mischief by accelerating putrid fermentation. To open a free passage for the discharge of these morbid secretions is the first step dictated by experience towards removing their causes.

"We do not exhibit the foregoing as anything more than the particular application of a general principle. Lesions, apparently the same, occasion different degrees of suffering in different patients. European, and especially German, peasant-women, may be more robust, more phlegmatic, than our American women, but chemistry and mechanics are invariable. To their laws are due the fearful sufferings we have witnessed in case of spontaneous kolpopleisis, and we venture to suggest that if the luminaries of German surgery will descend from their Olympian heights, look up their kolpopleidic cases, and look into them again, they will see cause to change the note of triumphant gratulation with which Professor Simon announces his successful operations.

"In the annals of surgery, nay, even in those of psychology,

we have met with nothing more astounding than Professor S.'s assertion, by a gentleman of Professor Simon's rank in our profession, that, after effecting kolpopleisis, the urine becomes healthy and does not harm the uterus, when we consider the deep pocket formed in the vagina with no other outlet than the small fistule into the bladder. These fistules, moreover, are very often found at the highest point of the vaginal pocket, thus favoring the retention of urine, which at every menstruation will be mixed with the blood of this eliminative secretion, an admixture which can hardly fail to promote decomposition and its irritative sequences. Would Professor Simon attribute then to the vaginal mucous membrane the property of arresting fermentation, of preventing those well-known changes which urine undergoes when long confined in the bladder, forming earthy deposits, calculi, and acrid ammoniacal lixivia?

"What is vesico-vaginal fistule? A solution of continuity, maintained in the vesico-vaginal septum by the passage of urine, the contact of which is a chief obstacle to the process of healing.

"In what does the cure of a fistule consist? In the union of its edges without serious lesion to the functions of the bladder, vagina, or uterus. No result inferior to this is a true cure, however complete the continence of urine. This physiological standard should never be lost sight of in our choice of remedial methods. What is kolpopleisis? The conversion of the vagina into a urinal, with prevention of the sexual act and generative function, restricting the uterus to the part of an excreting organ. Per contra, it claims to obviate the incontinence of urine.

"Of Professor Simon's eight indications for kolpopleisis, we recognize as valid only the first one; viz., a loss of substance such as to prevent the coaptation and consequent union of the fistulous borders.

"No loss of substance can prevent a cure so long as the womb can be drawn down to fill the aperture. In cases where this seemed impossible at first, it has gradually yielded to our daily tractions with polypus forceps on the cervix and stretching of the surrounding tissues, until the two sides of the fistule would meet. This once effected we feel confident of cure by our button-suture. Since its invention we have never had recourse

to incisions, in order to relax tissues and take the strain off our sutures, as Jobert was so much in the habit of doing, and as Professor Simon, after condemning it, has been fain to practice likewise. Even when a force of several pounds has been needed to bring the sides together, our button-suture has always sufficed to maintain them in apposition until their complete union. Incisions we apply only to the preliminary treatment of cicatricial bands, or to points of atresia, which, after opening, we dilate with tents, not attempting to close the fistule until we have removed, as far as possible, such obstacles.

“All Professor Simon’s indications pre-cited, except the first, have been met and overcome in our practice, without having recourse to kolpokleisis. At ‘uretero-uterine’ fistules, indeed, we may place a point of interrogation, for their diagnosis does not appear to us well founded in the cases stated. Bérard describes such a case in full detail. He injected colored fluids into the bladder; he introduced a probe into the cervical canal, and another through the urethra, so that it should strike the first, if a fistulous communication existed. He measured separately the fluid escaping from the vagina, and what escaped from the urethra; he smelt what escaped from the os uteri. Now such means may aid in ascertaining the existence of a vesico-uterine fistule, but they can not determine whether the communication between the uterine cavity and the urinary apparatus occurs at a point beyond that of the normal contiguity of these organs. A fistule  $x + y$ , of track unknown, may exist; the pre-cited means of diagnosis may fail to prove it vesico-uterine; they can not, however, prove it uretero-uterine, and we have seen vesico-uterine fistules in the diagnosis of which they failed, because of the extreme smallness of the fistulous track and its valvular condition. We have been unable to pass a colored fluid through it from the bladder in quantity sufficient to be seen in the cervical canal; nor could we pass a probe, however delicate, in the same direction, yet the two streams of urine—one from the vagina, the other from the bladder—always flowed separately. Was this a proof that the urine of the vaginal stream came from the cavity of the womb? Post hoc, ergo, propter hoc, will not answer here, as the linen test has fre-

quently attested in our hands. By this test we have detected the precise situation of a passage between the bladder and the cervical canal, even when the fistule was too small to be seen by the strongest reflected light. In one case cured by us January, 1869, the point of communication with the cervical canal was near the internal os and the fistulous track above, bounded only by the utero-vesical fold of peritoneum; this membrane was punctured while operating, but no serious consequences ensued. Here, even when the cervical canal was fully dilated, a strong reflected light failed to reveal the fistulous orifice, although while the patient lay upon her back the urine flowed freely from the os externum. Now, on mopping dry the cervical canal, and laying a bit of old linen on its anterior wall, its saturation showed at once the orifice at that point, by closing which we cured the patient.\* No organ was injured, no function compromised by our operation."

With regard to the subsequent history of the case above cited, I have only to add that the improvement which was indicated after the preliminary operation was continuous. Under repeated incisions and gradually increased distention of the vagina, one sequence after another slowly disappeared, but it was not until the dilatation had been carried to a diameter exceeding six centimetres, which required several months to accomplish, that the bladder was found to be in a sufficiently healthy condition to justify its closure by suture. One operation with my button-suture proved sufficient for this, and several months later a like result by the same means followed the operation upon the recto-vaginal fistule. The latter at the time of the operation was almost large enough to admit three fingers into the rectum. This augmentation in size resulted from the inelasticity of the surrounding inodular tissue and the high degree of vaginal dilatation found to be necessary; but, notwithstanding this seemingly grave complication of the preparatory treatment, it proved of no consequence, as, by gliding healthy tissue from above, the closure of the fistule was easily effected at a single operation. At the end of eight months the patient was dis-

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\* For the linen test, see our more extended notice in the "Transactions of the New York State Medical Society," p. 154, 1869.

charged perfectly cured, with preservation of the functions of all the organs involved—a condition of health in which she has continued ever since, now nearly seven years. Only a few weeks ago I heard from her, and the report was most satisfactory.

The lessons of the above case are most instructive. In this instance, kolpopleisis, resulting from the blind operations of Nature, was scarcely less effective than if it had been produced by the knife of the most skillful surgeon. Yet how important it was to undo Nature's handiwork in order to save the life of the individual. Like causes produce like effects, and there is no reason to think that the results in this case would have been better had kolpopleisis been effected by the surgeon's knife, no matter how expertly and judiciously it might have been used.

It is scarcely necessary to say that, holding this opinion, I visited Heidelberg in the autumn of 1874, to learn from personal observations what I had so long wished to know; namely, the German operation for vesico-vaginal fistule, as performed by the master himself. I was most kindly received by Professor Simon, who invited me to take part in the treatment of a considerable number of cases which he was then expecting to enter the clinic of the University, thus showing himself to be the true physician. Our distinguished confrère, Mr. Spencer Wells, was present at the opening of the *conours*.

*Tabular Statement of our Operations at Heidelberg.*—Seven operations in the aggregate were performed upon six cases—four by Professor Simon and three by me (two jointly upon the same patient). Professor Simon has described all these cases and operations in his article, together with the five additional operations which he found necessary to complete the treatment after my departure from Heidelberg.

Our results may be tabulated thus:

Upon 7 fistules in 6 patients 13 operations were performed.

CASE I.\*—Upon 1 fistule in 1 patient 3 operations were performed by Professor Simon; completely cured with preservation

\* The numbering of the cases in the above table corresponds with the order in which they were reported in the Paper of Professor Simon. See the "Obstetrical Journal, vol. iv, p. 436 et seq. and Wiener Med. Wochenschrift.

of the generative functions, but only partial restoration of continence of urine, owing to loss of urethral substance from repeated operations.

CASE II.—Upon 1 fistule in 1 patient 2 operations were performed by Professor Simon; the first—six years previously—for completing a morbid kolpopleisis in the urethral portion of the vagina, with complete loss of the generative functions; the second for reclosure of the same obliterated point after it had been reöpened by the passage of a calculus. Death on the sixth day. Autopsy showed suppurative pyelitis of both kidneys and the blocking up of the left ureter by a calculus.

CASE III.—Upon 2 fistules in 1 patient 2 operations were performed by Professor Simon, after the removal of a previous kolpopleisis by another surgeon, with restoration of the normal outlet of the catamenia and of continence of urine, though a ring-formed contraction of the vaginal orifice still remained as a serious impediment to the generative functions.

CASE IV.—Upon 1 fistule in 1 patient 3 operations were performed by Professor Simon, after incisions and immediate distension of the vagina, with restoration of continence of urine, and maintenance of the normal outlet of the catamenia; but there afterwards remained obliteration of the vagina above the fistule to the size of a No. 10 bougie, and loss of generative functions.

CASE I.—Upon 1 fistule in 1 patient 1 operation was performed by myself, and was completely cured, with entire preservation of the generative functions.

CASE II.—Upon — fistule in — patient 1 operation was performed by myself, after seven-eighths closure of the original fistule by Professor S. (little Russian), with the result of almost complete closure; but the success was afterwards lost by reöpening of the fistule, due mainly to an abnormal relationship of the parts, brought about by the preceding operation, which result could only have been avoided by reproducing the original fistule and making the closure *de novo*.

CASE III.—Upon 1 fistule in 1 patient 1 operation was performed by myself (after the patient had been pronounced incurable by Professor Simon, and condemned to complete obliteration of the vagina—kolpopleisis), with complete preserva-

tion of the generative functions and closure of the fistule to a point, quite simple, and admitted by Professor S. himself to be easy of cure at another operation.

Of the four cases treated by Professor Simon and estimated by my standard of cure, one (25 per cent.) came completely up to it, and two partially, with a death rate of 25 per cent.

Of the two cases treated by me individually, one came completely up to the mark, and the other so near it that no one for a moment questioned the practicability of its completion at another little operation—100 per cent.

*Our Correspondence.*—I shall here introduce the correspondence which passed between Professor Simon and myself about a year after the specified operations were begun, in order to show the views which we both entertained at that date with respect to the causes of failure in the so-called "little Russian" (Case II) upon which we operated jointly, and to indicate the value attached by each of us to the points distinguishing our respective methods of operation. This course seems to be particularly called for, since Professor Simon has referred in his paper to several of these points relating to my particular views, without connecting them with the circumstances under which they were at that time discussed. Therefore, in justice to myself and likewise to my distinguished opponent, I submit, as a part of my reply, the letters which we interchanged, believing that no sort of objection can be raised to this procedure, because of the purely scientific interest of the correspondence.

[TRANSLATION.]

"Honored Colleague,—Up to this time we have vainly hoped for your visit. We have still in the hospital the patient (little Russian) upon whom you performed the operation with unsuccessful result. I would be very glad if you would again operate upon this case, as I believe the cure will now be very difficult, since you have cut out so much substance.

"We have also several more fistules, which lie in the anterior part of the urethra, for you to operate upon. The rest I will communicate to you verbally.

"Yours respectfully,

"PROFESSOR SIMON.

"HEIDELBERG, September 25th, 1875."

“My dear Professor Simon,—With regard to the case to which you refer (little Russian), it is to me most interesting, and I should be delighted to complete the cure, as I feel very confident I could at another operation, were it possible for me to return to Heidelberg.

“The failure of my first operation resulted, I am satisfied, from an improper understanding on my part of the relationship of the end of the urethra to the anterior lip of the uterus. This little point constitutes, I conceive, a most important difference between your operation and mine, and when one follows another, as in the order of this case, without proper consideration, a similar failure is liable to take place in a majority of cases. This mainly arises from the difference existing between us in the position of the patient. Your position (*Steiss-Rück-enlage*) requires that the uterus shall be pulled down to the mouth of the vagina, thus placing the anterior surface of the cervix uteri under and opposite the urethral surface of the vagina. In this relationship the two opposing surfaces are pared off, and with your silk sutures lapped one upon the other. In this relationship they usually unite, I have no doubt, with considerable certainty, unless the traction be very great, and in that event a partial failure is likely to follow from the cutting out of the central sutures, as happened after your operation in the case. In either event, however, there must result from the retraction of the uterus a curvature of the urethra at the seat of union, with the concavity presenting to the pubic arch. In my position (*the knee-chest*), the parts, on the contrary, are operated upon *in situ*, without being changed in their normal relationship. The result is that the edges of the fistule, instead of the surfaces named, are pared perpendicularly and coäptated without subsequent distortion of the urethra. In the event of failure at any point in the line of union, the little remaining fistulous track extends directly through between the original borders, and not between flat opposing surfaces as happened after your operation.

“In my operation in the case in question, it was from not knowing the extent to which the urethra had been overlapped by the cervix that I was unconsciously led to remove so much

of the urethra in the paring process, and from which you now apprehend incontinence of urine when complete closure is effected. Had I understood the relationship of the parts involved at the time I operated as well as I do now, as I believe, *I should have divided your cicatrix on either side of the fistule to the extent, at least, of restoring the opposing edges of the fistule to a smooth plane, just as I am in the habit of doing in cases where the cervix uteri is fixed in the bladder.* Even in the third operation now called for I should proceed in this manner, and should expect to get a good result, both as to closure of fistule and retention of urine.

"Now, Doctor, these are my views of the case, frankly stated. If yours should differ, may I ask you to be equally frank in stating them. The point I conceive to be one of great practical importance, and well deserves serious consideration. My great regret is, that I am unable to come to Heidelberg and talk with you on the subject. I still hope, however, to see you again before I return to America next year.

"Yours very truly,

"NATHAN BOZEMAN.

"PARIS, September 30, 1875."

[TRANSLATION.]

"Highly respected Colleague,—I write to you once more to invite you to come to Heidelberg in the course of eight or ten days. It is only necessary for you to spend from eight to fourteen days, perhaps even a shorter time, to carry out everything which will enable us to complete our judgment upon your method of operating. I will mention the matters which I would most gladly have settled, and at the same time will refer to you other points which may be interesting to yourself.

"1. I would like you to carry out the operation in the case of the little Russian, which you have yourself proposed. I had consulted with my assistants concerning the same method, but I fear that continence will not be obtained in this manner, even if a perfect cure take place. Before your operation upon the fistule, only the size of a pea, the urethra was  $2\frac{1}{4}$  centimetres long, and, after the same, only  $1\frac{1}{2}$  to  $1\frac{1}{4}$  centimetre. Should

the urethra be again treated in the same manner—viz., be cut out with so great a loss of substance—there would remain only one-quarter to one-half a centimetre. Therefore, the cure of the defect would, by your method of operation *at this point*, be very doubtful, because the edge of the urethra is very thin, and the posterior edge, lying within the uterus, would be bruised to some degree by excising with the scissors. I would have more confidence in the plan if the entire operation had been carried out with the knife alone, and if the urethral part of the defect had been saved as much as possible. As, however, it happens that you count with great confidence upon the cure, even if you excise with the scissors, I beg you, on that account, to carry out the operation yourself.

“2. I have again five patients here with fistules. You can now operate upon fistules *which lie against and in the urethra*, while I will operate in those cases which *lie deeper in the vagina*.

“3. I have further to inform you that the patient upon whom you last operated, and in which case, at the time she left Heidelberg, a fistule remained through which the point of the finger could enter the bladder, will only return here next spring. At present she believes she could not endure so trying an operation.

“4. Finally, I desire to convince you also of the ulterior results in the cases of the two women upon whom I operated for urethro-vaginal fistule. You doubtless remember the case of the woman (Feige) upon whom another surgeon had performed transverse obliteration of the vagina, and which I again separated. In this case there was an oblique-lying urethro-vaginal fistule, and after the widening operation of vagina by yourself, there was a second small fistule, the size of the button of a probe, in the neighborhood of the mouth of the womb. The first fistule which I operated upon in your presence, and in which a small opening remained, turned out precisely as I had said in advance, and as I have already informed you, on the occasion of your passing through Heidelberg; viz., healed of itself without any further operation and without any cauterization, after the third week, by cicatricial contraction. The second little fistule, which lay at the mouth of the womb, I operated upon later, and healed.

“In the second urethro-vaginal fistule (Weick), in which the widening by incisions with the subsequent treatment by tampons, was alike without result, I brought about the closing of the opening, as you will remember, by means of six sutures. But immediately after the operation the urine flowed off. Upon examination, after the cicatrization, the fistule was found to be healed along the entire line of union. Only a very small slit of the outermost left angle, which lay outside of the suture, still remained open. This little slit was obviously not closed by the suture, and, on this account, the flow of urine immediately after the operation can be explained—this little slit was afterwards united and healed by means of two fine sutures. The patient is now very well, and she menstruates regularly through the vagina, which is certainly very much narrowed. She often comes here, and we have recently examined her condition.

“In the course of the summer we had many cases of fistules, and, on that account, I am most sorry that you did not visit us. I have cured six fistules, among them two lying very deep in the vagina, both being cured by the first operation. As yet I have made no use of your method.

“With the wish that you will at once write me whether you can come at any specified time, and in the hope of soon greeting you personally, I subscribe myself,

“Your obedient colleague,

“SIMON.

“HEIDELBERG, October 13th, 1875.”

“My dear Professor Simon,—Your favor of the 13th instant was duly received.

“Your kind invitation to me to visit Heidelberg again for the purpose of operating with you in the hospital for vesico-vaginal fistule I fully appreciate, and I assure you I would come most willingly were it not that I am confined here with my children. I should like to take more time with you than it is possible for me to afford at present.

“There are two or three points, independent of the operation required for the little Russian patient, that are of the greatest practical importance to gynæcological surgeons, that I should

like to discuss with you by the practical mode of dealing with the subject that we have already so satisfactorily inaugurated. I refer to cicatricial contractions of the vagina and to partial and complete obliteration of the same for the relief of incontinence of urine. I will, therefore, put the questions in the form of propositions and ask your answers to the same, believing that they will represent more exactly the state of the science in Europe at the present time than any information which might be obtained from any other surgeon known to me in connection with the subject.

“1. Is the existence of a cicatricial contraction or narrowing of the vagina an insurmountable obstacle to the closure of a fistule situated above it, and to the preservation of the functions of the organs involved? And, if so, why?”

“2. Is partial or complete obliteration of the vagina, with incomplete or perfect perversion of the functions of the organ, justifiable for the relief of incontinence of urine? And, if so, what are the principal conditions demanding one or the other of these procedures?”

“Of the first class of cases there is a pretty fair illustration to be found in the case of the young woman, Weick, who, you say, is cured of her incontinence of urine, and now menstruates regularly through the ‘small remaining vagina.’ The only objection that could be possibly urged against the result in this case is the existing vaginal atresia. In the General Hospital at Vienna a somewhat similar case, in the service of Professor Joseph Spaeth, was brought to my notice by his first assistant, Dr. Massara, during my visit there last spring. But here the atresia, which was almost complete, was situated higher up the vagina than in your case, and the fistule of small dimensions presented itself just above in the *bas fond* of the bladder. This atresia of the vagina was the result, as I was told, of typhus fever, and was found to be of a very resisting character. The fistule was produced accidentally in an unsuccessful attempt to overcome the atresia of the vagina, as I was informed by Professor Karl von Braun, who had had the case under observation from time to time for four or five years. Another case in the same hospital, a Jewess from Hungary, in the service of Pro-

fessor Braun, was presented to me for an examination and an opinion. The accompanying sketch will serve to give you an exact idea of the situation and size of the urethro-vesico-vaginal fistule, as well as of the recto-vaginal fistule, twelve centimetres from the anus. Here the cicatricial narrowing of the vagina, to the extent of about one-half of its calibre, existed just above the neck of the bladder, across the middle of the vesical fistule. Through the fistule the fundus of the bladder protruded, presenting itself at the vulva in the form of a tumor as large as a medium-sized orange. It was only possible to pull down the uterus by the aid of hooks, to the extent of placing the edges of the fistule not nearer than two centimetres from each other.

“Now, as to the practicability of overcoming the atresia in the case of Weick, and giving her a useful vagina, before your operation for closure of the fistule, I think you told me that you did not believe it possible. I said that I thought it was feasible, and, at your request, made the first incisions and instituted the process of dilatation. The result, as you know, proved unsatisfactory, and you proceeded to perform your operation for the incontinence of urine, which you inform me was successful after the second sitting. In justice to myself, however, and to the procedure adopted in this case to overcome the obstacle in question, I should say that my efforts were not a fair test of what might be accomplished under such circumstances. Having lost many of my dilators before going to Heidelberg, I had to resort to expedients which were not commensurate with the ends to be accomplished. Since that time I have supplied myself with a good and suitable assortment of dilators, such as I am in the habit of using, and I am now prepared to deal with difficulties of the character in question in a more effective way. I am sure you would be interested in any efforts to give this young woman a useful vagina, and I doubt not a great deal toward it can yet be done by the employment of the means indicated; and, if I had five or six weeks' time to spare, I should like to undertake the operation in your presence. You will pardon me for saying that I believe this treatment to be of the greatest importance, and that I believe there is much to be learned by us all before we can hope to reach the highest limit

of success in our operations either for incontinence of the urine or the fæces.

“In the second case cited, that of Dr. Massara, may I ask you what you would have advised under the circumstances? Am I right in supposing that the condition described called for obliteration of the vagina below the seat of stricture?

“The third case, that of Professor Braun, presented the unusual complication, as was stated, of recto-vaginal fistule, twelve centimetres from the anus, almost large enough to admit the point of the index finger. With the impossibility here of drawing the two sides of the vesical fistule together, and with the constant presence of fæces and urine in the vagina, may I again ask what you would have done? Would it have been possible, under the circumstances, for you to close such a fæcal fistule by your procedure? and, if not, would you consider obliteration of the vagina in the urethral portion justifiable?

“The second class of cases, comprising those which are comparatively free from cicatrized narrowing, and demanding a complete obliteration of the vagina, is known to be large, and the range of the operation itself is also known to vary with the experience of the operator. It is proper to state that two important subdivisions of this class of cases have been made and fully described by you in several of your published articles under the respective designations of transverse and oblique obliteration of the vaginal-kolpopleisis. To these I may add a third and a fourth, under the names of *felling and folding the edges of the fistule, with shortening of the anterior wall of the vagina.*

“Now these expedients are all well known to surgeons, and are at present largely employed, even in cases where the uterus is *movable* and the *vaginal walls* are in a comparatively healthy condition—the adoption of this mode or that, varying, as I have just stated, with the experience of the operator. You remarked to me during my visit at Heidelberg that you now did not have occasion to resort so often to obliteration as formerly, because your greater experience enabled you to overcome obstacles to the closure of the fistule itself, which previously had been thought insurmountable. So it is with all young and inexperi-

enced operators now; and even in this advanced state of the science the result is, that we find many of them adopting some one of the expedients named, under circumstances which you and I would regard as unjustifiable. As to the exact extent to which you consider oblique or transverse obliteration of the vagina necessary at the present day, I confess myself ignorant; but, as you have given the matter so much attention, I am sure there is no one better prepared to define it. Therefore, in the existing advanced state of your experience and knowledge, will you have the kindness to give me your views upon the subject?

"The case of the woman from Holland, in your service, upon whom I operated last December, presented a funnel-shaped vesico-vaginal fistule of no great size, it is true, but which was situated entirely to the right of the median line, with both edges deeply inverted, and the lower one firmly adhering to the posterior surface of the corresponding pubic bone. After your examination you said that you had only seen one similar instance, and that occurred at Rostock, when you first applied the principle of oblique obliteration, and you remarked further that the same procedure was called for in this case. I may state that I operated successfully upon a similar case in the hospital at Vienna, in the service of Professor Karl Braun, in which it was previously thought that oblique obliteration, in accordance with your method, was necessary.

"I suppose that, in the case of the little Russian patient, if the urethra is thought to be too short to justify an operation upon the fistule itself, you would advise transverse obliteration. Again, in uretero-vaginal fistule (Harnleiter-Scheidenfistel), I believe you still practice perforation of the vesico-vaginal septum and then oblique obliteration. Besides this, I infer that there are quite a number of deep, and even small fistules (im Gewölbe) associated with immobility of the uterus which call for oblique obliteration.

"The circumstances justifying transverse obliteration I think I understand very well.

"Of the other two expedients referred to; viz., felling and folding the edges of the fistule, I also understand the extent of their applicability. These two methods are very largely prac-

ticed in America by Dr. Sims and his followers. They necessitate, as you know, the turning of one or both edges of the fistule into the bladder, with more or less shortening of the anterior wall of the vagina.

"Therefore you will understand that my great object in asking you the foregoing questions is to ascertain, as nearly as possible, the conditions of the vagina and the peculiarities of the fistules which call for transverse and oblique obliteration. These procedures having been given to the profession by you, now about twenty years since, your present views as to their applicability and usefulness can not be otherwise than of the highest interest to me, a co-laborer with you in the same branch of practice.

"Hoping to hear from you at your convenience, I remain,  
 dear Doctor,

"Yours very truly,

"NATHAN BOZEMAN.

' "PARIS, October 19th, 1875."

Now from the tabular statements of the six cases jointly operated upon by Professor Simon and myself, and the correspondence given, I am warranted, I think, in making the following deductions:

1. That Professor Simon charges me with destruction of one to one and a fourth centimetres of the urethra by my method of refreshing or paring the edges of the fistule with scissors in the person of the little Russian (his Case I and my Case II); and that he believed it was not possible after the bruising and loss of tissue by such means for me to complete a cure.

2. That Professor Simon attached very little, if any, importance to *my plan of gradual preparatory treatment* attempted to be carried out by me in the persons of Feige and Weick (his Cases III and IV) previous to the commencement of *his plan of immediate preparatory treatment*, and that he considered my final operation upon the Holland patient (my Case III) of no particular consequence, since she had returned to her home with a fistule remaining large enough to admit the point of the finger, and did not think she could again "endure so trying an operation."

3. That Professor Simon regarded the results secured in his two cases named, on the plan of immediate preparatory treatment, with partial loss of the procreative functions, as entirely satisfactory to all parties concerned, and beyond the scope of surgical, legal, or moral criticisms, and that he believed they were just as conclusive in a practical and scientific point of view as those achieved by me in my Cases (I and III) with preservation of the procreative functions.

4. That Professor Simon considered as paramount to all other questions at issue between him and myself the one of whether his or my method of operating was better suited, on the one hand, to fistules involving the urethra, or, on the other, to fistules implicating the cervix uteri, and that he believed to settle this disputed point only eight to fourteen days longer trial of the two methods would be necessary.

5. That I believed the whole difficulty in my operation upon the little Russian arose from the unnatural and forced relationship between the anterior lip of the cervix uteri and the urethra, caused by the lapping of the former upon the latter in the previous operation by Professor Simon in the lithotomy position (Steiss-Rückenlage); and that the loss of tissue in the urethra, imputed to my use of scissors by Professor Simon, resulted from the cutting out of his central sutures lodged within its calibre.

6. That I believed my operation would have been entirely successful had I in the outset recognized the above abnormal relationship of the parts, and had, instead of attempting to close the remaining fistule as presented, proceeded at once to reëstablish the original opening in the bladder, and then to close it by direct coäptation of its edges, as I had previously been in the habit of doing under like circumstances in the knee-chest position.

7. That I did not regard Professor Simon's reputed success in the case of Weick (notwithstanding her relief from incontinence of urine) as a cure at all; and that, judged by my standard of utility, the case was still almost as much an object of surgical interest as before the commencement of treatment.

8. That I considered Professor Simon's exposure and direct closure of the two fistules in the case of Feige an immense im-

provement upon the previous operation by "another surgeon," although far from what it should have been, since the case was left with a recontracted condition of the vagina below the seat of the fistules, and with the liability to further injury in the event of another *accouchement*.

9. That I regarded Prof. Simon's fatal result (Case II) as most damaging to his theory of kolpopleisis, since the disease of the kidneys, the remote cause of death, stood in the relationship of effect to his first operation, and that I believed his second operation in the case only hastened the end which would otherwise have followed in a short time as a legitimate sequence.

10. That I considered my success in the case from Holland as settled by the plan of treatment already partially carried out, and that to complete the whole only a little more time and a simple operation were needed.

11. That I attached the greatest importance to morbid contractions or distortions of the vagina, as complications of fistules, and none whatever to the situation or size of fistules; and that I believe the removal of the former by the principle of gradual preparatory treatment was the best and only rational mode of accomplishing the cure of the latter.

12. That it was my object in the correspondence with Professor Simon to elicit from him the precise circumstances under which he then considered partial or complete obliteration of the vagina necessary as a means of securing continence of urine, and thus to learn the exact range of applicability or real usefulness of his mode of operating.

#### PART SECOND.

A. *Extract from my Letter to Dr. Chauveau.*—This was a private letter addressed to Dr. J. F. Chauveau, of New York, who, believing it would be of general interest to the medical profession, had it published in the "New York Medical Record," July 24, 1875, and a French translation of the same in the "Annales de Gynécologie," Paris, September, 1875. It was written early in April, just after my last interview with Professor Simon at Heidelberg with regard to our operations and their results, but from some unaccountable delay did not appear

in the sheet mentioned until the date given. Neither did I know it had been published nor see it until just about the time (October) the correspondence ensued between Professor Simon and myself.

Now whether Professor Simon, previous to our correspondence, had seen this letter in the "Record" and taken exceptions to it, there is no evidence before me to show, but certain it is he did see it very soon afterwards, and made it the subject of severe criticisms, as shown by his published report, nearly a year later, of our joint operations. Suffice it for the present to say, that all I then wrote concerning our different cases and operations was fully warranted, as far as related to their peculiarities and unfinished state. The seeming discrepancies between my statements and his, as shown in his report of the same, are easily reconciled, and will be fully explained when I come to answer his criticisms and explain why he omitted to include his fatal case (Case II) among the others in his estimate of the comparative value of our respective methods. I mention these circumstances here in connection with this letter to Dr. Chauveau as corroborative evidence of my fair dealing from the beginning towards Professor Simon and his mode of operating. Further, the statements contained in this letter itself will be found, I think, almost if not entirely in harmony with those embodied in my two letters addressed to Professor Simon from Paris. They were presented by Dr. Chauveau under the caption, "Operations for Vesico-Vaginal Fistule," as follows:

"In my last letter I told you also I would give you soon the result of my operations in Heidelberg. I was there with Professor Simon about six weeks. He received me very kindly, and seemed glad of the opportunity to make a practical test of our respective operations, with the view of determining the range of their applicability. He performed from first to last four operations by his method, with the following results: Three partial successes and one death.

"The first case presented a good-sized fistula, which occupied the base of the bladder. Here the uterus was movable and could be easily drawn down for the operation, which is essential to the success of Professor Simon's method in fistulæ situated high up. About seven-eighths of the fistula was closed.

"A second case was that of a woman upon whom he had performed kolpopleisis seven years before. The result of the first operation was cystitis and the formation of a stone in the vagina above the seat of closure. This stone finally cut through the cicatrix, thus re-opening the vagina. The patient's condition having become unendurable, she applied to Professor Simon the second time. The operation he performed had for its object the reclosure of the vagina, which I witnessed. It was kolpopleisis the second time. On the tenth day the patient died. Autopsy: Fistula or rather the vagina not closed; the denuded edges throughout having separated. Both kidneys extensively diseased and a calculus in the right ureter near the bladder; old adhesions around the uterus. Contraction of the bladder with cystitis. The original fistula only large enough to admit the end of the index finger. Vagina contracted and shortened.

"I may say, therefore, in this subject were found all the morbid lesions resulting from kolpopleisis which I pointed out in my paper about the subject ("American Journal of Medical Sciences," July, 1870), and which will result in a majority of cases.

"The next case Professor Simon tried was a woman from Russia, who had been operated upon successfully by another surgeon nine months before for kolpopleisis. The woman's husband becoming dissatisfied with the shutting up of the vagina, and the little improvement as regarded the retentive power of the bladder, consulted Professor Simon. Upon examination he found the fistula small, and therefore proceeded to re-establish the vagina. After effecting the latter, he proceeded to close the fistula itself, situated at the root of the urethra. The operation was performed through my small speculum, which gave Professor Simon great satisfaction. The operation succeeded only to a limited extent, the failure being due probably to the cystitis, which still existed to a slight extent at the time of the operation. Nine or ten days after the operation the patient had what was supposed to be pyelitis, which probably existed to a slight extent as a sequence of the kolpopleisis and cystitis.

"The fourth case of Professor Simon was a young woman, aged about twenty. She had a small fistula at the root of the

urethra with complete atresia of the vagina above, with no outlet for the menses. Professor Simon proposed in this case to close the fistula as the first step of the treatment. But instead of closing the fistula as he intended, he closed the vagina below the fistula, thus making the operation one of kolpokleisis, with no provision for the escape of the menses. The result was only a partial success, and further treatment will be required to complete the occlusion.

“Now as to my three cases. The first one presented was a very small woman, with a good-sized fistula involving the cervix uteri. I employed five sutures with a suitable button, and completed the closure at the first operation.

“The second case was the one Professor Simon first operated upon with partial success. The fistula was small and involved the cervix uteri, perfectly simple and easy to get at, as shown by the fact that it took only thirty-five minutes to complete the operation. The case was just such a one that I would have guaranteed a cure in eight days if I had had the entire management of the after-treatment. But, as it turned out, the after-treatment was not properly carried out, and cystitis resulted, which caused the fistula to reöpen two days after the suture apparatus was removed. On the sixth day the closure was found complete, as shown by the fact that not a drop of urine escaped per vaginam during two hours. During this time there was no catheter in the urethra, and the quantity of urine drawn off showed that the retention was complete.

“My third case was a woman from Holland, aged about thirty-eight. Professor Simon placed her in his position (the Steiss-Rückenlage), and with his instruments attempted to display the edge of the fistula, which he utterly failed to do. He stated to his class that he had met with a similar case at Rostock, in which he performed oblique obliteration of the vagina, kolpokleisis, and such an operation he would do in this case, thus cut off the cervix uteri from a vaginal outlet and place it in communication with the cavity of the bladder. In this way would be made a *cul-de-sac* in the vagina, into which the urine could enter through the fistula and cause serious trouble; viz., vaginitis, endometritis, and calculus, with all their attendant symptoms.

"After Professor Simon had finished his remarks upon the case, he requested me to examine it in my position, with my instruments, and say what I would do under the circumstances. I found the vagina very capacious, and the fistulous opening funnel-shaped, with the apex—the edge of the fistula proper—turned into the bladder and partially united to the right side of the pelvis.

"In front of the fistula, in the anterior vaginal wall, there was transverse contraction, which offered an additional obstruction to the view of the fistula. But notwithstanding all those complications in the case, I was able to get a sufficient view of the edge of the fistula to enable me to say promptly I could unite them, and thus preserve the functions of all the organs involved.

"Thereupon, Professor Simon requested me to perform the operation, as he wished to see it. After dividing the constricted part referred to, and dilating the vagina with tents for ten days, I proceeded to perform the operation indicated for closure of the fistula. The operation proved tedious and protracted, though it was entirely satisfactory. Professor Simon expressed himself satisfied, and said he did not see how it could fail to succeed.

"Six or eight hours after the operation I found an unusually small quantity of urine passing per catheter, which at once aroused my suspicions as to the right ureter being closed between two of my sutures. A few hours later the patient had great pain in the right kidney, and then felt a gush of urine into the vagina, with complete relief. When I saw her again, about eighteen hours after the separation, and learned the true story of the case, I told Professor Simon we would have a partial failure of the operation, corresponding to the point at which the right ureter lay in the posterior edge of the fistula. The same accident having occurred some years ago in a case in the Hôtel-Dieu, of Paris, upon which I operated, and in other cases, I felt confident of the final result—a partial failure. The removal of the suture apparatus on the eighth day in this case fully confirmed my explanation. A small fistula remained about the middle of the line of cicatrization, which was nearly two

inches in length. This remaining fistula is, properly speaking, a vesico-urethro vaginal fistula. Now that the precise situation of the ureter is known, there can be no difficulty in the next operation, when a complete cure may be expected; I shall probably return to Heidelberg and perform it.

"At the second operation of Professor Simon and myself, which we performed the same day, Dr. Koeberlé, of Strassburg, the celebrated ovariologist, was present. He came to Heidelberg and spent two days to see us operate. Professor Simon frankly admits the superiority of my operation in all cases when the fistula is situated high up. He is delighted with my speculum, and, indeed, has ordered all my instruments to be copied, even my operating chair.

"I expect to go to Vienna next week, and if the opportunity offers, will probably operate there.

"Yours, etc.,

"NATHAN BOZEMAN.

"*Saxe-Coburg*, April, 1875."

NOTE.—It is proper to state in connection with this letter that Professor Simon, in his report of our joint operations ("Wiener Medizinische Wochenschrift"), refers to it, and another publication in a public journal touching the same subject as untimely and unwarranted by facts. After speaking of the agreement between us to renew our operations in the summer of 1875, and expressing his regrets at my inability to do so, he says: "As early as July, 1875, Bozeman, without my knowledge, published an article in the 'New York Medical Record,' and in August a second in a public journal of Geneva, concerning our competitive operations. I only heard of them accidentally, and a long time after their publication. While I pass over the latter article in silence, as it was only intended for the general public, I must answer the former, as it was written for physicians, and contains many inaccuracies and much unfairness."

In answer to this complaint of Professor Simon, I have only to say the article in the Geneva Journal ("Swiss Chronicle") was furnished as a matter of news by a correspondent of that sheet, and totally without my knowledge or consent. As to the letter here published in full from the "Record," it speaks for itself, and will be found, I think, to differ in no essential particulars from the tabular statement previously given of his and my cases, nor from the views maintained by me in the correspondence that took place between us.

In addition to this, I will say there were several reasons for my failure to return to Heidelberg, as agreed between Professor Simon and myself at our last interview, April, 1875. Among them was a prolonged engagement with

Professor Karl von Braun in the General Hospital at Vienna; subsequently my health was seriously impaired; obligations to my family likewise interposed hindrances; and perhaps I ought to add that Professor Simon had shown so much impatience when I was with him, in allowing the necessary time for carrying out my preparatory treatment, that I was not specially encouraged to overcome the difficulties in the way of resuming the work with him.

*B. Extract from a Second Letter by me to the Editor of the "New York Medical Record."*—In this letter, published September 25, 1875, my main object was to call attention to the system of medical schools in Austria for midwives, and to give such facts relating to the subject as I thought would interest the Profession in the United States. In the course of my remarks I took occasion to refer to vesico-vaginal fistule and its treatment by kolpokleisis in Vienna, where I was then staying. But this was not done with any idea of forestalling the report of Professor Simon upon his and my operations the previous autumn, as he unjustly attributed to me afterwards in the criticisms before referred to. On the contrary, as may be seen, I studiously avoided any allusion to the particulars of these operations. I did this because I thought Professor Simon would soon report them at length, and would fairly make his deductions as to the comparative merits of the two methods, which I preferred he should first do. These are my remarks: \* \* \*

"With regard to vesico-vaginal fistule, I found here comparatively little advance in its successful treatment, excepting through the doubtful expediency of kolpokleisis, recommended by Professor Simon, of Heidelberg.

"All operators here in this disease, so far as I can learn, as well as those throughout Germany, are his strict followers in this expedient, and perform it in a very large proportion of their cases. Even the few imitators in Germany of Sims find it necessary also in a considerable number of their cases to resort to kolpokleisis.

"This I consider a very interesting fact in connection with the treatment of vesico-vaginal fistule, and affords an admirable clue to the range of applicability of these two methods, as compared with my own.

"My great object in visiting Germany has been to study this

operation of kolpokleisis, and see if possible the advantages of it, so highly extolled by Professor Simon. The results of my observations upon the subject so far are most interesting, based upon the experience of leading surgeons.

"Through the kindness and liberality of Professor Simon, I had the opportunity last fall of testing with him, in the hospital, in a practical way, the applicability of our respective operations in the face of obstacles regarded by him as insurmountable, excepting by his expedient of kolpokleisis.

"In Vienna three similar cases have been presented to me for operation by Professor Karl Braun, admitting only, according to his view, of kolpokleisis; and a fourth, thought by him to be incurable by any known method, owing to the complication of a large recto-vaginal fistule situated twelve centimetres from the anus. Suffice it to say for the present, that in all of these cases I adhered to my standard of cure; namely, *the coaptation of the fistulous edges and preservation of all the functions of the organs involved.*

"I hope soon to present my views upon this subject in a more extended form, and as the question at issue relates to the partial or complete unsexing of 30 per cent. at least of all sufferers from vesico-vaginal fistule, its importance, in a practical point of view, can not be over-estimated, and well deserves the serious attention of the Profession at large. \* \* \* \*

"Very respectfully,

"NATHAN BOZEMAN.

"Vienna, July, 1875."

*C. A Description entitled "Bozeman's Method of Operating for Vesico-Vaginal Fistule, with a Report of Four Cases Operated upon by him in the Clinic of Professor Karl von Braun. By Dr. Ludwig Bandl, Surgeon, Clinical Assistant and Lecturer on Obstetrics and Gynæcology in the University of Vienna" ("Wiener Medizinische Wochenschrift," Nos. 49-52, 1875).*—It is proper to remark before presenting Dr. Bandl's description of my operation, with details of cases, that my visit to Vienna took place about four months after the conclusion of the *concour* by Professor Simon and myself, and that three of

the four cases reported here by Dr. Bandl were only passed over to me for treatment by Professor Braun when found incurable by his method and the question as to the necessity of kolpokleisis arose.

In presenting this report of Dr. Bandl, I propose to shorten it as far as consistent with his main object; namely, to furnish a complete description of my operation, and to show wherein it differed from that of Professor Simon. Therefore, the greater part of his historical sketch of the subject as relates to the labors of Professor Simon and other surgeons I will here omit, retaining only that which appertains to my own. This course, I think, is fully justified on the grounds that the facts sought to be brought out are intended to show whether Professor Simon's theory of kolpokleisis or my condemnation of it is correct. Professor Simon having in his report of our joint operations made prominent all the important points of his individual labors, renders it unnecessary for me to report them here. I will therefore simply introduce in this, my reply, Dr. Bandl's report as relates to me, and my views upon the question involved. After referring to the importance of the labors of Deiffenbach, Wutzer, Jobert (de Lambolle), Mittauer, Hayward, Sims, Simon, Emmet, Ulrich, Neugebauer, and Braun, as directed to the improvement of the operation for vesico-vaginal fistule, Dr. Bandl continues in the following strain:

*Translation.*—Among the first, the most effective and indefatigable advocates of this operation is Bozeman, who, in 1856,\* published his first report of four cases cured by means of an original suture designed by himself. This was followed in 1857 by another communication containing a report of fifteen successful cases, mostly of a difficult nature, and also suggesting further improvements in the method of operating. In order to advocate and make known his method, he did not hesitate (1858) to cross

\* Bozeman. Remarks on vesico-vaginal fistula, Montgomery, Alabama, (from the Louisville Review) May, 1856. Urethro-vaginal and vesico-vaginal fistules, North American Medical Chir. Review for July and November, 1857. Urethro-vaginal, vesico-vaginal, and recto-vaginal fistules, New Orleans Medical and Surgical Journal for January, March and May, 1860. Vide also Bozeman's operation, reported by Robert, of Paris, in the Gazette des Hôp., 1859, No. 1.

the ocean, the results of which journey he published in 1860, having performed a number of most successful operations in London, Edinburgh, Glasgow, and Paris, in the presence of the leading specialists of these cities. During his present trip he visited Heidelberg, where he operated several times in Professor Simon's clinic with his usual skill and the full approval of Professor Simon. Thence he proceeded to Vienna, where Professor v. Braun turned over to him for surgical treatment three of the most difficult cases, and a fourth of a more favorable nature. For three months this indefatigable and benevolent surgeon remained in Vienna merely for this purpose, and succeeded in giving complete relief to four unhappy and miserable women, operating once in each case. I became thoroughly acquainted with his mode of procedure, and I believe that a publication of his method and of the four successful cases treated by him will best express the great thanks due him on my behalf as well as of the four patients. After this short retrospect, I shall now proceed to describe Bozeman's method of operating for vesico-vaginal fistule.

In my opinion the great assurance of success lies in the preparatory treatment, the importance of which Bozeman\* was among the first to discern and point out. Emmet, the distinguished surgeon of the New York State Woman's Hospital, whose record of successful operations is very large, justly says that the whole secret of success depends upon it, and that the most skillfully-performed operation will fail if no attention is paid to it. He enlarges the vagina with glass plugs, as employed by Sims. Bozeman himself lays the greatest stress upon it, and he frequently says: "Not to perform, but to prepare for the operation is often difficult."

The difference in his practice lies not merely in the incisions made by other surgeons for rendering accessible inaccessible

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\* The leading idea of this systematic dilatation is already contained in Bozeman's first article of 1856, where he describes how in Case II, by introducing bags of oiled silk stuffed with bits of sponge (tampons), by frequent incisions of cicatricial bridges, he succeeded in completely dilating an obliterated vagina after a few weeks, and closing successfully two fistules, each at one operation.

fistules distorted by cicatricial tissue, nor in amply dilating agglutinated places, as done by many, among others by Ulrich, with Indian rubber bougies; but he insists that the united wound, during the healing stage, must be exposed as little as possible to the strain brought to bear upon it by the surrounding and retracting tissues. He ascribes to the omission of attending to this circumstance a large number of operative failures in apparently uncomplicated fistules, which can only be avoided by careful exploration with the eye and finger, and by division of each cicatricial band and of each tract of thickened tissue. A thin cicatricial band, almost invisible, may cause the operation to fail. The importance of this exploration became especially evident in his first case here, where a cicatrix in the vicinity of the point of insertion of a suture was certainly the cause of a suture opening and remaining, as predicted exactly by Bozeman at the time of his operation.

From what I have seen during Bozeman's sojourn of three months of his preparatory treatment,\* I am convinced of its great value; I saw that it made success sure; the vagina becomes more accessible, and when the fistule is situated high up, no pulling down of the uterus is necessary. This method also renders it possible to unite fistulous edges which, heretofore, it was believed could be treated successfully only by diagonal or transverse obliteration of the vagina (kolpoplexis).

The beginning of the procedure is, to pay attention to excoriations and abrasions of the vagina and of the external genital organs. He cuts off the hair found in the posterior vaginal angle, which is usually encrusted with deposits of urinary salts, greatly irritating the excoriated surfaces and causing great distress to the patient. After this is carefully done, a solution of argenti nitras  $\mathfrak{5i}$  to  $\mathfrak{3i}$  of water (grms. 4 to water grms. 16) is applied to all the abraded points inside and outside the vagina. By these means the woman is freed from pain, and soon her confidence is gained, which is absolutely necessary, especially if the treatment is to be protracted. At the same time during

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\* In mentioning the term "preparatory treatment," Dr. Bandl always refers to Dr. Bozeman's gradual dilatation of the vagina previous to the operation. (*Translator*).

the first examination resisting cicatricial bands are divided and the vagina dilated as far as possible with the fingers. After this, dilators of gradually-increased sizes are kept constantly in the vagina. The latter consist of balls and cylinders of hard rubber. Seven-eighths of these, increasing in size from three-tenths to five-tenths millimetre, are sufficient for most cases. Both balls and cylinders are perforated near the surface or end, and a string is passed through, tied in a loop to facilitate removal from the vagina. According to the vaginal dimensions, therefore, a cylinder is inserted and allowed to remain from ten to twelve hours. It is then withdrawn and the vagina flushed thoroughly with tepid or cold water, or the woman is placed into a hip-bath to recover from this first proceeding. Already after three or four days one is surprised at the effect produced by this treatment; the hard dilator, firmly encircled everywhere by the surrounding walls of the vagina, softens the tissues; cicatricial bands, heretofore unperceived, are recognized; and last, but not least, the bladder, which had previously projected outside the vulva in consequence of the great deficiency existing in the posterior vesical wall, is now found to have resumed its proper place, when the patient is placed in the knee-elbow position. Superficial incisions are afterwards made whenever any resistance is found in the vagina and is likely to cause obstruction, and a dilator of larger size, either ball or cylinder, is introduced. The woman soon becomes accustomed to this procedure; she even bears it gladly, for she is enabled now to remain in bed for hours in a dry condition. While thus treated she can easily attend to her household duties if she chooses, and also enjoy comfortable nights. After persisting in this course from three to five days, or even a longer time, the vagina, previously hardened and stiffened by cicatricial tissue, becomes soft and enlarged, while the edges of the fistule are clearly visible.

Only an eye-witness, who has seen this preparatory treatment and been present at the operation itself, is able to appreciate the great importance of this systematic dilatation for the purpose of obtaining a perfect and clear knowledge of even the most complicated cases, although it can be partially understood even by the report of the four cases made at the end of this article.

Cases II and IV especially prove the remarkable success of systematic dilatation; for by this method alone was it possible to effect a cure and preserve the natural functions of the organs involved, while otherwise it would have been necessary to sew the uterus into the bladder or to make diagonal or transverse obliteration of the vagina (kolpokleisis). For in the second case it required three weeks of preparatory treatment to render the upper border of the fistule sufficiently movable to get the two edges together. In the fourth case many weeks of careful and painstaking preparation were required, until it could be ascertained that it was possible to unite the fistulous edges, and thus avoid the usual expedient of enclosing the uterus in the bladder.

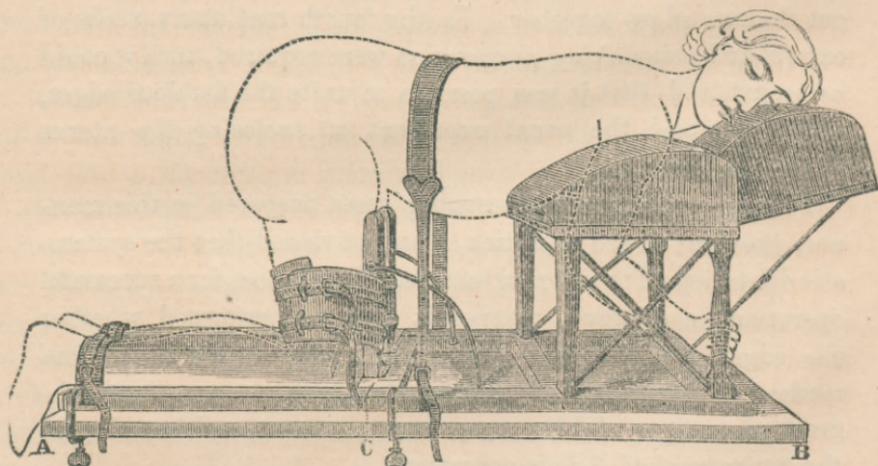
From my experience concerning cases prepared in this manner, previous to the operation, I am convinced that the systematic dilatation of the vagina increases the chances for a successful operation, in whatever manner it may be performed, whether the edges are freshened and united after Simon's or Sims' method. Professor von Braun also highly appreciates the great advantages of this preparatory treatment, and has adopted the entire method for his operations.

Already during this preparatory treatment the patients are accustomed to the position in which they are placed by Bozeman during the operation. It differs materially from the position which other well-known specialists cause the patient to assume. Thus Simon operates in the exaggerated lithotomy position (Steiss-Rückenlage); Baker Brown and Ulrich recommend the one commonly used for stone in the bladder, while Sims and Emmet have adopted the left lateral. Bozeman, however, fastens his patients upon a support or chair designed by himself for operations on the sexual organs; it weighs only seventeen pounds, and was brought over from America by himself, together with all his instruments. It can be placed upon and secured to any small-sized table, and by fastening the patient upon it in the knee-chest position, it renders the operator entirely independent of the patient's movements. The abdominal muscles are relaxed, the vagina is widely opened, respiration and circulation are in no wise disturbed, while the patient can be kept

under the influence of chloroform for any length of time as well as in any other position; neither does vomiting disturb the progress of the operation to any unpleasant extent.

In the four cases operated on by Bozeman in the General Hospital here, this table proved to be a perfect success. It is hardly possible to give the reader a clear idea by merely describing it. I add a drawing (figure 1), which shows how the

FIGURE 1.



apparatus is attached to a common table A B, by clamps C G, and how the patient is securely fastened to it. Its length is ninety-five centimetres and the width forty-seven centimetres.

Bozeman's entire method also needs but very little assistance during the operation. This desire induced several surgeons to devise certain contrivances whereby the speculum could be kept securely in its proper position without requiring the aid of an assistant. Thus Spencer Wells is reported to have performed several operations without any assistance whatsoever by employing Sims' speculum,\* modified by Foveant in such a manner as to connect it with a plate attached to the sacral region. I have myself assisted in several operations where this modified speculum was used, but I was obliged to pay so much attention to the sacral plate that I should have almost preferred Sims' beak with Simon's handle. Emmet† attached a similar plate

\* Marion Sims, *Gebärmutter Chirurgie*, page 18, Deutsch von Beigel.

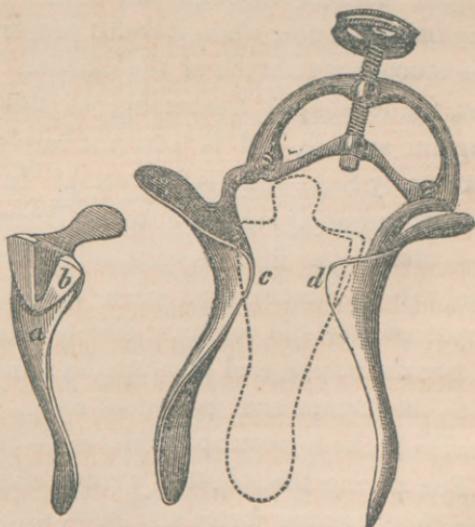
† Emmett, page 25.

to a two-bladed speculum, with the remark, however, that it does not always answer its purpose as well as Sims' speculum.

In the apparatus designed by Ulrich and Neugebauer the speculum is fixed by more complicated contrivances.

Bozeman's table already dispenses with any assistance for fixing the body of the patient; neither does his two or rather three-bladed speculum require an assistant, as it remains attached to the anterior vaginal wall as soon as the blades are expanded by the turning of a screw. His first communication concerning his speculum appeared in the "New York Medical Record," January, 1868. The drawings of his table and speculum are contained in his article published in 1869.\* It fully serves its purpose in every case in which the vagina had been

FIGURE 2.



I lay especial stress upon this circumstance, and I know of no other similar two-bladed speculum which equals Bozeman's in usefulness. For it enables the surgeon to minutely examine and to perform every operation on the cervix and vagina in whatever position the patient may be placed, and without much assistance. Bozeman employs four different sizes, according to the capacity of the vagina, making it a general rule, "the larger the fistula the smaller the speculum."

The drawing (figure 2) gives one-third size and three-fourths view of the medium-sized speculum; it is opened almost entirely, while the dotted lines show where the third blade is attached. *B* shows the under surface of the third blade when inserted into the vagina and slid under the projecting arches *c* and *d*, and there

\* Bozeman. Operation of vesico-vaginal fistula without the aid of assistants. From "New York Medical Journal," February, 1869.

fastened. It must, however, be admitted that the use of the third blade is not always practicable; in several operations Bozeman, instead of using it, caused the posterior wall of the vagina to be raised by means of spatulæ of various shapes and sizes. The two-bladed speculum, however, is still the best adapted and most useful. Bozeman employed in his four operations only two assistants, one to attend to the chloroform, and another to hand the instruments. The latter, however, could be dispensed with on a pinch. The method of paring the fistulous edge does not differ in any way from that used by Professor Simon, as demonstrated in his work published in 1862 (page 53), and also approved of by Ulrich, of Vienna. Bozeman has freshened for a number of years, leaving either perpendicular or steep funnel-shaped borders through the entire thickness of the vesico-vaginal wall; nor, when it seems proper, does he hesitate to pare the mucous membrane of the bladder. He specially avoids the flat, funnel-shaped freshening, as this affects principally the vaginal surface, and is now but rarely advocated by anybody (except by Sims and his followers). In cutting the edges of the fistule and applying the sutures, Bozeman does not pull down the uterus (as first recommended by Jobert and afterwards adopted by Simon), even when the seat of operation is in the upper part of the vagina. Simon uses for this purpose first Museux's forceps, and then applies a noose in order to dispense with the forceps and gain more room. Ulrich invented special double hooks to accomplish the same end.

For paring the edges Bozeman employs knives with a long handle of various forms and sizes; some straight, some bent at an obtuse angle with the cutting edge to the right and left side. He also uses two pairs of scissors to be employed to the right and left respectively; they serve principally the purpose of forming the angles. For steadying the edges small hooks are used; one bent at a right angle is more suitable for the upper, while a crooked hook is used for the lower margin.

In the first and third cases, where the deficiency was comparatively slight, he seized the anterior edge with the crooked hook, and with two strokes of the knife circumcised the entire edge of the fistule. In the second and fourth cases, where a

large deficiency existed, he pared the lower edge with the knife, the upper one with the knife and scissors, and for forming the angles, the right and left-cutting scissors were employed.

In his article of 1857 he directed attention to the ureters opening into the upper edge of the fistule, where a considerable deficiency existed, and he had already at that time divided, in one case, the ureters towards the bladder one centimetre with a slender crooked knife, thus insuring their opening into the bladder after the wound was united. Simon also directed attention to this circumstance. He found, down to the year 1868, the ureters embedded four times in the edge of the fistule; he incised it once. Simon knows of no case in which occlusion caused any particular symptoms during life, but Bozeman warns the operator against this danger while closing the wound, as he is convinced that the operation might fail on this account (see Case II). In paring the root of the urethra he pays great attention to forming a smooth surface. Any bleeding during and after the cutting is carefully stopped by injections of cold water.

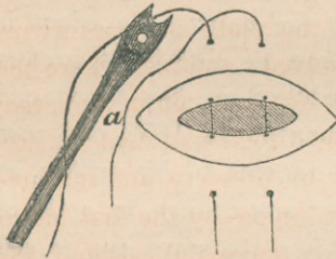
The suture employed by Bozeman for uniting the edges is quite peculiar (the button suture), and he, like Sims, prefers silver wire in its construction; but while Sims has abandoned his clamp suture, which he recommended in 1852, and now simply twists the wire, Bozeman still adheres to his suture, as first described by him in 1856, without any change, in spite of the many attacks made upon it. After the wires are passed through the borders of the wound he fastens them, by means of small perforated shot, to a perforated plate of lead, which rests upon and is closely adapted to the united borders with a concave surface. He seems to me, and justly too, to lay more stress upon the concave lead plate keeping the united edges safely and securely together than upon the employment of silver wire; he merely uses this because it can be fastened more conveniently to the lead plate than silk threads.

I will describe the application of the suture apparatus as it occurred in Case I, where only two sutures were employed. In every case Bozeman uses straight, spear-pointed needles of various lengths. He prefers the straight to the crooked needles, as

they can be passed through the edges easier and more safely. Only in extraordinary cases is the crooked needle made use of. The silver wires are very thick and well annealed, and about forty centimetres long. The bent end of the wire is connected with a silk thread previously passed through the margins of the wound, and then made to take the place of the latter. In order to prevent any traction upon the tissue, a small fork is used for keeping the wire in the right direction. The wires are thus drawn into place without injury to the tissue.

The sutures are inserted about one centimetre from the edges of the wound; they perforate the entire thickness of the vesico-vaginal wall, leaving out only the mucous membrane of the bladder. The sutures are distant from each other usually one centimetre. After all the sutures have been inserted, and, upon examination, the raw surfaces are found to touch each other closely (wires seem to me to be better adapted than silk) the wires are passed through a little hole (*a*, figure 3) and thus

FIGURE 3.



adjusted. By pressing the instrument (suture adjuster) close to the surface of the wound and then tightening the sutures in succession, complete coaptation of the edges of the fistule is effected. Next a plate of lead, one mm. thick, is cut to a proper form and length, perforated by holes corresponding to the sutures, and

finally pressed into a concave shape with a suitable forceps. The wires are passed through the holes of the plate, as shown by figure 4, and then pressed with its concave surface firmly upon the united wound by the above-described fork. The blood oozing from the wound through the holes of the plate shows how firmly its borders are pressed together. In order to make complete union perfectly sure, the plate is lifted once more, when it will be seen that the edges of the wound are closely united, and that the plate prevents any traction of the surrounding tissue. Figure 5 shows a transverse

FIGURE 4.



section of a finished suture,  $a b$  the united edges,  $c$  the plate fastened by means of a silver wire and a small compressed shot. Here the two ends of the wire are seen cut off and bent over the side of the shot.

The shape and size of the plate depends upon the shape assumed by the edges after being united by the wires. The latter sometimes do not lie in a straight plane, but are convex or undulating. The plate in this event must be cut or bent in a manner to correspond to the line of adjusted sutures, otherwise derangement of the united edges of the fistule is liable to occur. This circumstance had to be taken into consideration in the second, third and fourth cases.

FIGURE 5.



In 1857 Bozeman published some cases which, previous to the preparatory treatment, he himself believed to be incurable, except by occlusion of the vagina, yet he finally succeeded in successfully uniting the fistulous edges. In the same article minute directions are given concerning the refreshment of the edges of the fistule and the shape of the plate in cases where the cervix uteri or the urethra is involved; and also where the united edges do not form a straight line, but run in a curved, angular or undulating direction. The directions prove the extraordinary care taken by Bozeman to preserve and improve every possible chance to bring about union by the first intention, and to make the first operation successful without the necessity of repeating it.

Union was accomplished in all the four cases here reported in a straight line in a more or less transverse direction. This will certainly be possible in most cases, provided the preparatory treatment is persisted in. As the edges can be united more securely in a straight line than under several angles, the chances of success are greatly insured and the value of the entire method is proportionately enhanced.

I have now merely to add that Bozeman always introduces a catheter into the urethra whenever there is a large-sized fistule, in order to determine the relations of the canal to the anterior border of the fistule on either side, since the sutures are applied

in accordance with these relations. Great attention is also paid to the situation of the ureters in the excised surfaces, so as to prevent their being included in the sutures. In order to secure the opening of both towards the bladder, I saw him slit the cut ends and apply the wires rather close on either side.

As soon as the sutures are completed, the bladder is cleaned from blood with cold water. Bozeman's suture has been imitated by many, especially in England, Scotland and France. Baker Brown\* already, in 1858, had operated on and published ten cases of fistule, varying in size, position and difficulty, according to Bozeman's method. This article is prefaced by a dedication to Bozeman, rendering justice to and freely acknowledging the superiority of his method. In Austria and Germany, however, Bozeman's method, until recently, was but little known. Neither has Professor Simon abandoned his method of operating. I do not presume to decide upon the relative merits of these two methods, whether the one or the other succeeds better in causing a union of the fistulous edges; an experience of twenty years has caused each surgeon to adhere rigidly to his own method. Neither do I know Professor Simon's present opinion after having seen Bozeman operate and having noticed the results. Bozeman remained seven weeks in Heidelberg, operating on several fistules in the presence of Simon and Koeberle, the latter having come from Strassburg for this special purpose. I find in an article published by Bozeman in the "New York Medical Record," July, 1875, that Professor Simon frankly admits the superiority of his operation in all cases where the fistule is situated in the upper portion of the vagina. Whether Simon refers principally to the suture, I am unable to say, but he evidently places great value upon the general method of operating, since he has ordered Bozeman's instruments and operating chair to be copied.

Bozeman's four operations have convinced me that his (button) suture greatly insures a cure by the first intention, though at his first operation, when only a small fistule had to be united,

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\* Baker Brown on Vesico-Vaginal Fistula and its Successful Treatment. Read before the British Medical Association at Edinburgh, July 31. London, 1858.

I did not appreciate its value so much as I did afterwards in witnessing the results in the second and fourth cases, where the lines of union were respectively five and four and a half centimetres long. By his method the borders are kept in close juxtaposition during the entire healing process, and perfect union takes place. The plate gives rest and support to the fistulous edges, keeping them in exactly the same plane in which they were united. This plate also protects the wound against external influences and obnoxious secretions. Bozeman has achieved complete success in many cases with long lines of union.

Concerning the after-treatment, Bozeman rigidly adheres to his former opinion with regard to the obnoxious influence of the urine on the united borders, especially when the fistule is of large size. In almost every case he introduced permanently a common English, medium-sized elastic catheter, and took great pains to prevent its becoming clogged up. In the second and fourth cases he came himself several times during the day to examine and clean the catheter. On his departure from Vienna, before the fourth case was cured, he entrusted the after-treatment to my care, with the strict injunction to attend carefully to the permeability of the catheter, and not to remove the sutures too late. Emmet, like Bozeman, also adheres to the use of a catheter, though he employs in his cases the one (metallic) designed by Marion Sims, which he allows to remain in the bladder until the sutures are removed. Both have achieved great success at the first operation.

Simon, however, declares in his article of 1862 that it is unnecessary, and even obnoxious, to leave the catheter permanently in the bladder. Ulrich also agrees with him, and both allow the normal function of the bladder to be performed immediately after the operation for closure of the fistule. I, myself, have seen a number of operations performed on fistules with perfect success without the use of the permanent catheter. Which plan, then, promotes a cure with greater certainty?

Bozeman, after his acquaintance with Simon, seems to have somewhat modified his opinion concerning the use of the permanent catheter. In his third case here, where a small fistule

was united without causing any tension, no catheter was inserted, the urine merely being drawn off every four hours. This proves that Bozeman has abated his idea, heretofore rigidly adhered to, of always keeping a catheter in the bladder; no longer considering it absolutely necessary in small-sized fistules, when the capacity of the bladder is greater and the mechanical action of the urine of less importance. Where, however, the fistule is of long standing and there is a long line of union, the capacity of the bladder is lessened, and he still employs the permanent catheter. This modified view of Bozeman is probably due to the personal influence of Simon, and I believe that the acquaintance of these two masters with each other will greatly promote the operation for vesico-vaginal fistule. During the first days after the operation opium is ordered by Bozeman.

The sutures were removed in each case on the seventh day after the operation. This was easily done; after seizing successively the small shot with a pair of bent forceps, the wires are cut beneath with a pair of long-curved scissors, the plate is removed and the suture loops opened and drawn out of the wound.

CASE I.—*Three Vesico-Vaginal Fistules of the size of Hempseed of Eight Months' Standing—Vagina in its upper third contracted by firm cicatricial tissue to a diameter of three centimetres—Cure after the first operation.*—A. S., primipara, twenty years old, a strongly-built and good-looking woman, admitted May 14, 1875. She was delivered in Galicia, after four days of labor, by craniotomy. Two weeks after the birth she was unable to retain the urine. The patient remained in bed for two months on account of sickness. In the third month menstruation took place. In the recumbent posture she is able to hold the urine for several hours, in the sitting posture for about two hours, in walking or standing the urine flows uninterruptedly.

May 16th, I tried to bring the fistules into view by means of Sims' and Simon's speculum, but was prevented from so doing by the cicatricial tissue in the upper third of the vagina, especially on the right side. All I could see was a funnel three centimetres wide embedded in the cicatricial tissue, through which

the urine flowed into the vagina. Two centimetres from the border of the funnel a small opening was found, through which a bent uterine sound could be passed into the bladder. From the funnel, on either side, tough cicatricial bands proceeded towards the posterior vaginal wall, thus narrowing the lumen of the vagina to three centimetres. Bozeman introduced his smallest speculum; it passed the most constricted point, and now the obstructing cicatricial bands could be seen, without enabling us, however, to obtain a clear and complete view of the fistule. Bozeman took charge of the case May 21st. After having introduced his smallest speculum, he cut the most prominent scars on either side three to four millimetres deep, using for this purpose a slender, long-handled knife. These incisions gave a clearer aspect, for now could be seen three fistules of the size of hempseed separated from each other by slender tissue bands three to four millimetres broad comprised within a space as large as a ten-cent silver coin (kreutzer) and one centimetre below the junction of the vagina with the cervix uteri. A small, hard rubber cylinder was now inserted; the patient was examined every third or fourth day, and the scars near the funnel, previously described, superficially incised. Balls and cylinders of increasing size were then introduced, and a solution of nitrate of silver repeatedly applied to every abraded point. After a month of preparatory treatment Bozeman believed it to be about the proper time to perform the final operation. The vagina was now softened and nearly of normal width; the fistules were all in one plane. At the lower border of the fistule to the right, a cicatrix, although invisible, could be felt, and for the removal of this Bozeman would have continued the dilatation longer if he had been able to remain in the city. He operated, however, but feared that a suture opening would remain and prevent a complete union. The operation took place on the 22d day of June. After fastening the patient upon his supporting chair and placing her under the influence of chloroform, the fistules were exposed to view by speculum No. 2, with rectal plate. He cut through the entire thickness of the vesico-vaginal septum with two strokes of the knife, steadying with a small hook the portions to be excised. After bleeding had ceased two sutures

were passed through the freshened funnel, now measuring 1.5 centimetre. Next the borders were adjusted and the wires fastened to a small plate of proper shape in the manner described before and shown in figure 4. The concave edge of the plate was turned toward the anterior lip of the cervix uteri.

The operation was finished in thirty minutes. A catheter was afterwards introduced into the bladder and kept there for seven days; on the 25th an intense redness of the skin (scarlatina) was observed, especially on the chest and abdomen, with high fever. On the 29th, the fever abated and the sutures were removed. The fistule was found closed, but some urine, however, oozed through a suture opening to the right and below the scar previously mentioned, through which a surgical probe could be passed. Symptoms of double nephritis appeared August 6th, when an examination showed both fistule and suture opening to be closed. Still a small quantity of urine escaped into the vagina. A subsequent examination revealed the existence of a capillary fistule. This was proved by placing a small piece of thin linen (Bozeman's linen test) upon the suspected spot. By using this method the existence of a small invisible fistule can easily be ascertained. The symptoms of nephritis soon disappearing and no more urine passing into the vagina, the patient was dismissed cured November 16th.

CASE II.—*A Vesico-Vaginal and a Recto-Vaginal Fistule of Three Months' Standing, the former of enormous dimensions, the latter of the size of a quarter of a dollar, with inversion of the Bladder—Cure of the Vesico-Vaginal Fistule at the first operation with the exception of a very small point.*—K. C., thirty-two years old, of Hungary, admitted June 14, 1875. After having borne seven children spontaneously, she was delivered, without the use of instruments, of a dead child after four days of labor; it seems to have been a face presentation. Upon leaving her bed, a week afterward, urine and fæces escaped involuntarily.

The inverted bladder, of the size of a child's fist, is visible in front of the vulva; after replacing it the smallest speculum of Sims-Simon was with difficulty introduced, revealing a

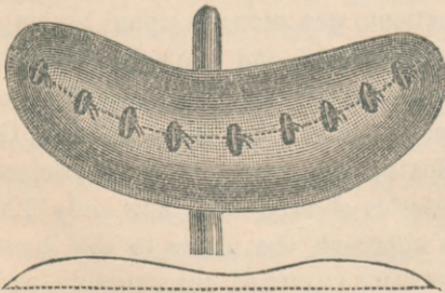
fistule five centimetres broad with edges four centimetres apart longitudinally. Only a partial view of the cervix uteri and rectal fistule could be obtained. The upper edge of the fistule having been seized with a double hook, an attempt was made to pull it down, but it was nearly immovable, the left edge especially, where it adhered to the posterior surface of the left pelvic bone.

Bozeman incised, June 26th, a tough cicatrix running in the direction of the sacro-ischiatic ligament and introduced a cylindrical dilator, to be replaced the next day by one of increased size. On the fourth day the beneficial effects of this method became evident. In the knee-elbow position the bladder already no longer protruded, and both fistules could be brought into view by introducing the smallest of Bozeman's specula. The rectal fistule, of the size of a quarter of a dollar, became visible at the posterior roof of the vagina, surrounded by not very tough borders. As a most important circumstance, the upper edge of the urinary fistule was now somewhat movable. We measured the force necessary to bring in contact the upper with the lower edge by inserting two double hooks in the cervix uteri and attaching them to spring-scales. For accomplishing this purpose, 2,800 grammes, nearly six pounds, were found to be necessary. Dilatation with cylinders of increasing size was continued. The abraded spots were touched with a solution of nitrate of silver.

July 13th, Bozeman concluded that the proper time for operating had arrived. The patient was secured upon his supporting chair, chloroform administered, and the urinary fistule exposed to view in a splendid manner by the introduction of speculum No. 1, with the rectal blade. Professor Billroth, G. Brown, Karl v. Braun, Späth, and many other physicians were present. The spring-scales showed that now only 120 grammes were necessary to approach the upper to the lower edge. The fistulous borders were stretched out smoothly, and the distance from the mouth of the urethra to the lower border of the fistule was 3.5 centimetres, from the upper border to the insertion of the vagina two centimetres, and from the lower border of the rectal fistule to the posterior angle of the vagina

or fourchette 11.5 centimetres. The opening of the right ureter could now be plainly perceived at the upper edge, urine flowed from it and a surgical sound was passed up for several centimetres. Nothing was seen of the left ureter. The rest of the vagina was soft and wide with the exception of a small portion towards the left angle, which was still somewhat hardened. Freshening with the knife and scissors was tedious on account of the large size of the fistule. Only a very small amount of tissue could be spared for this purpose, and in order to economize the latter as much as possible, the knife was passed through the entire thickness of the vesico-vaginal wall in front, and then the required strip was shaved off carefully all around the entire circumference. Before applying the sutures a catheter was inserted into the urethra in order to determine its exact relation to the freshened anterior border; the greater portion of this was found situated to the right side of the urethra. Before uniting the edges of the fistule, Bozeman slit open the right ureter with the vesical mucous membrane about one centimetre, in order to insure the uninterrupted flow of urine into the bladder. After nine sutures had been introduced, five to the right and four to the left side of the urethra, and adjusted in the manner described, it was found how free from fault the union of the edges (one centimetre in thickness) had been made. The line of union was concave upwards; it did not, however, run in an even, but rather in an undulating plane.

FIGURE 6.



In accordance with this circumstance Bozeman shaped the plate in such a manner as to make it conform exactly with the undulating plane, thus securing in an admirable manner a close and exact union of the two raw surfaces.

Figure 6 shows the general form of the plate as viewed upon the upper surface, and the relation of it to the catheter supposed to be lodged in the urethra. The line below indicates the curvature upon the concave surface.

A catheter was kept permanently in the bladder. After the operation feeble pains occurred, lasting, however, but one day. The patient was without fever, and remained dry until the fifth day, when a small quantity of urine escaped into the vagina.

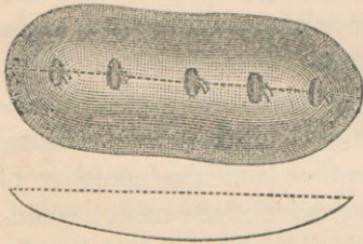
July 20, Bozeman proceeded to remove the wires, remarking, at the same time, that he would be satisfied if there was union only to the extent of five sutures. To our great surprise, however, the fistule was found almost completely closed; only a small opening remained between the seventh and eighth sutures on the left side, through which a surgeon's probe could be passed into the bladder. Bozeman ascribed the partial failure to the probable obstruction of the left ureter within the united edges of the fistule. The patient retained the catheter five days longer, when she was allowed to hold the urine for one-half to three-quarters of an hour, and to discharge it spontaneously. Bozeman said, in view of the hot weather and the necessity of further preparatory treatment, that closure of the small remaining opening and the rectal fistule should not be undertaken for three months; so the patient was sent home for the present after the small opening had been twice cauterized.

CASE III.—*Fistule as large as a bean, three centimetres distant from the Cervix Uteri, of Seven Months' Standing—Cure at the first operation.*—Mina S., a healthy-looking woman, thirty-five years of age, was admitted May 18, 1875. Has had twelve children, four of which, however, after a tedious labor, were still-born. The last confinement took place seven months ago, when the forceps were employed and labor terminated after forty-eight hours' duration. The pelvis measured in the antero-posterior diameter 9.5 centimetres. The patient was able to retain the urine for hours while lying on her back, but on her arising it escaped immediately. Since her last confinement menstruation has twice taken place; then it ceased for two months with symptoms of pregnancy. Three previous operations were attempted for closure of the fistule, without giving her any relief. Five days after the second operation a two-months' ovum was expelled, it having been destroyed by the exudation of blood within the decidua.

July 13, Bozeman explored the fistule with speculum No. 4

and corresponding rectal plate. The fistule was as large as a bean, situated a little to the right of the median line at a distance of three centimetres from the cervix uteri. The borders of the fistule and surrounding tissue seemed at first sight to be normal, but on closer examination a cicatrix could be seen and slightly felt running in a transverse direction just below the fistule. Bozeman introduced the largest cylindrical dilator into the rather large vagina, but finding simple dilatation insufficient, he incised the cicatrix after two days and continued the dilatation.

FIGURE 7.



On the 21st he again, in the presence of Professor Salzer, explored the vagina with speculum No. 3, when the cicatrix could be neither seen nor felt. He then rapidly freshened the edges, somewhat less steep and a little further from the fistulous border than

in his previous operations, as is also done by Simon whenever there is an uncomplicated vesico-vaginal fistula. He then closed the fistule with five wire sutures and a plate of the shape and size as shown in figure 7. The borders of the approximated wound, measuring nearly four centimetres, were thus united as closely as could be wished, and the success of the operation seemed to be fully insured. The line of union presented, together with the neighboring tissue, a slight depression. Bozeman shaped the plate so as to conform exactly to this depression (see figure 7). The united edges extended not in a transverse but in a diagonal direction, the left angle pointing upwards, consequently the plate also assumed a diagonal position.

For the first three days the catheter was worn, but on the fourth the patient was allowed to pass the urine spontaneously. July 28, Bozeman having left Vienna, I removed the sutures in the presence of Professor v. Braun, and found that a complete cure was the result. The patient could now hold and pass the urine naturally. Only slight symptoms of catarrh of the bladder were present. She left for her home August 2d cured.

CASE IV.—*Vesico-Vaginal Fistule of Five Months' duration 3.5 centimetres broad, with the edges separated 2.3 centimetres and embedded in cicatricial tissue—Prolapse of the right fallopian tube into the Vagina caused by the division of a cicatrix invading Douglas' Cul-de-sac—Cure at the first operation.*—Johanna Schmutzer, thirty-four years old, from St. Andræ, was admitted May 22, 1877. The patient looks delicate and feeble. Was delivered spontaneously, four years ago, for the first time after several days' labor of a dead fully-developed child. Five months ago she was again delivered, with forceps, of a dead child at full term forty-eight hours after the water broke. On the seventh day after the confinement urine escaped involuntarily. The patient has been sick almost ever since. The pelvis is shortened to nine centimetres in the antero-posterior diameter.

An exploration was made by me with the smallest Sims-Simon speculum, aided by a spatula. At the distance of 3.5 centimetres from the meatus urinarius a funnel-shaped depression was observed, measuring 4.5 centimetres transversely and three centimetres from above downwards, to the bottom of which the normal mucous membrane of the vagina continued.

The entire funnel, especially its right angle, was fixed against the anterior pelvic wall. It was sufficiently large to admit the passage of two fingers, but it was impossible to examine its entire depth with the eye. The upper edge of the funnel was situated one centimetre from the cervix uteri, whose anterior lip, measuring two centimetres, was torn in the median line as far as the point of union with the vagina.

May 28th, Bozeman began the preparatory treatment. He incised first the most prominent scars to the right and left, and then introduced a cylindrical dilator of suitable size. At the same time great relief was afforded the suffering patient by cutting off the hair around the vulva and touching the excoriated points with a solution of argent. nitr., as before mentioned. The result was astonishing, for the pain had disappeared almost entirely on the succeeding day. The woman was now examined every other day, and superficial incisions made wherever any projecting cicatricial tissue showed itself, followed by dilators of increasing size. The latter the patient herself was able to in-

roduce and remove. The woman had improved in one week's time so much that she could walk out with but little discomfort, especially when wearing the dilating ball, while previously she spent her time mostly in bed or in a hip-bath, moaning with pain.

*June 8th.*—A tough cicatrix, situated at the upper edge of the funnel and running across the posterior vaginal roof, had resisted every effort made to dilate and soften it. Bozeman now made a deep incision a little to the right of the median line, and then introduced the finger for the purpose of ascertaining the yielding character of the sub-lying tissue. The latter suddenly gave way, and after withdrawing the finger the right fallopian tube was seen to protrude into the vagina to the extent of four centimetres.

This accident did not disturb me much, for I had already once before observed the prolapsus of a tube while amputating an inverted uterus. When this happened the galvano-caustic loop had not yet cut through entirely. On drawing the instrument back, however, after the amputation of the uterus, one of the fallopian tubes was found hanging within the noose, and was pulled down to the vulva. It was disengaged and replaced with a grooved forceps, and the woman recovered. I may mention here the interesting fact, that the peritoneal opening caused by the amputation was not yet closed four weeks after the operation; a sound could be passed up until twenty-four centimetres were indicated on the sound. Thus the woman, although without a uterus, was perhaps for a long time exposed to an extra-uterine pregnancy.

The woman—to return to our case—complained of pain in the right abdominal region after the accident referred to. After placing her in the knee-elbow position and gently seizing the tube with a grooved forceps, we easily returned it to its place, when the opening through which it had escaped became visible. The wound was two centimetres long and five minims wide. As Bozeman had to send for his operating chair and instruments, two hours elapsed before closure was effected. After excising the ends of the cicatricial band, the wound was closed from above downwards with four sutures and a suitable plate, as for

an ordinary fistule. The woman had for several days slight pain in the right abdominal region and some fever. On the seventh day Bozeman removed the sutures. The entire vagina, and especially the wounds caused by the incisions, were lined by a croupous exudation, yet the spot covered by the plate presented a normal appearance, and the wound was closed completely.

After a rest of three weeks, dilatation was renewed. The woman was then, at her own request, sent home for two weeks, where she continued dilatation, inserting and removing the dilators herself. She returned July 21st, and on the following day Bozeman operated in the presence of Professors Dumreicher and Braun and several other physicians.

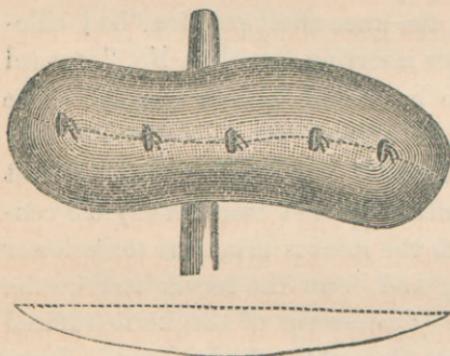
He fastened the patient in the knee-chest position, had chloroform administered, and after inserting speculum No. 2, caused the posterior vaginal wall to be raised with a spatula. The vagina was soft throughout; the edges of the fistule were plainly visible, but their inversion towards the bladder was not yet entirely redressed. The fistule measured transversely 3.5 centimetres. The distance from the meatus urinarius to its lower border was 3.5 centimetres, and from the cervix uteri to the upper border 1.5 centimetre. One sweep of the knife sufficed to freshen the lower edge from the right to the left angle. Parts of the vesicular mucous membrane were also removed. In paring the upper border some difficulty was encountered. It was very thin, necessitating the removal of all the tissue up to the cervix uteri; even the anterior lip of the latter had also to be freshened. But this was torn along the median line, and cicatricial tissue extended from the angle of the cleft. This latter circumstance rendered the formation of a smooth and even surface difficult. It was, however, skillfully accomplished after one and one-half hour's labor. The lower edge was refreshed vertically; the upper one a little obliquely through the entire thickness of tissue.

The width of the wound thus produced was almost everywhere one centimetre; only in the middle, which corresponded to the termination of the cleft referred to in the anterior cervix uteri, was it five centimetres, which point caused us some mis-

givings about the success of the operation. Any other method, as by the use of the posterior lip or vaginal wall (kolpokleisis), would have destroyed the normal functions of the organs involved. After the bleeding had ceased, a catheter was introduced, when the fistule was found to be situated more on the right than on the left side. A piece of the root of the urethra being found to protrude over the lower freshened surface, was removed with scissors. According to the relation of the fistule to the catheter in the urethra, three sutures were inserted on the right and two on the left side.

After this was done there were small particles of tissue still found to protrude above the upper surface. They were also cut

FIGURE 8.



off with scissors. On adjusting the refreshed edges, it was clearly seen how nicely the upper diagonal surface was united parallel with the lower one, and how exact the union must necessarily be. The plate used for fastening the sutures was shaped as shown in figure 8, and slid down on the wires

to its proper position.

The plane in which the united borders were situated formed a depression in the middle of the line, and to make the plate conform, it had to be bent in a suitable manner. The line of union formed two curves, and the holes in the plate were made to correspond.

The insertion of the sutures and the preparation of the plate required three-fourths of an hour. A catheter was kept permanently in the bladder, and the patient remained dry and comfortable.

Bozeman having left Vienna, I removed the sutures July 29th. They had cut deeply, while the upper edge of the plate had caused ulceration to the extent of 2.5 centimetres. This proved how the upper edge of the plate protected the united wound against the retraction of the surrounding tissue. Per-

fect union had taken place. After keeping the catheter for several days longer in the bladder and washing the vagina with tepid water, the patient was allowed to leave the bed. After this she emptied the bladder spontaneously and remained perfectly well.

On August 18th, Dr Grünfeld examined the patient with the endoscope. He found on the top of the entire cicatrix a yellowish-white mucous band 2.3 millimetres broad, and in the vicinity of the wound the mucous membrane presented a more reddened appearance. This examination caused the woman no pain, and she left for her home on the same day.

Before concluding this article I deem it necessary to remark that the preparatory treatment requires the utmost care and circumspection, as it is not free from danger, as I have experienced myself in several cases. In one case, where the fistule existed but two months, and where I incised within ten days, there were already several projecting scars. The gradual dilatation progressed satisfactorily, but now symptoms of peritonitis appeared, and the whole treatment had to be suspended. It is proper to remark, however, that the patient was upon her feet, running up and down the stairs all the while, which may account for the unexpected result. Profiting by this experience, I now proceeded more cautiously. In another case pain was felt in the vicinity of the vagina, and I had to resume the use of smaller dilators.

The dangers incidental to the preparatory treatment are briefly these: In incising too boldly the peritoneal cavity or rectum may be injured. A finger, however, inserted into the rectum for guidance may greatly diminish this danger. By proceeding too rapidly inflammation of the surrounding tissues, as well as of the peritoneum, may follow. It must therefore be borne in mind, that in order to secure the best results from preparatory treatment in such cases as are here described, time is of no consideration.

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