BRIGGS (Wm T.)

EXTRACT FROM A REPORT

ON THE HISTORY OF

THE SURGERY OF TENNESSEE,

COMPRISING THE SUBJECTS OF

Stone in Bladder, Ovarian Tumors, Vesico-Vaginal Fistula.

MADE TO THE

TENNESSEE STATE MEDICAL SOCIETY, APRIL 3, 1872,

BY

WM. T. BRIGGS, M. D.,

Professor of the Principles and Practice of Surgery in the Medical Department of the University of Nashville.

FROM THE

NASHVILLE JOURNAL OF MEDICINE AND SURGERY.

NASHVILLE, TENNESSEE:

PRINTED AT THE "UNION AND AMERICAN" BOOK AND JOB OFFICE.

1874.

URINARY CALCULI,

FROM THE CABINET OF DR. W. T. BRIGGS. (HALF SIZE.)

Photograph by SALTSMAN, Nashville, Tenn.

EXTRACT FROM A REPORT

ON THE HISTORY OF

THE SURGERY OF TENNESSEE,

COMPRISING THE SUBJECTS OF

Stone in Bladder, Ovarian Tumors, Vesico-Vaginal Fistula.

MADE TO THE

TENNESSEE STATE MEDICAL SOCIETY, APRIL 3, 1872,

BY

WM. T. BRIGGS, M. D.,

Professor of the Principles and Practice of Surgery in the Medical Department of the University of Nashville.

FROM THE

NASHVILLE JOURNAL OF MEDICINE AND SURGERY.

NASHVILLE, TENNESSEE:
PRINTED AT THE "UNION AND AMERICAN" BOOK AND JOB OFFICE.
1874.

REPORT ON TENNESSEE SURGERY.

BY W. T. BRIGGS, M. D.,

Professor of the Principles and Practice of Surgery, in the Medical Department of the University of Nashville.

PUBLISHED BY ORDER OF THE SOCIETY.

Mr. President, and Gentlemen of the State Medical Society:

At your regular meeting, in 1870, I was appointed to prepare a History of the Surgery of Tennessee. The task was cheerfully accepted, though, it must be confessed, with but a faint conception of the many difficulties to be overcome in procuring the necessary data.

In pursuance of this object, circular letters were prepared, and sent to every physician in the State whose address could be procured, appealing to each one for a report of the history of such surgical diseases and operations as may have occurred in his own practice, and, when possible, for an account of those of deceased or retired physicians, hoping that, as the area composing this now great and populous State was, not a century ago, a vast wilderness, it might yet be possible to place on record a complete history of, at least, the more important Surgery since its first settlement. The great majority of those addressed have, thus far, failed to respond. The cause of so general a failure, on the part of the profession, to answer, cannot be easily understood. The importance of the subject should certainly have commanded their attention. This indisposition to comply with my request, was due, in all

probability, to that carelessness and modesty which is so generally characteristic of the profession.

By reference to the Proceedings of the Society for 1851, it will be seen that a Committee, consisting of Drs. Avent of Murfreesboro', Lipscombe of Shelbyville, and Robards of Memphis, was appointed to make a report upon the Operative Surgery of Tennessee. This Committee has never reported, and it is to be presumed their non-performance of this duty is to be ascribed to the many difficulties, similar in character to those which I have encountered.

The history of the early Surgery of Tennessee is pretty well lost. This may be, in the main, attributed to the fact that the physician of the early times not only performed the duties incident to the practice of medicine, but also did the surgery which chance threw in his way—the physician and surgeon being merged in one individual, styled "Doctor." The Doctor being constantly and actively engaged in the laborious duties of his profession, kept no special record of his surgical cases, so that the history of surgery died with him.

At that time, a great portion of what may be properly termed chronic surgery, sought relief outside of the State, from surgeons who had acquired celebrity. Dudley, of Kentucky, received a large share of it. McDowell, of ovariotomy fame, met with his due proportion, as well as many other surgeons of distinction. In fact, they oftentimes made professional visits to our State. Dr. Dudley exsected a mammary gland from a lady near Nashville. Dr. McDowell performed ovariotomy near the Hermitage. Prof. Nathaniel Smith, of Baltimore, visited Columbia for the purpose of removing, and did remove, a large tumor from the person of a lady in that town, and during the same visit to our State, operated for strabismus upon the late Gen. R. C. Foster 3rd—probably the first operation of the kind performed in Tennessee.

In later years, Prof. Sam. D. Gross made two professional visits to our State—one to Williamson County, and the other to Nashville. During the latter he performed, upon the person of

the late George W. Martin, the brilliant operation of trephining the sacrum, for the purpose of extracting a ball which he supposed was resting upon the face of that bone. It was a splendid operation, but failed, by reason of error in diagnosis; the ball was not where he supposed it to be.

From what has been said, I would not have the Society to believe that our State could not boast of surgeons at that time. I need only mention the names of O'Reiley, of Maury County; Wallace Estell, of Winchester; William Bonner, of Fayetteville; Lipscombe, of Shelbyville; Watson and Avent, of Murfreesboro'; Deaderick, of Athens; and Buchanan, of Nashville. I know that you, gentlemen, will pardon me for paying special tribute to the memory of him who, for many years, was the body and soul of this Society. Tennessee can well be proud of Buchanan. The Medical profession cannot boast of a more profound thinker and more brilliant operator, than was the late A. H. Buchanan. In him was embodied both the physician and operator, without which combination no man can be a really great surgeon. He was the first in Tennessee to perform amputation at the hip-joint, which resulted in recovery. This is one among the many of his brilliant achievements. To the deep regret of those who were, by personal acquaintance, aware of his greatness, his extraordinary knowledge of surgical science was destined to die with him; for there was, during the most active period of his life, no journal in our State through which he could communicate, to his professional brethren, his daily experience; and for the same reason, a reputation, which ought to have been national, was confined to the limited sphere of his particular friends.

To return now to the thread of my history:

In 1850, the Medical Department of the University of Nashville was organized, and Prof. Paul F. Eve, our distinguished President, was called to the Chair of Surgery. Professor Eve even then enjoyed a national reputation; he was the peer of any contemporary. Through the agency of his great name, which was familiar to every medical man in the entire South, surgical cases of all kinds were brought, not only from our

own State, but from every Southern State, to Nashville; and as a result, this city has become a great surgical centre. Since his advent amongst us, no city can boast of a greater number of important surgical operations.

The improvement in surgery was not confined to our capital. The impetus received by the establishment of a Medical College in our midst, was reflected throughout the entire State, and not one, of the size and population of ours, can now boast of a greater number of excellent surgeons.

While regretting my inability, from the causes mentioned, to make such a report as all would have desired, I beg leave to submit the following, on a few special subjects, which I am persuaded will contain nearly all the information that it is possible to obtain.

I would return my thanks to those who have furnished me with communications, and especially to Dr. F. K. Bailey, of Knoxville, and Dr. J. S. Poyner, formerly of Smyrna, but now of Nashville, who have so materially assisted me.

The first subject to which I will call your attention is

STONE IN THE BLADDER.

It is well known that calculous affections are more prevalent in Ohio, Kentucky, Tennessee, and Alabama, than in any other portion of the United States. They are as frequent in Tennessee as in either of the States mentioned, if not more so. The cause has not been ascertained. All attempts to trace them directly to the effects of climate, habits of peoples, food and water, &c., have proved unsatisfactory. It has been generally believed that their formation was favored by the strong limestone water which abounds in these States. It would seem reasonable to suppose that water, strongly impregnated with lime, constantly drank, would, by the changes induced in the renal secretions, favor the deposition of calculous matter; but it is a fact that a considerable number of stone cases occur in the freestone districts—so large a number, indeed, as to show that some other reason must be sought to account for their prevalence.

It has been supposed that there was some peculiarity of climate in our State by which calculous affections were increased in frequency. It is true that our climate is very variable,—especially in the winter season, it is subject to great and rapid changes; and withal, the atmosphere is very moist a greater part of this time. The clothing of our people, especially the poorer classes, is often insufficient to guard the body from the great and rapid changes to which they are exposed. These do have more or less influence.

By some, too, it has been attributed to the food we eat. People who are in affluent circumstances, or those of moderate means, have an abundance of the best kind of food obtainable from any part of the world. Even persons in the lower walks of life have a plenty of plain wholesome food. There may be, and doubtless is, some fault in the manner of cooking food, and more in the manner of eating it—most persons taking it very hot, and bolting it without mastication.

These causes, no doubt, have some effect in increasing the tendency to calculous disease. There can be no question that the proximate cause in the origin of calculus is a disturbance in the normal relations of the constituents of the urine. Anything that disturbs those relations, will favor deposits in the urinary passages; climate, food, water, and clothing, often indirectly bring about such disturbance.

But there is no cause which so frequently effects a change of the urine as derangement of the digestive organs. A weakened digestion, with an acid and flatulent state of the stomach, constipation of the bowels, and an irritable condition of the nervous system, cannot, by any means, produce healthy blood; nor can an unhealthy state of the blood produce healthy urine. Any influence, therefore, which can affect the digestion, in the proper solution of the food, its normal absorption and assimilation, will act as a predisposing cause in the formation of calculus. In proof of this, it is well known that a large proportion of calculous affections are met with in children from two to six years of age; and even when met with in those of maturer years, it is highly probable that the formation commenced

at an early age. At that age, the chylopoetic viscera are very much damaged by the process of dentition, and just such a condition brought about that is most favorable to the formation of stone.

No stronger proof is necessary to show the close connection between this disease and the particular condition of the digestive organs, than that which is so frequently observed during the treatment preparatory to the operation for the removal of the calculus. Patients are often so relieved of all sufferings by the administration of remedies for the purpose of regulating the digestive functions and preparing them for operation, as to believe that they are cured, and are willing to abandon the operation, until they are warned, by another attack, that such relief is only temporary.

It is my opinion that stone in the bladder is more prevalent in our State, and in the others mentioned, for the reason that there are more, or a greater combination of causes present, to derange the chylopoetic viscera, and through them the urinary secretion, whether they consist in the peculiar habits of our people, their food, dress, &c., or in the peculiar nature of our climate, or in the character of the water they drink, or of all combined.

The early history of this special disease, and the operations for its relief, like the early history of the surgery of the State, is unknown. If any operations for the removal of stone were done in very early times, I have been unable to obtain an account of them. The probabilities are, that all cases demanding operation were sent off to other States. In fact, the first operation of which I can gain any knowledge, was that performed on James K. Polk, then a resident of Maury County, who, in the autumn of 1812, sought the skill of Dr. Ephraim McDowell, of Danville, Kentucky, for the relief of calculus of the bladder. Little did the great surgeon dream that the poor suffering lad, upon whom he was exerting his consummate skill, would become the accomplished scholar, the great statesman, and the President of the United States.

Many calculous patients of our State, as well as those of the whole South, were attracted by the brilliant success of Dr. Dudley, of Lexington, Kentucky; and possibly the celebrated surgeons of other States may have operated upon some of our people.

The first operation of lithotomy in Tennessee, of which I can gain any knowledge, was done about 1812, by Dr. John O'Riley, a surgeon of marked ability, residing in Maury County. Between 1812 and 1820 he performed the operation five times.

Dr. John H. Ray, of Smith County, was probably the next who resorted to lithotomy. His patient, a little boy, aged 9 years, lived in Alexandria, then in Smith, but since in De Kalb County. The operation was performed in 1826. In 1834 he again performed the operation on a man in Sumner County. The operation was successful in both cases.

Dr. Wallace Estill, the "mountain surgeon," who for many years resided in Winchester, Franklin County, was distinguished as a lithotomist. He performed the operation fifteen times, with but one death.

Dr. Wm. Bonner, of Fayetteville, was also noted as a lithotomist in early times.

I have been able to gather the partial history of two hundred and fifty-nine cases, in which stone has been removed from the bladder by different surgeons of our State—(doubtless many other operations have been done)—as follows:

	NUMBER OF CASES.	SUCCESSFUL.	UNSUCCESSFUL.
Dr. O'Riley	5	4	1
Dr. Wallace Estill	15	14	1
Dr. William Bonner	18	0	0
Prof. J. M. Watson	2	2	0
Dr. John Waters	4	3	1
Dr. Esselman	1	1	0
Dr. R. C. K. Martin	1	1	0
Prof. R. M. Porter	2	2	0

	NUMBER OF CASES.	SUCCESSFUL.	UNSUCCESSFUL.
Prof. B. W. Avent	15?	—	Unknown.
Prof. A. H. Buchanan	15	14	1
Prof. D. W. Yandel	*10	9	1
Dr. Franklin	3	3	0
Dr. W. M. Gentry	2	1	1
Dr. S. S. Mayfield	1	1	0
Dr. Pierce	1	1	0
Dr. DeBow	3	3	0
Dr. W. C. Rogers	9	8	1
Dr. J. R. Buist	2	1	Ret'd in 6 mos.
D. Cunningham	4	3	1
Prof. P. F. Eve	†80	71	9
Dr. W. T. Briggs	60	56	4
Dr. T. L. Maddin	3	3	0
Dr. J. H. Ray	2	2	0
Dr. Jetton	1	1	0

Tennessee alone furnishes the cases to all the surgeons above mentioned, except Prof. Eve and the writer.

Of Prof. Eve's cases,

Tennessee furnished	46
Georgia "	10
South Carolina "	3
Mississippi "	6
Alabama "	6
Kentucky "	5
Missouri "	2
New York "	1
North Carolina "	1

* Prof. D. W. Yandel, who performed his ten operations while residing in Tennessee, kindly furnished me a full history of his cases, which I unfortunately placed away so securely that I have been unable to find it.

† This includes only the cases of Dr. Eve since his residence in Tennessee. He has operated, altogether, one hundred times.

Of Dr. Briggs' cases,

Tennessee furnished	.....	42
Kentucky "	.....	12
Alabama "	.....	3
Mississippi "	.....	2
Georgia "	.....	1

SEXES.

	MALES.	FEMALES.
Dr. Eve's cases	77	3
Dr. DeBow's cases	2	1
Dr. Briggs' cases	57	3
Dr. Wm. Bonner's cases.....	16	2

The cases of all the other surgeons were males, I suppose.

AGES.

Dr. Eve's cases—

Under 5 years	10
Between 5 and 15 years	30
Between 15 and 30	24
Between 30 and 50	8
Over 50	8

His youngest patient was 2½, his oldest 77 years.

The cases of Dr. Rogers, of Memphis—

Under 5 years	0
Between 5 and 15	7
Between 30 and 50	2

The cases of Dr. DeBow, of Hartsville—

Under 5 years	0
Between 5 and 10	1
Between 30 and 50	2

Dr. Briggs' cases—

Under 5 years	10
Between 5 and 15	25
Between 15 and 30	12
Between 30 and 50	10
Over 50	3

His youngest patient was a son of Mr. Jordan, of Dickson County, eighteen months old; his oldest was Col. Hancock, of Maury County, aged 72 years.

RACES.

Of the races, a large proportion of patients were white. However, the writer can only speak with certainty of Prof. Eve's, Prof. Buchanan's, and his own.

In Dr. Eve's practice, in the 100 cases operated on here and in Augusta, were as follows, viz.:

Whites	88
Blacks	6
Mixed	6

In Prof. Buchanan's practice—

Whites	14
Blacks	1

In Dr. Briggs' practice—

Whites	57
Blacks	3

METHOD OF OPERATION.

It will be seen that, in a very large majority of cases, the removal of stone has been by the cutting operation. Thus, of the 259 cases reported—

Lithotomy was resorted to in	250
Lithotrity "	9

Of the Lithotomy operations,
The lateral was performed 112 times—
78 with Physick's gorget,
34 with the scalpel.

Of these, the following made the incision in the neck of bladder, with gorget:

Dr. O'Riley	5
" Estell	15
" Bonner	17
" Watson	2
" Avent	15
" Buchanan	15
" DeBow	3
" Waters	4
" Esselman	1
Prof. Eve	1

The following made the sections with the scalpel, viz.:

Prof. Eve	1
Prof. Porter	2
Dr. R. C. K. Martin	1
" D. W. Yandel	10
" W. M. Gentry	2
" Mayfield	1
" Rogers	9
" Buist	1
" Cunningham	4
" Ray	2
" Jetton	1

The Bilateral, with the Lithotome-Caché, was performed as follows, viz.:

Prof. Eve	73
Dr. Franklin	3
Dr. Briggs	45

The Supra Pubic operation was performed in two cases by Prof. Eve.

The Median was performed by Dr. Briggs in four cases.

The Medio-Bilateral, in ten cases, as follows, viz.:

Dr. Pearce	1
Dr. Briggs	9

In the females operated on—nine in number—the vesico-vaginal section was made—by

Dr. Eve, in	2 cases.	Successful.
Dr. Briggs	1 case.	Successful.

The lateral was made by

Dr. DeBow, in	1 case.	Successful.
Dr. Bonner	2 cases.	Successful.

The bilateral was resorted to by

Dr. Eve, in	2 cases.	Successful.
Dr. Briggs	2 cases.	Successful.

RESULT.

It has been impossible to obtain the result of many of the operations performed. I will, therefore, only refer to those in which I have positive knowledge:

	CASES.	SUCCESSFUL.	UNSUCCESSFUL.
Lateral operation	97	87	10
Bilateral operation	121	110	11
Median	4	4	0
Medio-Bilateral	10	10	0
High, or Supra-pubic	2	1	1
Vesico-vaginal	3	3	0

NUMBER OF CALCULI.

I have been unable to obtain data in regard to the number of stones removed, except in Dr. Eve's practice, and my own.

In Dr. Eve's collection, since his residence in our State, are one hundred and sixty-three (163) of which

1 case furnished	58
1 " "	18
1 " "	17
2 cases (triple)	6
4 cases (double)	8
61 cases (single)	61

In Dr. Briggs' collection are seventy-four (74), of which

1 case furnished	13
1 " "	3
1 " "	2
55 cases "	55

1 case calculous deposit.

1 case lithotrity (debris not preserved).

CHEMICAL PROPERTIES.

In the collection of Prof. Eve, as well as in that of the writer, are found the alternating, oxalate of lime, uric, ammoniaco-magnesian, phosphatic, and the cystic oxide calculus.

The alternating calculi are more numerous than any other variety, the nucleus being uric acid or oxalate of lime, variously coated and alternated. The last covering is always phosphatic.

The oxalate of lime or mulberry is the next in frequency. There are some beautiful specimens of this variety in the cabinet of Prof. Eve, as there are in that of the writer.

There are a few specimens of pure uric calculus among our stones.

The triple phosphates form a fair proportion. The mixed phosphates are very few in number.

There are but two or three specimens of the cystic oxyde in both collections.

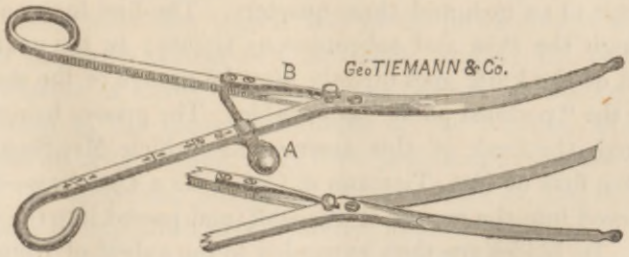
In almost every case that has come under my observation, the calculous disease has been accompanied with great chylopœtic derangement, in addition to the urinary disturbance, and I have followed the advice given by the great Dudley, in regard to the preparation of the system before a resort to operation. I have not, however, adhered to his special plan for their preparation. The preparatory treatment to which I have subjected my patients was such as would restore the general health, and allay local irritation. Under the effects of remedies, as elsewhere stated, patients are often so relieved that they are almost willing to believe that they are cured, but they are then just ready for the knife. And if their health is not improved, and their suffering mitigated, by treatment, I am always inclined to believe some serious organic disease is in progress, and am unwilling to operate. For these reasons I have declined to operate on five patients affected with calculus. In all of these death ensued in a short time. And although the per centum of deaths in my operations has been but one in fifteen, I think if I had had some of the patients who died, under my immediate care, prior to the operation, the mortality might have been even less.

The writer having been educated in the school of Dudley, had strong predilections for the lateral operation with the gorget, but after witnessing the beautiful operations of Prof. Eve, he adopted the bilateral, and continued to employ it until within the last three or four years, during which time he has, for small stones, employed the median, and for larger ones the medio-bilateral. To claim special success for any particular method, because of that method, I think is wrong. Much more depends on the condition of the case at the time of the

operation. If the patient is well prepared, even a badly executed operation will often succeed; and if his system is in bad condition, the most brilliant operation will often end in death. There is no operation in which the result is more dependent on the thorough preparation of the patient. Besides, every case should be carefully and critically examined, and that operation adopted which is best suited to the particular case. If the stone is large, more especially if accompanied with great pathological changes in the bladder, the effect of long-continued irritation, the lateral or bilateral will be best adapted; for, while they give a good opening for the extraction of the stone, they afford a free outlet for the urine, and the secretions of the bladder, to pass; by which the pathological changes in the bladder are entirely removed.

If the stone is small, the median is the best, for many reasons.

The medio-bilateral—a modification of the median, as its name indicates—is best suited for the removal of good-sized, or even large calculi, and is the one I have adopted for the last two or three years. It has answered my expectations so fully that I know you will pardon me for exhibiting an instrument which I have had made for this special operation, and for detailing the steps of the operation.



The instrument (see plate) consists of two blades, curved on the flat surface, and sharpened on the outer edges; one blade is half an inch longer than the other, and is probe-pointed, to fit in the groove of the staff. The blades are fastened at the

junction of the handles, with which they are continuous, by a movable pivot screw. The blades do not cross, as do those of scissors, but lie one upon the other, and are expanded to the desired extent, in making the incision, by closing the handle. The movable screw on one of the handles, marked A, regulates the extent of the expansion of the blades, and when placed on the numbers on the handle, shows the size, in lines and inches, of the incision made by that expansion. The spring on the other blade, marked B, holds the blades together during the passage of the instrument through the grooved staff into the bladder. The instrument measures, from the rings of the handle to its probed extremity, eight inches; its probed extremity is half an inch; its cutting-blades, three inches; its weight, 1½ ounces.

The patient having been properly prepared, and placed in the usual position, the grooved staff is passed into the bladder, made to touch the stone, and handed to an assistant, who is directed to draw it well up into the arch of the pubis; the surgeon seats himself on a low chair or stool, before the patient's perineum, and introduces his left index finger, well oiled, into the rectum; then, with a sharp-pointed straight bistoury, he makes an incision in the raphé of the perineum, commencing four lines from the margin of the anus, and continuing directly upward in the raphé to the extent of an inch and a quarter to an inch and three-quarters. The first incision goes through the skin and subcutaneous tissues; in the next, the point of the knife goes directly into the groove of the staff, as near the "perineal point" as possible. The groove being well cleared, the beak of this instrument—which Mr. Stohlman (of the firm of Geo. Tiemann & Co.) calls a *Cystotome*—is introduced into the groove of the staff, and passed into the bladder. Its blades are then expanded to the extent of from four to six lines, and withdrawn. The surgeon's finger follows its withdrawal, and is guided by the staff into the bladder, when the staff is removed. The finger should be used as a dilator, being turned around in the wound several times. A pair of thin forceps should then be passed along the finger into the bladder,

directly upon the stone, when it should be grasped and removed in the usual way.

The advantage of the above-described operation is its simplicity, the small liability of wounding the important parts on either side of the raphé, the absence of hemorrhage (frequently not a tablespoonful is lost), and lastly, the power the patient has of controlling the discharge of urine during the after treatment.

Before I leave the subject of lithotomy, I would call the attention of the Society to some interesting facts connected with its history.

In one of my cases—Mr. Stanley, of Kentucky—over a week from the date of the removal of a very large stone, a small stone passed from the kidney to the bladder, with great pain, and was discharged through the perineal wound before it had healed.

In another case, a negro boy belonging to Gen. Harding, two years after a successful operation and complete immunity from suffering, was seized with paroxysms of stone, which continued until an abscess formed in the cicatrix; in a few days the abscess broke, and the end of an oblong calculus protruded, and was expelled spontaneously, the mother of the boy refusing to allow me to remove it with the forceps.

In 1868, I operated on the son of Mr. Douglas, of Nashville, after satisfying myself and all the physicians present—ten or twelve in number—by the touch, and by the click, of the presence of stone; found no stone, but calcareous deposit, imbedded in the mucus membrane of the bladder, which I scraped off with a scoop. My little patient not only recovered from the operation, but from all symptoms of the disease. Dr. Eve's forty-ninth case is similar in most respects.

During the last winter, three cases of stone, aged respectively two, four, and five and a half years, were presented to our medical class, and sounded. The calculus was detected in each instance, and, singularly enough, was passed out by the efforts of the bladder in a few days after sounding, in each case.

In the *Nashville Journal of Medicine and Surgery*, vol. vii., page 101, I find the following unique and interesting case, reported by J. S. Dyer, M. D., one of our most distinguished physicians, now residing in Hartsville, Tennessee:

"In September, 1846, I was called to see Wm. Green, aged 9 years, of leuco-bilious temperament. On getting the history of his case, I learned that he had had difficulty in passing his urine from the age of three months, if not from his birth. He was suffering with all the symptoms common to urinary calculus.

"Being without instruments, I prepared a sound of common bucket wire, about four lines in diameter. Thus equipped, my partner, the late Dr. Jas. M. Jetton, and myself, set out to visit our patient, and explore the hidden recesses of his urinary bladder. On introducing the sound, we came in contact with the stone. Finding it very difficult to pass the sound under it, we feared it was encysted. The parents were very anxious to have the stone removed. Dr. Jetton had successfully performed some important operations. Emulous of professional eminence, and encouraged by myself and other friends, he determined on operating. For this purpose our friend Dr. F. H. Gordon, of Rome, was called to assist. He brought his lithotomy instruments, save the largest sized forceps, those being thought too large for the size of the pelvis.

"On the 10th of October, in the presence of a large crowd of neighbors and physicians, at 11 o'clock a. m., the operation was commenced by Dr. Jetton in the usual way of performing the lateral operation. Nothing unusual occurred, save a slight laceration of the urethra, causing it to bleed on introducing the grooved staff, until the bladder was entered and an attempt made to grasp and withdraw the stone. It proved to be too large for the forceps. When partially seized, the blades of the instrument would slip off. For a long time the doctor tried to grasp the stone, but with no other effect than to scrape off the soft external surface and punish the poor little sufferer. The stoutest hearts failed. The tear of sympathy was seen in the eyes of those who seldom wept.

"Fatigued and desponding, the doctor requested Dr. Gordon to take the seat and try to extract the stone. Dr. G. complied, and after two or three fruitless efforts to grasp the stone, he laid aside the forceps, and introduced the index finger to ascertain the shape and size of the calculus. Finding it uncommonly large, he raised it on the finger, so as to make it project the abdomen above the pubis, and show its full size to the crowd. It was about the size of a large turkey-egg, completely filling the cavity of the contracted bladder. Dr. G. then arose from the seat, and declared that no instrument present could remove the stone.

"A council was then held. Some urged that the operation ought to be suspended. But to leave him in this situation, death was inevitable. It would have been better to die under the operation, than to linger out a few more days of painful suffering. The fear of censure, the love of approbation, or benevolence to suffering humanity, urged a continuation of efforts. Dr. Gordon proposed to cleave the stone with the spindle of a common spinning-wheel, which was present. With that suggestion the writer was at once gratified, and convinced that the little sufferer might yet be relieved, and cordially urged its adoption.

"Dr. Jetton made further efforts to crush and extract the stone with the forceps. In the meantime the spindle was procured and prepared by Dr. Gordon, by filing the smaller end in the shape of a stone-cutter's chisel, and not perfectly sharp. The writer proposed it should be wedge-shaped, with a short bevel, and perfectly sharp, which was readily adopted; and Dr. G. soon reduced the instrument to that shape. He then placed the spindle and a hatchet on the table, saying to Dr. Jetton, 'Here are your instruments, and the only ones at hand capable of removing the stone.' Dr. Jetton feared that the instrument might puncture the bladder, or that the force requisite to cleave the stone might bruise and cause it to slough. It was insisted that both these accidents might be avoided, by grasping the spindle firmly around the whirl with the left hand, and resting it against the ischii of the boy, so that a

blow with the hatchet could force the spindle no farther than the approximation of the metacarpal bones of the hand would permit.

"Dr. Jetton now gave the plan a trial, and being much fatigued, requested Dr. Gordon to take the seat again, which he did. With severe pain to the boy, he succeeded, with the right index finger, in placing the long diameter of the stone at right angles with the incision; then having made a blow so as to imprint the edge of the little chisel across the stone, he always felt with the chisel, before each blow, for the cut he had made, and placed the chisel in it. In this way he clove the stone into two nearly equal parts, by means of *between fifty and one hundred heavy blows*. Introducing the largest forceps in the set, except one, he grasped one half of the stone, with both hands upon the handles, but could not crush it. Dr. Jetton then grasped the handles also; so that both of them grasped with all their power. After bending and straightening the handles several times, they succeeded in breaking the half of the calculus into several large fragments, which were still too large to be passed through the wound. Each fragment required great force to crush it, so hard was the stone. Drs. Jetton and Gordon thus continued to operate conjointly and alternately till the whole calculus was crushed and extracted. The fragments of this huge stone filled a common-sized teacup.

"Thus ended an operation commenced with a bucket-wire for a sound, and finished with a wheel-spindle. After sunset the little patient was put to bed, and an opiate administered. Visited next day, and found with some fever. On the following day, erysipelatous inflammation about the wound, which yielded readily to saturine lotions. Recovery rapid, but passed the urine and fœces through the wound, for the rectum proved to be injured. In a few days the fœces measurably ceased to pass by the wound, but the urine continued to pass through the fistulous opening that followed. No one thought he would recover. All rejoiced that he did not die under the operation. The fact that he had been inured to hardships and suffering

from infancy, must account for his extraordinary recuperative constitution. A boy raised on fine carpets and feather beds could not recover from such an operation. Yet Billy Green recovered. Yea, he not only recovered, but the fistulous opening healed; and twelve months after the operation, for the first time, he passed his urine per urethram.

"Just twelve months after the operation, I was called up by the boy's father, and told that his son was as bad off as ever—that 'he could neither pass his water by the cut nor the natural way.' Armed with a silver catheter, I set out to try to relieve my little friend. Arrived at day-break. Billy met me at the door.

"'Too late, Doctor; too late this time.'

"'Why, Billy?'

"'I've passed it already; I heard it rattle down on the leaves at the door.'

"'How, Bill?'

"'Why the old way.'

"In order to be certain that he was telling me the truth, he was placed on the bed, and the catheter introduced without any difficulty—two tablespoonsful of urine drawn off. The fistula was filled with a fibro-gelatinous substance.

"Three months after this I saw the boy frequently during two weeks, when passing his father's camp on the river. His health was good, though he complained of some hurting in the urethra when passing his urine. His father moved off. I have not heard from him since.

"This case has not been the means of fame to the operators, though it terminated so favorably under such unfavorable circumstances. Had the operation been performed in eight or ten minutes, instead of more than seven hours, the principal operators would have been lauded to the skies, whether the patient had ever been allowed to use his urethra or not."

In the winter of 1870, Prof. Eve presented to our class a patient, aged 9 years, from Rutherford County, with stone in bladder. The little fellow was pale and emaciated from long and constant suffering, and it was the opinion of nearly every one who saw him that he would die in a very short time. After a few days' preparatory treatment, the doctor, who never refuses the aid of surgery to any, if there is the slightest hope of success, performed the bilateral operation on him.

The incisions were quickly and neatly made, and the finger passed into the bladder, only to find a stone so large that it could not be brought out. The incisions were enlarged, and several attempts made to extract the calculus with forceps of different sizes and shapes, but they proved ineffectual. At length the stone was grasped by a pair of strong forceps, and, after two or three trials, was crushed into fragments, which were removed by forceps, the scoop, and the finger. The forceps and scoop were passed into the bladder not less than twenty-five or thirty times. The operation lasted over an hour. The patient had a slow, tedious recovery, but was finally well.

In August, 1868, the writer was called to Decherd, in Franklin County, to remove a stone from a patient of Dr. Anderson's.

The patient was a thin, delicate lad, about 12 years of age, who had suffered nearly all of his life. Upon introducing the staff, a very large stone was discovered. The bilateral operation was at once performed. When the finger was introduced into the viscus, it was found that the calculus literally filled it, and it was with great difficulty that the blades of the forceps could be passed between the walls of the bladder and the stone. Without delay, I crushed the calculus into as many fragments as possible (fortunately the stone was soft), and occupied myself for half an hour in picking out the pieces. After the bladder was cleared and washed out, the patient was put to bed, none the worse for the prolonged operation.

He recovered without a bad symptom, although his rectum was wounded, doubtless by the sharp edges of some of the fragments, as there was no opening from the incision. The opening in the rectum was of no consequence, as it healed up in a few days.

The pieces of calculus, when collected, (many were lost), weighed about five ounces.

The most difficult and embarrassing operation ever performed by myself was on Col. H——, of Maury County. The Colonel was seventy-two years of age, six feet one inch in height, and weighed between two and three hundred pounds. He had suffered many years with calculus, and determined to be relieved of it by operation, at all hazards.

I visited him at his home, and performed the bilateral operation. So deep was his perineum, that it was found impossible to reach the bladder with the finger, and the forceps could not be used with success for the same reason. Fortunately, a lithotrite was among my instruments, with which, after thirty or forty introductions, I removed thirteen stones, each about the size of a partridge's egg. On the day following the operation the patient was doing well. In a few days, however, he began to decline, and died, in eight or ten days, of prostration.

A *post mortem* examination, made by his physicians, revealed the fact that no calculus was left in the bladder, which was free from inflammation, though its walls were much thickened, and it had formed extensive adhesions to the walls of the lower part of the abdomen, by which it was drawn away from the perineum.

I have never had hemorrhage to occur to such an extent as to demand the tampon, or other means, except in one instance.

In the fall of 1868, I was called to Mr. O——, of Blount County, East Tennessee, and performed the bilateral operation on Friday, the —— day of September. The operation was quickly done, and a large stone removed. In a short time af-

terwards it was found that blood was issuing too freely from the wound—not per saltum, but in a steady continuous stream. Upon examination, the blood was seen to escape from a number of points. The tampon was used in the customary manner. The hemorrhage was checked, and the urine escaped through the catheter.

The day following the patient was doing very well, having slept nearly all night. I learned afterwards, from his attending physician, who had himself performed lithotomy several times successfully, that on the Tuesday or Wednesday following, upon withdrawing the tampon, the hemorrhage returned, and the patient died in a short time.

In this case there was doubtless some abnormal distribution of vessels about the neck of bladder.

LITHOTRITY.

It may seem strange that, in speaking of the operative treatment of calculus, so little mention has been made of lithotrity. The removal of stone from the bladder, by a comparatively painless operation, without injury to the bladder or other soft parts, is a surgical feat which cannot be too highly commended; and it is, without doubt, the duty of the surgeon to make himself familiar with the practice both of lithotomy and lithotrity, and to adopt the one which promises the best in the particular instance with which he has to do. In determining this point, it is necessary to ascertain those circumstances which influence the result in each case. After an examination into the condition and surroundings of stone-patients in our State, it will not be astonishing to those who understand the subject, that so few have been submitted to the crushing process.

In the first place, a large majority of calculous patients are children, under ten years of age. With these, lithotomy is so successful an operation, that the surgeon would gain nothing by substituting lithotrity for it, even if there were no difficulties in the latter mode of operation with this class of patients. In the second place, when stone exist in the adult, application for relief is seldom made until the stone has become very large, the bladder inflamed and irritable, and the general system prostrated and shattered—circumstances which are not favorable to the crushing operation.

Thirdly, when a case presents, which is well suited for the crushing operation, it often happens that the patient's circumstances are such that he cannot spend the time necessary for the repeated sittings.

And lastly, our stones are often so hard that they are not well adapted for crushing.

The number of cases operated on by Lithotrity are as follows:

	AGE.	NUMBER OF SITTINGS.	RESULT.
Prof. Eve	20	—	Recovery.
Prof. Eve	30	1	"
Prof. Eve	38	20	"
Prof. Buchanan	65	3	"
Prof. Maddin	38	—	"
Prof. Maddin	32	—	"
Prof. Maddin	40	—	"
Dr. J. R. Buist	28	38	"
Dr. Briggs	40	4	"

I attempted the operation in two other cases, but abandoned it, because the patients would not submit to the delay necessary. They were lithotomized successfully.

OVARIOTOMY.

Ovarian Tumors are of frequent occurrence in our State. Since his residence in Nashville, the writer has been consulted in fifty or sixty cases of the kind, and other physicians have met with equally as many. They were as numerous in the early settlement of the country, in proportion to the number of inhabitants, as at the present time; but so little was known of them, that they were seldom recognised. In fact, it is only recently that surgeons have been able to make out clear and satisfactory diagnoses in such cases. It is true that Dr. Ephraim McDowell did, with unerring certainty, make out the exact nature and the condition of these cysts, and upon his thorough knowledge of his cases, based his operations—the first of the kind in the world; but he was far in advance of the profession, not only in our country, but in that of the old world also. For when he reported some of his cases in the *Eclectic Repertory* of 1818, their correctness was doubted, both at home and abroad, and it was a long time before he received the proper credit.

It is somewhat surprising that his brilliant success as an ovariotomist, in a State so near to our own, had not induced some of our early physicians to attempt the removal of diseased ovaria. Such was not the case, however. Ovariotomy has been performed less often in Tennessee than any other capital operation. For a long time, a majority of the members of the profession everywhere believed it was so hazardous an operation, that it was unjustifiable; and since its recognition as a proper and legitimate procedure, the influence of several distinguished surgeons and obstetricians of our State, against it, is still felt. In fact, it is only in the last few years that patients, so afflicted, could be induced to entertain, for a moment, the proposition for their removal.

Many of the cases coming under the writer's observation were well suited to the operation for extirpation, and he was often anxious to give them the advantage of it. A large majority of the patients declined so slim a chance, as they thought, for recovery, preferring to risk themselves to nature's efforts. In a very large proportion of those which he could follow up and keep under surveillance, the result was death in a few years. A few struggled on, in suffering, for eight or ten years, but they were exceptional cases.

Such is the experience of all physicians. And yet, after a very careful inquiry, we can learn of not more than ten or twelve operations for the removal of ovarian tumors.

The first attempt at ovariotomy, in our State, was made by a distinguished and learned physician of our city, Dr. James Overton. In 1818, Dr. Overton removed from Lexington, Kentucky, where he had filled a professorial Chair in old Transylvania, to Nashville. His enthusiasm had been greatly excited by the brilliant operations of the renowned Dudley, but more especially by the then new operations of Dr. Eph. McDowell, of Danville, Kentucky, for the extirpation of enlarged ovaria. He was exceedingly anxious to obtain surgical celebrity in his new locality. It was not long before an opportunity presented itself, which, in his imagination, was to immortalize him as a surgeon.

He was called to a lady with an enormous abdominal tumor of eight months' standing, and after a careful examination, satisfied himself, and the family of the patient, that it was a case of ovarian tumor, and that nothing but slitting open the abdominal walls, and removing the diseased mass, offered any hope of relief; and as the lady had heard of the wonderful success of the Kentucky surgeon, she became anxious to be relieved.

Dr. Bowling, in a biographical sketch of Dr. Overton, in the *Nashville Journal of Medicine and Surgery*, describes the operation and its results, in his inimitable way, as follows. (It should be premised that the patient lived nine or ten miles from Nashville):

"Early on a bright June day, in the year 1818, (a year memorable in Nashville annals as witnessing the arrival of the first steamboat), a solitary horseman might have been seen emerging from the little city in the direction of the city ferry. At Haysborough, seven miles above Nashville, long a powerful rival of 'the town below,' but long since defunct, the horseman drew up at a hotel, ordered breakfast, and that his steed should be bated.

"While breakfast was being prepared, the traveller stepped across the street to a physician's office, and, finding the doctor in, introduced himself as Dr. Overton, mentioned the character of the operation he was to perform that day in the neighborhood, and politely invited the medical gentleman to 'be present.' The invitation was cordially accepted, and after breakfast the twain proceeded to the house of the patient.

"There was a large apple-orchard near the house, and to each tree a half-dozen horses were fastened, some bearing men's saddles, some women's saddles, and some, of less lofty pretensions, compromising with an untanned sheep-skin, fixed to their backs by a red cirsingle, while not a few were nude, save a rope halter, necessary for 'safe bind, safe find.' The medical gentlemen, dismounting, were vainly looking for a hitching point, when a laughing negro approached in a trot, and relieved them of their charge, stating that 'white folks told him to take the *doctors*' horses to the stable.'

"Dr. Overton was elaborately dressed, and, along with the French language, had acquired a good deal of French politeness. The large yard in front of the dwelling was densely crowded with men, women, and children, with not a few friendly curs, who, having no affairs of their own, are always busying themselves with those of other *folks*. Dr. Overton, uncovered, but holding his polished hat against his left shoulder with gloved hand, that all the world might bear witness that he *had* a hat, made his way through the dense crowd, which instinctively shrank into smaller compass to make way for him, bowing and smiling right and left, as he advanced, which salutation not being directed to any one in

particular, each threw himself on his reserved rights and returned it with a stare. Such were the shadows of coming events.

"Within sat the anxious patient, holding within her that which was destined to make her surgeon immortal. The operating table, cushioned and pillowed, and garnished with napkins and sponges and bowls of water, for the convenience of light and spectators, was placed in a large piazza, and near it a small stand sparkled and glittered with unfleshed instruments, like a casket of rubies.

"The patient being placed upon the table, and all things ready, the crowd gazing in agony of expectation, the surgeon selected a burnished scalpel, (his hand being ungloved for the occasion), and holding it between the sun and his eye, said to his assistant, in an under-tone, 'To hold it like a pen is axiomatic; it gives the digital apparatus perfect control of it. In its achievements, indeed, it may be compared to a pen. That little instrument, controlled in its movements by genius and cultivation, secures immortality. But it is either posthumous, or dimly mingles with the lengthened shadows of the sun-set of life. This, under the guidance of science, secures it in the fresh morning of existence.'

"An assistant being now appointed for each extremity, and the patient exhorted to be firm and courageous, the surgeon proceeded dexterously to divide the integuments from the umbilicus to the symphysis pubis. A few more strokes of the scalpel in the direction of the linea alba exposed the surface of the enormous tumor. It was remarkably smooth and polished, and there were noticeable irregular movements in it, difficult, at first, to account for.

"'Better not go on,' said the assistant.

"The wound was closed with sutures and adhesive strips, 'and a compress and bandage completed the dressing,' as surgeons say.

"About 3 o'clock p. m., on that same bright June day, *two* horsemen might have been seen threading their way, tandem, through an unbroken forest, in the direction of Haysborough.

Not a word had been spoken since they mounted their horses, though several miles had been passed over. Overton was the first to break silence. 'Doctor,' said he, 'did you never notice that every thing, as well as diseases, runs in families? Now this woman's father was always being tricked, or tricking some one else. Staggering about through fields, behind his forked stick, or divining rod, looking for mineral water, and gold and silver mines, and finding nothing but disappointment. And here is the daughter, with a stout husband, and the mother of three children, such an infernal fool as not to know that she was with child, but deliberately turns herself up to be split open in the gaze of the multitude. The whole seed, breed, and generation of them, are tricksters all; and now they have played me a h—— of a trick. Do you suppose Haysborough would support a lawyer? Nashville is as full as a tick of attorneys and counsellors; and preaching, even if one could hold his tongue between sermons, won't pay.'

"This unfortunate case terminated Dr. Overton's career as a medical man. 'I did not,' said he to the author, 'retire from the practice; I was victorious even in defeat. The practice retired from me, and left me in triumphant possession of the field.'

"He always insisted, moreover, that his operation conferred a great boon upon science, but that the medical asses of his generation were too stupid to avail themselves of it. That before his operation, obstetricians were perplexed to determine the quantum of force yielded by the abdominal muscles in the parturient effort; 'Now,' said he, 'my patient was delivered of a healthy, living child, a few days after the operation, by the uterine effort alone, for as to the abdominal muscles in that case, it is very clear that *I had fixed them for slow traveling.*'"

It is well enough to state that the patient recovered perfectly, and named the child after the intrepid surgeon.

This is not the only case in which such a mistake has been made. I learned from a medical friend that a surgeon of a neighboring State, who prided himself on having made twen-

ty-five ovariotomies, had made just such an error as Dr. Overton did—he exposed the tumor (uterine, instead of ovarian), and actually plunged a large trocar into the organ. Nothing but a stream of bloody water escaped. Recognizing his mistake, he filled the opening in the uterine tumor with a piece of sponge, and closed the abdominal walls over it. The lady gave birth to a dead child the next morning, and died on the second day afterwards.

The first operation of ovariotomy performed in Tennessee was done by Dr. McDowell himself, in 1832, on the person of Mrs. Overton (a relative of the Doctor), whose husband resided near the Hermitage. The operation was eminently successful, the patient living many years afterwards in the enjoyment of good health.

It is said that Dr. McDowell had agreed to come to Mr. Overton's residence, perform the operation, and remain with the patient as long as necessary, for the sum of five hundred dollars. When the Doctor was about to leave, Mr. O. gave him a check, which he took, without noticing it particularly. Upon presenting it at one of the banks in Nashville, fifteen hundred, instead of five hundred dollars, was handed him. Thinking it was a mistake, the Doctor sent his servant back to Mr. Overton's residence to have the check corrected. But Mr. O. sent him word that it was not a mistake—that his services were richly worth that amount, together with his lifetime *gratitude*. How seldom is it, at the present day, that the heart of the surgeon is gladdened by such a recognition of his services.

The next ovariotomy, so far as can be learned, was done by the writer, on a negro woman belonging to Mr. Radcliffe, of Nashville, in the fall of 1857. The case was reported in the *Nashville Journal of Medicine and Surgery*, and, on account of its interest, is copied in full in this report:

"Harriet, a small and delicate looking negress, about 38 years of age, the mother of several children, had suffered from ute-

rine distress for a number of years, supposed by her mistress and herself to be prolapsus uteri, for the relief of which I was requested to visit her in July last (1857). I found her debilitated, and considerably emaciated, with indigestion and constipated bowels; and when actions were procured, they were attended with great pain. Micturition was impossible, unless the finger was introduced into the vagina for the purpose of pushing the uterus out of the way. She had constant bearing pains and uneasiness through the pelvis. She stated that her menstrual secretions had been regular, but attended with an aggravation of all her symptoms, and she was confined to her bed for four or five days at each period.

"An examination per vaginam revealed the uterus situated at the os externum; its os and cervix apparently healthy; body and fundus free and movable. Posterior to the uterus, and filling up the whole recto-vaginal cul de sac, was a hard globular tumor, almost as large as a fœtal head, and to the touch resembling it very closely. It was firmly impacted in the pelvis, but could be pressed up slightly by the finger; it could be felt above the pelvis, in the left iliac region, about the size of a cocoanut. From a careful examination, I learned that it was not connected with the uterus; in fact, the uterus could be pressed out of the vagina, and the finger passed over its whole surface, between it and the tumor. My diagnosis was a fibrous tumor, originating from the left ovary, and from its pressure on the surrounding parts, giving rise to all the suffering she had endured.

"A few days subsequent to my examination, she was visited by Professor Watson, who, after a close examination, fully concurred with me in the diagnosis, and coincided in the opinion that nothing but an operation offered any prospect of cure; but in view of the hot weather, it was thought best to postpone the operation, and in the meantime to attempt to improve her general health by appropriate constitutional treatment.

"About the first of October we again met, Professors Eve and Bowling having been added to the consultation. Our pa-

tient had improved somewhat in her general health, but the tumor had made considerable progress. It could now be seen and felt, mounting up into the abdomen, and had encroached so far upon the vagina that the uterus was thrust entirely from that cavity, and had almost blocked up the urethra and rectum. The result of the consultation was a confirmation of previous opinions.

"Having explained the nature of the case to her master, and to the patient, stating the utter impossibility of any relief except by a very doubtful and hazardous operation, with the possibility of her being cut off sooner if the operation were performed, after due deliberation, they concluded to have the operation.

"*October 15th*, 11 o'clock, A. M.—The temperature of the room having been brought to 80°, and everything in readiness, the patient, with great composure, took the position on the table, her shoulders supported by a pillow, and her feet resting on a chair. Anæsthesia having been induced by a mixture of ether and chloroform, I proceeded to operate, assisted by Professors Eve and Watson, and Dr. Avent, of Murfreesboro, and in presence of a number of physicians and medical students. An incision, seven inches in length, was made directly through the linea alba into the abdominal cavity. One vessel of considerable size was wounded, but ceased to bleed before the ligature was applied. The patient making some involuntary movements just as the incision into the cavity was effected, caused a large mass of the bowels to escape; Prof. Eve secured and covered them with a warm cloth. The hand was passed into the cavity, to discover whether the tumor was adherent or free. Fortunately, it had formed no adhesions, except at its lower part, and these were easily broken up, and the tumor brought through the incision. The pedicle was two or three inches wide, and about one inch thick. Several large vessels could be felt pulsating in it. A needle, armed with a firm strong ligature, was passed through the pedicle, an inch and a half from the tumor, and firmly tied by Prof. Eve, after which the tumor was removed. No hemorrhage followed.

"After waiting a short time to see if any bleeding would occur, the stump of the pedicle was returned, and the ligatures brought out at the lower part of the wound. The bowels, after being gently sponged and cleared of all foreign matter, were replaced in the cavity of the abdomen, the wound brought together and retained by the interrupted sutures, placed about an inch apart, and supported by adhesive plaster and bandages.

"During the operation the pulse continued good, and no untoward symptom occurred. The anæsthesia, which had been profound, soon passed off, and our patient expressed herself as being comfortable.

"She was placed in bed, and one grain of sulph. morphia administered. Through the day she continued comfortable; had slight coldness and shivering, which soon passed off. Slight reaction in the evening; retention of urine; relieved by catheter; ordered one grain of morphine at bed-time.

"*October* 16, A. M.—Had passed a pleasant night; not much pain; some nausea; no soreness of abdomen; no swelling, and very little discharge from the incision; pulse 130; skin hot; no appetite; drew off 6 oz. of highly-colored urine. Ordered thin gruel for diet, warm fomentations to the abdomen, and continued the opiate.

"*Evening.*—In consequence of taking more opium than intended, she was partially narcotized during the day; pulse 130 to 140; but firm; no abdominal swelling; very little discharge from the incision. Drew off urine.

"*October* 17.—She continued to sleep through the whole night, but was easily aroused this morning. Since daylight she has been vomiting a greenish fluid; suffering pain in lower part of the abdomen; pulse very rapid; countenance anxious, and expressive of anguish; great tenderness of abdomen; limbs drawn up. Ordered calomel and opium through the day, and a large blister over whole abdomen.

"From this period she continued to grow worse, exhibiting all the signs of intense peritonitis, which resisted all our efforts, and on the evening of the fourth day she died. From the

time of the operation till her death, I had the constant advice and assistance of Professors Eve and Watson, each of whom visited the patient two or three times a day. In consequence of being called off early the next morning, I did not make a *post mortem* examination.

"The tumor was oval in shape, firm and hard in consistence, measuring seven inches in the long diameter, and four in the transverse; weight, six and a half pounds. At its upper part is the small portion of pedicle, having several large vessels passing through it. A section of the tumor presented the usual fibro-cartilaginous appearance, to which class of tumors it belonged."

Prof. T. L. Madden, in 1859, performed the operation on a lady from ———, Tennessee, in the Shelby College Hospital. The tumor was unilocular, with adhesions. The patient made a rapid recovery.

A surgeon from New York (name forgotten) visited a lady near Columbia, and extirpated an ovarian tumor in 1864. The patient died in a few moments after the operation was finished.

Mrs. M——, of Franklin, Tennessee, visited Boston in 1865, and was relieved of a large ovarian cyst by Dr. H. R. Storer. She returned to her home in a short time perfectly restored.

Mrs. A——, of Rutherford County, visited Louisville in the spring of 1864, and had an ovarian tumor extirpated by Prof. Henry Miller. She died on the third or fourth day, of peritonitis.

In 1866, the writer performed his second operation on Mrs. C——, of Carthage, Tennessee. Dr. W. D. Horton, who kindly watched the case, and kept accurate notes of it, furnishes the following report:

Mrs. McC——, Smith County, Tennessee, aged 41, married, never had children; has had tumor four years; general health not good.

The operation was performed on the 23rd of May, 1866, in presence of Drs. Eve, Buchanan, Maney, and Horton. Greatest circumference, thirty-eight inches. Pulse before the operation, 95; just after it, 110. The operation lasted forty minutes; the patient bore it well, being fully under the influence of sulphuric ether. A little brandy and water was given once, and repeated when she was removed from the table.

The incision extended from a point one and a half inches below the umbilicus to within two inches of the symphysis pubes. On opening the peritoneum, a large quantity—estimated at six quarts—of ascitic fluid escaped. A tumor about the size of a child's head was found on the left side, ruptured while breaking up some slight adhesions. Several quarts of dark gray gelatinous fluid escaped. This necessitated the opening out the abdominal cavity, which was carefully done. The sac was now pulled out, and its pedicle—the left broad ligament—transfixed with a needle, armed with double ligature, and each ligature, including half the pedicle, separately tied. The sac was then divided by scissors one inch above the ligatures. There being some hemorrhage, a second ligature was applied in the same manner as the first, but passed lower down.

Another tumor, nearly the same size, was now discovered on the right side. It was punctured, and the contents carefully evacuated; but there was more difficulty in drawing out the sac than was the case with the first, as the adhesions were much more extensive. After its adhesions were broken through, it was separated in the same manner as the first. The operation was now delayed some time by the hemorrhage which followed the rupture of the adhesions. After it had ceased, the two pedicles were drawn out of the lower part of the wound, and there fixed, by tying the ends of the ligatures over a director placed at right angles to the abdominal incision.

The edges of the wound were now brought together, and retained by silver sutures, and the usual dressings applied and retained by a flannel (many-tailed) bandage.

Shortly after she was put to bed, gave sulph. morphine gr. ss.

2 P. M.—two hours after the operation.—Has been dozing most of the time; pulse 115; pretty comfortable, but complains of slight soreness; slight oozing from wound. Morph. sulph., gr. ¼.

4.30 P. M.—Complaining of great pain. Gave morph. sulph. gr. ⅓.

9 P. M.—Severe pain and some nausea; gave morph. sulph. gr. ss. She vomited immediately, and felt great relief. The vomiting caused some flow of reddish fluid from the lower part of the wound. Pulse 126. Shortly after this she slept a little; on waking up she was free from pain; the pulse was stronger, also the voice, and she was quite cheerful.

A little before 12 P. m. the patient began to grow weaker, and the pulse rose to 145 beats. Gave ℥ss. of brandy.

At 12 o'clock drew ℥v. of urine, and at 6 drew ℥iii.

A half hour after 12 repeated the brandy; vomited again.

About 1 A. M., May 24th, there being no improvement in pulse, gave ℥iss. champagne, which she immediately ejected. Hypodermic injection of sol. morph. (Magendies), gtt. x., over epigastrium; became immediately quiet, and slept over three hours.

At 4.30 A. M. she became very restless; pulse 160, and very weak. Gave wine again, and she again vomited. Urine drawn, about ℥ii.

12 M.—Has been almost pulseless since daylight; extremities cold; face and neck covered with cold perspiration. Spt. ammon. aromat., in drachm doses, given three times every half hour; stopped on account of excessive vomiting. Beef tea and brandy every two hours, by rectum, which she retained. Mustard to epigastrium. But in spite of mustard frictions to extremities, hot bricks, hot cloths, &c., persistently applied, no symptom of reaction appeared. Urine drawn off at 11 A. M.—℥iss., dark and thick.

5 P. M.—Worse; respiration more rapid—thoracic—30 to the minute; has been drowsy, but is now quite restless; con-

tinued nausea and vomiting; has taken small bits of ice on stomach, which she calls for frequently—nothing else. Evidently sinking fast.

Died at 6.15 P. M.

Dr. McCullough, of Trenton, Tennessee, removed a large cyst (44lbs.) from a young lady of Gibson County, in 1870. The patient died in a short time.

Dr. Murfree, of Murfreesboro', operated on Mrs. C——, of Rutherford County, in 1871, and his patient recovered. He has kindly placed the report of the case at my disposal, as follows:

Mrs. Joseph B. C——, aged 30 years, of Wilson County, Tennessee, mother of two healthy children, came under my charge in the spring of 1871, for treatment for an abdominal tumor.

The tumor had been discovered about ten years previously, and had regularly increased in size. For the last few years, she had suffered greatly from its presence; its weight was annoying. There was slight disturbance of respiration, and constipated bowels; but above all, she suffered almost intolerable pain from spasmodic contractions of the intestines.

In the early formation of the tumor it was movable, and, by pressure with the hand, it could be made to readily glide from one side of the abdomen to the other. When she presented herself for examination, a large, hard tumor was felt on the right side of the abdomen, in the lumbar region, on a line extending from the umbilicus to the anterior superior spinous of the right ilium. It was about the size of an ordinary fœtal head, and entirely disconnected from the surrounding tissues. The tumor was hard, inelastic, and unconnected.

After a full and deliberate consultation by Drs. Crosthwait, Clayton, Fletcher, and myself, we unanimously concluded that the removal of the tumor was necessary.

The lady had suffered so much, and her general health was so much impaired, that she expressed her willingness to submit to any operation that offered a hope of relief.

On the 26th of June, 1871, with the assistance of the above named gentlemen, I performed the operation. An incision was made over the tumor, about six inches in length, in the direction of the fibres of external oblique muscle, through the skin and cellular tissue. The muscular fibres were separated with the handle of the bistoury, as far as was practicable, and the groove director was used when the parts required to be incised. This incision was very carefully and cautiously conducted, the patient being fully under the influence of chloroform. The peritoneum was raised upon the groove director, and divided. The omentum was gently pushed aside, which revealed the tumor, consisting of a cyst containing clear serum. The cyst was evacuated and destroyed.

Another cyst was detected, situated lower in the cavity, but was so far from the incision as not to be readily reached, and it was not deemed prudent to extend the incision.

The wound was now brought together by stitches carried through all the tissues, and its sides neatly co-adapted. Adhesive strips, extending several inches beyond the wound on both sides, were applied, and a soft compress and bandage completed the dressing.

The patient was put in bed, and readily recovered from the influence of the chloroform. She did well for the first two days, but on the third a diarrhœa took place, with some evidence of commencing peritonitis. On the fifth day, however, these symptoms subsided, and the patient began to recover. Suppuration was quite free. Cold-water dressing was applied continually after the third day.

The patient recovered well. The sutures were removed, the wound cicatrized, and in two months the patient returned to her home greatly improved.

In the fall, she, with her husband, removed to Illinois, traveling in a wagon. I heard from her during the month of February of this year (1871), at which time her health had greatly improved.

It is proper to state that there was an error in our diagnosis —for we were all satisfied that it was a fibrous tumor, and did

not expect to meet with a serous cyst. An exploring needle was passed into the tumor, but not penetrating the cyst, or from other causes, no serum escaped.

In December, 1871, I performed my first successful operation of ovariotomy. The following is the history of the case:

Mrs. W——, of McMinnville, Tennessee, a tall, well-formed lady, with fair complexion, light hair, and blue eyes, aged 28, married eleven years, without issue, consulted me early in the fall in reference to an enlargement of the abdomen. She had first noticed the swelling three years ago, at which time it gave rise to no uneasiness—was not tender nor painful. It gradually grew larger, but was still unaccompanied with pain or other distress, until within the last six months; since that time she has suffered very much from the pressure on the various organs; her general health, which had been perfect, was beginning to give way, and her menstruation, which has never been regular, returning every three weeks, was very painful, but not excessive.

Upon examination, I found the abdomen as large as at the full term of pregnancy, equally developed on both sides, smooth and uniform on its surface. By percussion, a distinct fluctuation was elicited, showing conclusively that the enlargement was composed chiefly of fluid. By it, also, it was discovered that the whole surface of the enlargement was dull, proving that the fluid was contained in a sac situated anterior to the bowels. In fact, the exact boundaries and position of the tumor could be traced out by percussion, showing that all of the lower and lateral parts of the cavity was occupied by the sac, and that it reached up to the transverse arch of the colon. By grasping the walls of the abdomen in the hand, they could be made to slide over the tumor. This, in conjunction with the fact that the patient had always enjoyed good health, has never had pain or tenderness in the abdomen, encouraged me in the hope that there were no adhesions. My diagnosis was, therefore, a unilocular ovarian cyst, free

from adhesion, and probably originating from the right ovarium.

Feeling perfectly confident in my diagnosis, and the patient being in a good constitutional condition, I had no hesitation in advising her to submit to an operation for its removal; to which she cheerfully agreed.

Accordingly, on the 1st of December, the atmosphere of the room having been rendered moist by the evaporation of water carbolized by the atomization of carbolic acid, and kept at a temperature of 80° Fahrenheit, and the patient having been carefully etherized by Prof. Bowling, the operation was done in the presence, and with the assistance, of Profs. Eve and Nichol, and Drs. Horton, Sneed, and Franklin.

An incision, four inches in length, was made in the linea alba, about equally distant from the umbilicus and pubis—passing through the integument, superficial fascia, and a layer of fat. The other tissues were divided carefully on a grooved direction, in the usual manner. Upon opening the peritoneum, the white glistening walls of the cyst were exposed, over which numerous and large veins were seen meandering. The fingers, now passed into the incision, were swept over the anterior surface of the tumor, without finding any adhesions. The cyst being fixed by tenacula, Spencer Wells' trocar and canula was plunged in between the large veins, and the fluid carried off through the tube attached to its extremity; about three gallons of a straw-colored fluid, not very thick, was discharged, when the cyst was easily drawn through the incision, the assistants pressing the edges of the incision firmly against the sac, so that not a drop of the fluid, or of blood, was admitted into the peritoneal cavity.

The pedicle of the sac was broad and thin, and originated from the right broad ligament. The left ovary was examined, and found perfectly healthy. The pedicle was perforated through its middle with a needle, armed with a stout double hempen ligature, and the two portions tied separately. It was divided with the écraseur, about an inch from the ligatures. The stump of the pedicle was then drawn outward, and lodged

in the abdominal wound, where it was retained by a strong silver pin passed through the abdominal walls and its central portion, and fixed by the thread passed around it, as in the hair-lip suture. Thus the end of the stump, with its ligatures, were entirely outside the abdomen.

The union of the wound was then completed by two more pins passed through the abdominal walls (including the peritoneum), with three silver sutures passed superficially between each pin. A compress, wet with a solution of carbolic acid, and a flannel bandage, finished the dressing.

The ether had produced nausea and vomiting, when first administered, but afterwards had an admirable effect. The patient was quieted perfectly, and was carried to bed before its effects had been dissipated. The operation was completed in about ten minutes.

The effects of the anæsthetic passed off gradually, and the patient expressed herself as very comfortable. There was no violent shock, and no reaction; her pulse, just after the operation, was 85, and at night the same. She complained of slight pains, of a burning, stinging character, about the wound. Twenty-five drops of the tincture of opium was ordered every four hours, the catheter to be used every six hours, and perfect quietude enjoined.

December 2nd, morning.—The patient slept nearly all night, and is feeling very well this morning; pulse 88, skin moist, tongue clean; has appetite. Catheter has been used twice; urine free. Wound looking well, and perfectly dry.

It is useless to follow out the daily record of the case. It will be sufficient to say that the patient continued to do well, without a single bad symptom. On the fourth day she passed urine without the catheter, and continued to do so; her bowels acted voluntarily on the sixth. The pins and sutures were removed on the seventh day, the wound having healed by the first intention, except immediately about the stump, which was in a sloughy condition, with some ulceration around. One of the ligatures came away on the sixteenth day; the other, with assistance, on the twentieth, at which time the wound around

the stump was nearly healed. She sat up on the sixteenth day, rose and moved about the room on the twenty-first, and in a few days had entirely recovered.

The cyst, which was of good size, (it, with its contents, weighed twenty-five pounds,) presented thick, firm walls, white and glistening externally; smooth, vascular, and of a rose-tint internally. The fluid contained was of a straw-color, glutinous, but not thick, and measured more than three gallons.

In March, 1872, Mrs. W——, of Alexandria, who had several times consulted me in reference to a large abdominal tumor, hearing of the successful issue of the case above recorded, sent for me to visit her at her home, and remove it, if I thought advisable. The history of her case is interesting, and I give it in full, as follows:

Mrs. W——, of Alexandria, Tennessee, aged 40 years, a spare tall lady, with dark hair and eyes, and the mother of five children, had suffered with a tumor of the abdomen for more than twelve years. When first noticed, it was not larger than an infant's head, and was then situated in the right iliac region. It was firm, smooth on its surface, movable, and not sensitive upon pressure. It continued to grow until, in a few years, the abdomen had become as large as at the full term of pregnancy, and was irregularly nodulated on its surface.

In 1861, she was first tapped by Drs. Thomas Sneed and McConnell, by which she was relieved of thirty or forty pounds of a thick glutinous fluid. The abdominal swelling disappeared entirely, after the tapping, with the exception of a small hard lump in the right iliac region.

The fluid gradually re-accumulated, and in about twelve months the enlargement was as great as before, and she had again to submit to the removal of the fluid. Almost every year, for the next three or four years, she has had to be tapped, in order to obtain relief.

In the spring of 1865, she came to Nashville to consult Dr. McConnel, Dr. Eve, and myself, in reference to the extirpa-

tion of the diseased mass. It was decided to give her temporary relief by tapping, and postpone the operation of removal. Six gallons of the thick glutinous fluid was removed. The small hard tumor that was discovered at the former tappings, was easily recognized, originating, apparently, from the right broad ligament. Up to this time, she had enjoyed the most perfect health, and had given birth, without difficulty, to several children.

In the following year, 1866, she became *enciente*, which, with an increased accumulation in the sac, caused much distress by the great distension. After mature deliberation, she was tapped, with great relief, and continued thus to her full term.

After her confinement, the fluid seemed to gather more rapidly, and she was tapped every few months. In fact, during the last year it was deemed necessary to withdraw the fluid every month or six weeks. Her health became very poor; emaciation was going on rapidly, and there was a certainty of death in a short time, unless permanent relief was obtained. I was summoned by letter to meet Drs. Sneed and Tubb at the house of Captain W——, on the 5th of February, for the purpose of considering the propriety of a radical operation. I failed to meet the engagement. The patient was so much distressed by the great accumulation, that her physicians tapped her, and made another engagement for me, on the 6th of March, as it was always a week or ten days before she recovered from the effect of the tapping.

On the day appointed, I visited Mrs. W—— at her home, near Alexandria. I found her a tall, well-formed lady, greatly emaciated, yet able to be up and attend to her domestic duties, with an enormous abdomen, although she had been tapped only a month since, and eight gallons of fluid withdrawn. Upon placing her in the horizontal position, and exposing the abdomen, I ascertained that the whole cavity of the abdomen was filled with the morbid growth. Its surface was smooth, with here and there an irregularity; it was dull on percussion, with distinct fluctuation. There was no pushing out of its

lateral walls, no pouching in Douglas's cul de sac. The walls of the abdomen were closely adherent to the tumor in front, and could not be rolled over it with the hand. A tape-line around the upper part of the abdomen proved its circumference to be fifty inches. I concurred with her most excellent physicians, Drs. Sneed and Tubb, in the opinion that it was a case of multilocular ovarian tumor, extensively adherent, and that the only hope for relief was in its extirpation.

The patient, after hearing a full and frank explanation of the dangers and difficulties of the operation, without a moment's hesitation determined to have it done.

On the next morning, the 7th of March, suitable preparations having been made, and assisted by Drs. Sneed and Tubb, her medical attendants, Drs. Fletcher and Sneed Jr., of Alexandria, and Dr. J. S. Poynar, of Nashville, who had accompanied me, Mrs. W—— was placed on the table and brought under the full effects of ether by Dr. Fletcher, who, during the whole time, managed it with great skill.

An incision was made in the linea alba, from four inches below the umbilicus to within three of the pubis. By a few strokes of the knife, the tissues were divided, and the bluish surface of the peritoneum exposed. It was found so closely adherent to the walls of the tumor, caused, doubtless, by the repeated tappings, that it was very difficult to separate them. In endeavoring to do so, an opening was made into the sac, and the thick glutinous fluid poured out freely. Dr. Poynar, with his hands on each side of the incision, pressed the abdominal walls close to the collapsing tumor, and thus prevented the fluid from entering the peritoneal cavity. After careful manipulation, a finger was insinuated between the peritoneum and sac, when the adhesions on the anterior surface were divided by careful dissection, until the hand could be passed in. Extensive and almost continuous adhesions were found on the anterior and left lateral portions of the tumor. Those on the superior and lateral surface were not very firm, and were easily broken off by the hand; but those on the lower anterior aspect were firm and strong, requiring a separation with the

scalpel. The omentum majus was extensively attached to its upper part, but was carefully separated; very broad and strong adhesions to the abdominal wall were encountered on the right side, and to the cœcum and vermiform process; while below, the tumor was closely connected with the bladder, uterus, and broad ligament of left side. There were also two or three long bands attaching it to the posterior walls of the abdomen.

After drawing off the thick fluid from two of the largest cysts, by means of a Spencer Wells trocar, I severed these extensive adhesions with the hand, scalpel, and écraseur, and turned the immense cyst out of the abdomen. The pedicle, which was large, and contained arteries equal in size to a crow's quill, came from the right side. It was secured temporarily with a strong hempen ligature, and separated.

So well had Dr. Poynar held the walls of the abdomen to the surface of the cyst, that very little, if any, of the fluid, escaped into the cavity; but the blood from arteries divided in separating the adhesions, accumulated in the pelvic cavity, and between the folds of the bowels, requiring the free use of the sponge. A liberal use was made of Peaslee's fluid serum, whenever the hand was carried into the cavity, and while the blood was being sponged out.

It was then discovered that two or three vessels in the torn portion of the omentum—two from the adhesion connected with the bladder, and one from that of the vermiform process, were pouring out blood slowly, but constantly, and causing an accumulation of blood in the cavity. These were all secured by delicate silver ligatures, and returned into the abdomen.

All hemorrhage having now ceased, the abdominal and pelvic cavities were thoroughly cleansed. After waiting a few minutes to make sure that no source of hemorrhage had been overlooked, the pedicle was brought out the lower part of the wound, and secured by Dawson's clamp; after which an acupressure-pin was passed deeply in the tissues, from side to side, transfixing the pedicle below the clamp; over this the figure

of 8 suture was passed. The wound was then closed by silver sutures passed through the entire wall, including the peritoneum. A flannel compress and bandage was applied, and the patient placed in bed.

She bore the operation remarkably well, the pulse never flagging for a moment. After she was in bed, she came from under the influence of the anæsthetic pleasantly—was cheerful and happy. There was very little depression from shock.

I remained with her until 2 o'clock the next morning, and with the exception of slight burning pain in the wound, she suffered none; her urine passed off freely through the self-retaining catheter; she took some light nourishment, and slept well under one-sixteenth of a grain of morphia.

The neoplasm, upon examination after removal, was found to be a multilocular cyst of immense size. Its walls were thick at some points, thin at others; white and shining externally, smooth, polished, and vascular, internally. In the portion of the wall near the pedicle were two or three plates of bony formation,.several inches in diameter.

The greater part of the tumor was made up of three large cysts, while in the lower portion were a great many smaller, varying in size, the largest being the size of a hen's egg.

The fluid contained in the cyst, the greater part of which had been removed during the operation, was straw-colored, thick, gelatinous.

The cyst, with its fluid-contents, weighed eighty-five pounds.

Letters from her attending physicians, from day to day, informed me of her steady improvement and ultimate recovery, with scarcely an unpleasant symptom.

A few months after the preceding case, I performed ovariotomy again with success. The patient, Mrs. R——, of our

County of Davidson, a tall, delicate-looking lady, 35 years of age, the mother of five children, the youngest only four months old, had observed, after her fourth pregnancy, that her abdomen remained large and protuberant, and that it increased gradually in size. Her general health, however, continued good, and she paid but little attention to the swelling. She again became pregnant, and the swelling, which had before not been very large, became so increased in size that she was alarmed, and consulted her physician, who told her that she had ascites, and gave medicine for that disease, of course without avail. She became enormously large before the birth of the baby, and suffered greatly from the distention of the abdominal walls. Her labor, which came on at full term, was natural, and of short duration. I had been frequently consulted in regard to her case, but had not visited her until a few days after the birth of the child. At that visit I made a thorough examination of the case, and satisfied myself that she had a large ovarian cyst, unilocular, and adherent, at least, to the anterior wall of the abdomen. She was advised to wean the babe, and, after she had fully recovered from her puerperal state, to have the tumor extirpated, to which she cheerfully assented.

Accordingly, in October last, she came to the city, and placed herself under my care. After thorough preparation, the operation was performed in the usual manner. A large, thick, unilocular cyst, filled with dark treacle-like fluid, was turned out, after breaking up extensive adhesions on its anterior and lateral parts. Its pedicle, which was broad and vascular, was secured with Dawson's clamp.

The patient was put to bed in half an hour after she took her position on the table, the operation lasting not more than ten minutes.

She had no shock, nor other troublesome symptom, but recovered fully, and was up in three weeks.

Thus it will be seen that only twelve operations of ovariotomy have been performed on patients of our State.

The whole number is as follows:

OPERATOR.	CASES.	SUCCESSFUL.	UNSUCCESSFUL.
Dr. Ephraim McDowell.....	1	1	0
Prof. H. Miller.....	1	0	1
Dr. H. R. Storer.....	1	1	0
Some Surgeon of New York.	1	0	1
Prof. T. L. Maddin	1	1	0
Dr. McCollough	1	0	1
Dr. Murfree.....	1	1	0
Dr. W. T. Briggs.....	5	3	2
Total.....	12	7	5

The above table shows a pretty high rate of mortality, but it will be remembered that only forlorn cases—cases of long standing, that were already nearly dead from the disease—submitted to the operation. Besides, it is a well-established fact that the early operations of every surgeon are least successful. So, as the first operations of our State do not present a very good showing, it is to be hoped that the next twelve cases will give us not more than the usual death-rate—that is, one to two and a half or three.

It is generally believed that, while ovariotomy is necessarily a very fatal operation, it is one easy of performance, and that any one of ordinary skill can do it. There never was a greater mistake. Prof. Thomas, in his most excellent work *On the Diseases of Women*, says:

"The operation of ovariotomy is at present, in this country, often performed by men inexperienced in the diagnosis and treatment of ovarian tumors. The statistics of some of the best operators prove that they have been progressively successful, as they have advanced in experience, and learned to avoid the dangers attendant upon the procedure, and we must conclude that they who operate for the first or second time, must damage the array of reported cases, and increase the rate of mortality. I know full well that it may be objected to this

statement, that if inexperienced men never operated, where would our supply of new surgeons come from? In reply to this I would remark, that if the professional relations of any man make it likely that he will be frequently called upon to perform this or any other operation, he should prepare himself to meet the demand upon him; but I cannot think it incumbent on any practitioner, upon whom no such demand is likely to be made, to undertake so formidable an operation, if the services of skilful and experienced men be attainable for its performance. I sincerely believe, as the result of observation, that the third influence which I have stated as marring the statistics of the subject, is by no means an insignificant one, at least in the United States. My impression is that if the histories of all the single operations performed by different practitioners in this country were published, they would present a lengthy, and by no means pleasing, exhibit."

Certainly there is no operation that requires more attention to detail—none that is more likely to be followed by sad results—if every point is not attended to, from the very first incision to the final dressing of the wound; nor is the after-treatment of less importance. With strict attention to these points, the mortality from ovariotomy should not be greater than that from most other great operations in surgery.

The various other operative methods which have been proposed and tried by the profession, for the cure of ovarian tumors, have not been resorted to in our State. Oftentimes, under a mistaken diagnosis, medical treatment has been used very assiduously, until it was found that no impression had been made on the disease, but, on the other hand, that great injury had been done to the general system.

Tapping is then often resorted to, with, usually, temporary relief, and is repeated every month or two until the patient, exhausted by the great drain on the system, dies.

As a general rule, I believe that it would be better if tapping were not resorted to, except for the purpose of diagnosis. Not that I believe it so dangerous an operation as some of our authors imagine; for, of the many I have submitted to it

myself, and of others I have seen do it, I have never yet met with, or seen, an unpleasant result. It is sometimes so urgently demanded to ward off threatened dissolution, and to alleviate suffering, that it cannot be entirely dispensed with. And in a few exceptional cases it has been followed by a perfect cure. It is probably only in cases of cyst of the broad ligament that such a result follows.

In 1856, I saw a case, with the late Prof. A. H. Buchanan, of an encysted dropsy of the left ovary, or broad ligament, which was tapped, giving exit to a thin clear serum, amounting to several gallons. The fluid never re-accumulated, and the patient has remained in perfect health since.

During last summer, I was invited to visit a case in consultation with Drs. C. K. Winston and Buist. The lady, aged 26, was the mother of one child, and had noticed a swelling in her right side some months previously, which had grown rapidly, and attained to considerable size. At first, menstruation was regular and her health good, but for six months her periods had ceased, and she had, in the last month or two, increased in size so rapidly that she had attained an enormous magnitude; and the swelling was accompanied with so much discomfort, and with so great a difficulty of respiration, that relief in some form was urgently demanded.

Upon careful examination, I was satisfied that she was the subject of an ovarian tumor, and was pregnant. She was tapped in the usual way, and four gallons of a thick, gelatinous, straw-colored fluid, was withdrawn, with entire relief to all the urgent symptoms. She went to term in a pretty fair condition, gave birth to twins, and, to our great relief, the tumor had entirely disappeared; nor has there been any reappearance.

In this case, the cure was doubtless the result of pressure of the growing uterus on the emptied sac, causing its entire obliteration.

I have met with two cases of rupture of the cyst, in both of which death ensued in a very short time.

The first, a delicate lady, about 60 years of age, with a mo-

derate sized cyst, in stepping from her carriage, fell, and struck her abdomen on the edge of the curb stone. She did not complain much at the moment, but, in a few hours, she was seized with vomiting, accompanied with great prostration of all the vital powers, and died in six or eight hours.

The second was a middle aged lady, with a small cyst, who, during an attack of dysentery, threw herself violently on the bed, after a very painful action from the bowels, the bed-rail striking on the most prominent part of the tumor. She was at once taken with vomiting, with great pain throughout the abdomen, and great prostration of the vital powers. She died the following night.

In neither case was a *post mortem* allowed; but the great and sudden shock to the system, together with the disappearance of the tumor, satisfied me of the nature of the trouble in both.

VESICO-VAGINAL FISTULA.

In a clinical lecture to the Summer Class of 1868, I said that there were not less than one hundred cases of vesico-vaginal fistula in our State. It was thought, at the time, to be an exaggeration, but I have since relieved so large a number, and have received communications from so many others, that I am sure I did not exaggerate.

Unfortunately, our poor women are, perhaps, in a majority of cases, entrusted to female midwives, who are ignorant of every principle of the obstetric art, and whose only motto is to wait, in every case, for the efforts of nature to relieve the patient, without a knowledge of any mode of relief, (except, in a few instances, the administration of ergot,) or of the time when relief should be given. It is not astonishing, then, that we have so many cases; in fact, it is somewhat strange that cases of injury of the vesico-vaginal septum do not occur more frequently. Nature is, however, so admirable in all her parturient processes, that that great function is carried to a safe termination, both as regards mother and child, in a large majority of cases. The occurrence of vesico-vaginal or vesico-rectal fistula is exceedingly rare in comparison with the great number of cases of labor; yet, as I have mentioned, they are sufficiently common.

The most common cause of this disease is pressure on the vesico-vaginal septum, by the child's head being detained too long in the pelvic excavation. When there is the slightest disproportion between the child's head and the maternal pelvis, when there is mal-presentation of the child's head, or when the mechanism of labor does not proceed regularly, the active pains force the presentation against the septum so con-

tinuously, or with such violence, as, either by the disturbance of the circulation and innervation, to cause a slough or to set up an acute vaginitis of a high grade, which, at the end of several weeks, may terminate in a slough of sufficient thickness to involve the whole septum. In rapid delivery, either natural or artificial, a portion of the vagina may be caught and pressed to such an extent as to lead to the formation of a fistula.

Obstetric manipulation, either manual or instrumental, may produce the accident, by lacerating or contusing the vagina, or by setting up such an inflammation as will terminate in the destruction of a portion of the vaginal walls. But it is probable that many cases attributed to this cause are really the result of delay in their employment.

There is a disposition on the part of many *accoucheurs* to postpone the use of the instruments in the hope that the natural pains will overcome the difficulty. The old aphorism that "meddlesome midwifery is bad," has caused many fistulæ. For while this maxim, so strongly impressed upon the mind of the practitioner, is inducing him to hesitate for fear he will be meddlesome, the violent and prolonged pressure is causing such changes in the vaginal walls as will result in fistula; and when, at last, a resort to instruments can be no longer delayed, the unfortunate result is attributed to them, and not to the pressure exerted by the child's head; whereas, if timely aid had been given, in many cases, all trouble would have been prevented.

Other causes, besides those mentioned, may produce fistulæ. Idiopathic vaginitis sometimes results in that way; the pressure from a pessary, or large calculus, may cause an opening in the septum; ulceration, either cancerous or syphilitic, often destroys the walls between the canals.

From whatever cause it may come, a patient suffering from vesico-vaginal fistula is truly an object of commiseration. The urine passing over tissues not prepared by nature to bear it, inflammation of the part results, the vagina becomes red, swollen, very tender, and covered with urinary concretions;

the vulva, perineum, thighs, and buttocks, are red, excoriated, swollen, and covered with a vesicular eruption, and from the clothes and body arise such an unpleasant odor of decomposing urine, that the poor sufferer is prevented from entering society or from enjoying the pleasures of the family circle, and is even regarded by the husband with feelings akin to disgust.

Such a condition could not fail to enlist the sympathy of the physician and surgeon, and cause him to make strenuous efforts for its relief.

From an early period we have accounts of persevering and methodical attempts to cure the distressing malady. The attention of Ambrose Paré was directed to it, and he tried its cure by operation in 1570. In 1663, Roonhuysen, an eminent practitioner of Amsterdam, proposed to treat vesico-vaginal fistulæ on the same surgical principle as harelip, viz., by paring the edges of the fistula, and bringing them together with silk sutures, but there is no evidence that he ever put his proposition into practice.

In 1720, Voelter, of Wurtemburg, and Fatio, of Basle, carried out the suggestion of Roonhuysen, but failed to effect a cure in both cases.

The procedure fell into oblivion until Naegle, of Heidelburg, recalled the attention of the profession to it in 1812, after which success occasionally attended this method, but most generally failure was the result.

In 1829, Roux, of Paris, tried the twisted suture, with metallic bars and ordinary thread.

In 1834, Gosset, of London, employed the knee-elbow position, the lever speculum, the metallic suture, and the permanent catheter; but his suggestion did not impress the profession.

In 1839, Hayward, of Boston, reported three cases cured by vivifying the vaginal margin of the fistula, and closing it with silk suture.

In 1846, Metzler, of Prague, used the lever speculum, knee-elbow position, gilded needle, perforated shot, and the permanent catheter.

In 1847, Mettauer, a distinguished surgeon of Virginia, after using the leaden suture and the permanent catheter with great success, made the statement that, in his opinion, every case of vesico-vaginal fistula should be cured, and that his success justified the assertion.

Previous to 1852, however, most surgeons had despaired of being able to effect a radical cure of vesico-vaginal fistulæ. Cooper, Abernathy, Dieffenbach, Dupuytren, Desault, Lawrence, Lallemand, Guthrie, and Lisfranc, exhausted all their resources in vain attempts to close the vicarious opening. Vidal said: "I do not believe that there exists, in the science of surgery, a well-authenticated complete cure of vesico-vaginal fistula—a fistula due to a loss of substance from the *bas fond* of the bladder."

Velpeau, than whom I acknowledge no higher authority in surgery, said of these fistulæ: "To attach the borders of an opening, when we do not know where to grasp them; to shut it up by means of needles or thread, when we have no point apparently to secure them; to act on a movable partition placed between two cavities, hidden from our sight, and upon which we can scarcely find any purchase, seems to be calculated to have no other result than to cause unnecessary suffering to the patient."

Sir James Y. Simpson, of Edinburgh, said: "I have often seen cases operated on, and in many different ways, and have sometimes tried to operate myself; but, until lately, I never saw a cure."

Matters are now, however, happily changed; almost every case of vesico-vaginal fistula is curable, unless there is some constitutional vice to interfere with the processes of adhesion. Success is the rule, failure the exception.

The transcendant glory of having discovered and perfected a method by which vesico-vaginal fistula may be cured with as much certainty as most surgical diseases belongs to our own countryman, and a native of our own sunny South, J. Marion Sims, and a just pride swells the heart of every American surgeon when he refers to his brilliant achievements in uterine

surgery. Dr. Sims, in 1852, published his experience in the treatment of this intractable malady in the *American Journal of the Medical Sciences*, and claimed to have discovered, first, the lever speculum by which the vagina could be distended and explored; second, the silver suture, which, producing no irritation or ulceration, unless the parts held together were very much stretched, could, therefore, keep the edges of the fistula in close contact for an indefinite length of time; third, the sigmoid catheter, which, being self-retaining, would keep the bladder empty during the process of cure. There can be no question that these are the means by which vesico-vaginal fistula may be easily cured, and they have been unanimously adopted throughout the civilized world.

A history of this important discovery will no doubt be interesting to you, gentlemen, and to all practitioners, and therefore I make the following extract from the address of Dr. Sims, delivered before the Academy of Medicine, in New York:

"For the first ten years of my professional life, the treatment of any disease peculiar to woman was ignored as far as possible. Surgery was my ambition, and it was gratified, for my head and heart and hands were full. This was due, not to any particular merit on my part, but to a fortunate position among a liberal and enlightened profession in the noble State of Alabama, a profession which, for intelligence and a chivalric *esprit de corps*, is not behind that of any other State in this great confederacy.

"Thus situated, a case of vesico-vaginal fistula was sent to me in July, 1845, which was investigated more because I had a surgical reputation to sustain than from any particular interest in the subject. It was, of course, dismissed as incurable. Two months after this another presented, which received a like verdict. Two cases in such quick succession, in a country town, at that time, formed an era in one's life. Imagine my surprise when, a few weeks after this, a gentleman called to consult me about a third case. I told him promptly that it was useless to send her to me, as the injury was wholly incu-

rable. He suggested that there was a possibility of my being mistaken in my ready diagnosis, when I replied that a leakage of urine following a protracted labor, was an infallible sign of a vesical fistula. But my remonstrances were unavailing, for he sent her to town in spite of me.

"I investigated the case thoroughly, reading every author I could find on the subject, but to no purpose, for all was darkness and confusion; and thus I was on the eve of sending her home, when a little incident occurred that formed the turning-point of my professional career, and without which, the discovery that has engaged our attention to-night would not have been made.

"A lady was riding in the suburbs of the city of Montgomery, Alabama; her pony, taking fright, jumped suddenly, when she fell to the ground, striking on the sacrum. I saw her soon afterward; her sufferings were extreme, as she had rectal and vesical tenesmus from a sudden retroversion of the uterus. To replace the dislocated organ was the indication of relief. Following the teachings of learned professors, the patient (covered with a sheet) was placed on the knees, with the pelvis elevated and the thorax depressed, when, by manipulation through the vagina and rectum, I hoped to replace it.

"Introducing the right fore-finger into the vagina, but remembering how a nervous gentleman had suffered a few days before from a rectal examination, I concluded not to subject this lady to the same disagreeable operation, particularly as it seemed possible to overcome the difficulty if my finger was only a little longer. My middle finger is more than half an inch longer than the index, but it could not be used without its fellow; and thus the two were passed, and in a few seconds I could not touch the uterus, or even the walls of the vagina, and the fingers were swept round, as it were, 'in empty nothingness,' which was to me, at the moment, a most puzzling mystery; and, while I was endeavoring to unravel it, my patient exclaimed, 'Oh, doctor, I am relieved!' My office was ended, for my mission was to relieve her, but how it was done I could not understand. While I stood doubting and won-

dering, my patient, now easy, threw herself down on her side, producing thereby a sudden escapement of air from the vagina; and thus the whole mystery of the accidendal reduction of the dislocated uterus was explained on the principle of atmospheric pressure.

"And what was its *rationale?* When the patient was in the position described, there being a natural tendency of the pelvic viscera to gravitate toward the epigastric region, it would require no great *vis a tergo* to produce the desired result in a recent case of this kind. One finger, however, was not long enough to throw the organ up, nor were the two; but when they were both introduced, in my varying manipulations and strenuous efforts, the hand was accidentally turned with its palm downward, which thus brought the broad dorsal surface of the two parallel fingers in contact with the vulvar commissure, thereby elevating the perineum and expanding the sphincter muscle, which allowed the air to rush into the vagina under the palmar surface of the fingers, where, by its mechanical pressure of fifteen pounds to the square inch, this canal was dilated like a balloon, and the uterus replaced by its pressure alone. This accident—*there are no accidents in the providence of God!*—this incident, then, occurred just at the right time. Had it happened six months sooner, its importance would not have been duly appreciated. Had it been six days later, the golden opportunity for its practical application would have been lost forever; for my mind had been sorely perplexed by the obscurity surrounding the investigation of the cases alluded to, and I said to myself: 'If, by this position, the atmospheric air can be made to dilate the vagina to such an extent, even with a force strong enough to reduce a dislocated uterus, why will not the same principle allow me to explore this region, and examine accurately any injury or disease to which it may be liable?'

"Full of thought, I hurried home, and the patient (with vesico-vaginal fistula), who was to have left on the next day, was placed in the position described, with an assistant on each side to elevate and retract the nates. I cannot, nor is it need-

ful to, describe my emotions, when the air rushed in and dilated the vagina to its greatest capacity, whereby its whole surface was seen at one view, for the first time, by any mortal man. With this sudden flash of light, with the fistulous opening seen in its proper relations, seemingly without any appreciable process of ratiocination, all the principles of the operation were presented to my mind as clearly as at this time. And thus in a moment, in the twinkling of an eye, new hopes and new aspirations filled my soul; for a flood of dazzling light had suddenly burst upon my enraptured vision, and I saw in the distance the great and glorious triumph that awaited determined and persevering effort. From this moment my high resolve was taken; nor did I think or care for the personal sacrifices I should have to make. I thought only of relieving the loveliest of all God's creation of one of the most loathsome maladies that can possibly befall poor human nature; and in this I honestly confess that I was stimulated by feelings of national pride, as well as by a desire to advance our glorious profession.

"Full of sympathy and enthusiasm, thus all at once I found myself running headlong after the very class of sufferers that I had, all my professional life, most studiously avoided. Ransacking the country around, my medical brethren soon discovered, and placed at my disposal, some seven or eight cases of vesico-vaginal fistula that had been quietly laid up as incurable. Building a little hospital as a special field of experiment, I readily got control of these cases, all of them healthy young negro women; promising to perform no operation that would endanger life or render their condition any worse. Having no proper instruments and no instrument-maker, dentists, jewelers, and blacksmiths, were laid under contribution, and soon such rude instruments were made as were suggested by the peculiar wants of individual cases. This occupied a period from the 9th of December, 1845, to the 10th of January, 1846, when the first operation was performed.

"Several medical friends, among whom were Drs. Boling, Holt, Ames, Baldwin, Jones, McWhorter, and Henry, were

invited to the inauguration of the experimental series. When the mechanical contrivances were exhibited, the peculiarities of each case pointed out, and the principles of the operation explained, they thought my plan of procedure promised well, while some were but little less enthusiastic than myself in hopes for the future.

"The first was a very simple case, and one that any tyro in surgery could now cure in a week's time. The fistula was an inch and one-quarter long, transverse, in the base of the bladder, with an abundance of tissue. Its edges were accurately adjusted, and I expected to effect at once a magical cure; but, greatly to my surprise and mortification, it was a failure. However, the size of the opening was reduced from that to one not larger than a No. 4 bougie; this encouraged me considerably, and the same operation was tried on another case, with a like unfortunate result; and after this, with various and constantly-varied modifications on others, till each one had suffered numerous operations, but all to no purpose.

"And thus I worked on, not for weeks and months, but for long weary years, before a single case was cured. My repeated failures brought a degree of anguish that I cannot now depict, even were it desirable. All my spare time was given to the development of a single idea, the seemingly visionary one, of curing this sad affliction, which not unfrequently follows the fulfillment of the law pronounced by an offended God, when he said to the woman: 'In sorrow and suffering thou shalt bring forth children.'

"Soon my friends began to despair of my efforts, and, one by one, became tired of such profitless work. At last Dr. B. R. Jones, my partner, an accomplished physician, who had stood firmly by, giving his valuable advice and assistance, importuned me to cease my efforts; thus opposed at home, and deserted by the professional brethren who once cheered me on by their personal presence, I now stood alone—alone, did I say? No! I was not alone, for I felt that I had a mission, if not of a divine character, at least but little short of it—of divine origin. I felt that the God who had called me to this

good work, and inspired me with new views for its accomplishment, was with me, and would not desert me. I could not have ceased my labors if I had tried, for something told me that the fullness of time had arrived, that the work had to be done, and that, if I should fail, God, in his wisdom, would raise up some one as an instrument to carry it forward to a glorious consummation. I was not alone, then; nor was I alone in another sense, for I had succeeded in infusing my own courage and enthusiasm into the hearts of the half dozen sufferers who looked to me for help, and implored me to repeat operations so tedious, and, at that time, often so painful, that none but a woman could have borne them.

"To the indomitable courage of these long-suffering women, more than to any other single circumstance, is the world indebted for the results of these persevering efforts. Had they faltered, then would woman have continued to suffer from the dreadful injuries produced by protracted parturition, and then should the broad domain of surgery not have known one of the most useful improvements that shall forever hereafter grace its annals.

"In my first experiments the quilled suture was used, securing the ligatures by passing them through little canulæ that projected from the vulva. The canulæ were firmly soldered to the proximal quill, and, when the ligatures were tightened and wrapped round the end that projected from the vagina, the fistulous edges were neatly coaptated by the quills. This is introduced merely to show the slow degrees by which practical truths are sometimes developed. After using this machine, variously modified, for nearly three years, giving attention, mostly, to the perfection of the self-retaining catheter, I at last concluded that the projecting canulæ were a chief cause of failure, and consequently determined to dispense with them. But how to secure the ligatures was the question. A detail of the numberless expedients resorted to is useless; suffice it to say that I was at last driven completely to the wall. I had resolved never to repeat another operation till I had devised some plan of fastening the quill suture without the

canulæ; of tying a knot where I could not reach it with the fingers. Thus my brain was sorely puzzled; I had not performed an operation for nearly six weeks, and my devoted patients were begging me, from day to day, to 'try only one more time.' Notwithstanding their importunities, I had determined, first, to invent a knot for my sutures; but it seemed that my usual readiness of expedient had now deserted me. My brain was oppressed; my heart was heavy; but never, for one moment, did I despair of eventual success.

"At last I happened to remember that, when a boy, I used to make sinkers to my fishing-lines by cutting a shot half in two, laying the line in the cut, and then compressing the shot on it with my teeth. I cannot express the delight that filled my heart at this simple suggestion. The idea occurred to me on the night of the 14th of November, 1848. The contemplation of its beauty, simplicity, and perfect adaptation to the purpose, gave me a sleepless night; for there I lay, with ethe-realized brain, performing, in imagination, a magical cure on each of my devoted patients. This was, as I thought, the consummation of all my plans. After a struggle for three years, victory was about to crown my efforts. How I longed for the morning, that I might put to the test of experiment what seemed so beautiful in theory! But I was doomed to wait another twenty-four hours before proving my principle; for, just as I was preparing for the operation, a call to the country appropriated the day, and thus the longest day of my life was lengthened out by hope deferred. But, bright and early on the succeeding morning I applied the quill suture, secured by the perforated shot. It was all I could desire. I was never so well satisfied with any operation in all my life. How anxiously I waited for its results! I had at last gotten rid of the canulæ that had so long been a serious obstacle to success, and everything was propitious; but these bright hopes were of short duration, for I soon had unmistakable evidence that the operation was a total failure. What was the cause of it? 'Why,' said I, 'it must be because the silver quills are too large.' So I began to lessen their size, till they were not

more than a line in diameter, and, on account of the expense of silver, lead was substituted; but, notwithstanding these modifications, there was no more success than at the beginning. What now was to be done? The principles of the operation were clear, and its mechanism seemed to be perfect. At first I had supposed my failures were due to the imperfection of the catheter; that was perfected. Then I laid the blame on the method of securing the sutures by means of the canulæ; they were replaced by the perforated shot. And then I looked to the size of the quills, and reduced them, so that they burrowed nicely in the tissues. It then seemed that success was inevitable; but still disappointment awaited me at every turn.

"Thus far, all my experiments were conducted on the principles of a rational inductive philosophy. The operation was mechanically perfect, but with no better results than when it was rude and clumsy. There must be a reason for all this. What was it? 'Why,' said I, 'perhaps it is the nature of the material more than in its principle of action.' What a happy thought! Of course it was, for a silk thread, introduced under the skin, and allowed to remain a week, becomes a seton, giving rise to the suppurative process, and certainly the same thing must occur with it in the vagina; and how, then, could there be cohesive union? Here, then, was the difficulty at last! How strange it now seemed to me that this fact had not long ago forced itself upon my mind. Now the question arose, 'Was there a substitute for silk that would answer the same purpose, and yet not poison the animal tissue?' Why, lead remains indefinitely in the body, becomes sacculated, and produces no poisonous or suppurative effect. Dr. Levert, of Mobile, had demonstrated the innocuousness and efficiency of leaden ligatures on the arteries in the lower animals, and Mettauer and Dieffenbach had actually used leaden sutures in these very cases; and I had, in my various experiments, tried them in two cases of vesical and one of rectal fistula; but, fortunately for science, the clumsy leaden wire was unsuccessful in my hands. Was there any other metal that could be sub-

stituted for lead, possessing its valuable property of harmlessness?

"In this train of inquiry, what would be more readily suggested to the reasoning mind than silver, gold, and platinum? Just at this stage of affairs I happened to pick up a piece of brass wire that had been used in a pair of old-fashioned suspenders, made before the days of India-rubber; it was as fine as ordinary sewing thread. I took it to a jeweler, who imitated it in silver. I was now quite as anxious to see the result of an experiment with this, as I was, seven months before, to see the perforated shot applied. On the 21st of June, 1849, it was done.

"A young colored woman, who had never murmured at the preceding failures, was placed on the operating table for the thirtieth time, and the silver sutures were applied, with the leaden bars and the perforated shot. In all previous operations, the urethra, in a day or two, would become red and tender, and the urine loaded with thick, tenacious mucus, thus showing the inflammatory process, which was adverse to union; but, after this operation, the urine remained perfectly limpid all the time, and on the eighth day the parts were perfectly healed, the suture apparatus remaining just as it was placed, with the cross-bars somewhat burrowed in the vaginal tissue.

"I shall not dwell upon my feelings at this time. At last I had attained for what I had worked nearly four years; and it was but a few weeks before all the cases were cured that had been the subject of experiment for so long a time. I was anxious to get a few more cases, to settle some doubtful points, before publishing to the world my discovery; but, unfortunately, with the realization of my dreams, and in the full fruition of my most sanguine hopes, came a sad reverse. An exacting practice, and the extreme mental tension of the past four years, had produced a collapse, long foreseen by friends, without my consciousness of its approach. Having contracted the chronic disease of a warm climate, which is almost universally fatal, and struggled hard for more than two years,

and, as it seemed, hopelessly, against my fate, thus seeing that death was inevitable, and fearing that I might die without the world's reaping the benefit of my labors, I determined to give my experience, crude as it was, to the profession that I loved so much. And, accordingly, in October, 1851, my paper 'On Vesico-vaginal Fistula' was dictated, and sent to Dr. Isaac Hays, of Philadelphia, who published it in the *American Journal of the Medical Sciences*, for January, 1852, as my last free-will offering on the altar of science. I little thought of living to see it in print; but it has pleased an all-wise God to restore me again to health, and, by a mysterious providence, to place me in your midst, where I have found naught but friends and kindness."

Previous to 1852, no attempt had been made, in our State, to heal vesico-vaginal fistula by operation. The subjects of that disease were abandoned as incurable, and were left to pass their miserable existence as best they could. Now and then attempts were made to heal them by caustics, but without success, in any case, so far as can be learned.

In 1847, a case occurred near Nashville, in a favorite slave of a wealthy planter, which was seen and treated by every prominent physician of the city, by nitrate of silver, and even by the actual cautery; and though the fistula was not larger than a crow-quill, it was not benefitted in the least, and the poor woman suffered until her death, which took place a few years afterwards, from pneumonia, with a lesion which the merest tyro in surgery could now cure without any trouble.

When Dr. Sims taught the members of the profession that vesico-vaginal fistula *could be cured*, and the method by which so desirable a result could be effected, the news spread with rapidity over the mountains and valleys and plains of our State, as well as over all other States, causing many poor unhappy women, who had long since given up in despair, to hope for relief from their sufferings, and a restoration to society, from which they had been driven. As was natural, numbers so afflicted sought relief at the capital of the State;

but although many were operated on by several different surgeons, in 1853, 1854, and 1855, not one was cured, nor even partially relieved. Most of them, with hopes blasted, returned to their homes, determined to submit to their fate. Two of the number, however, concluded to visit Dr. Sims himself, before giving up their chance of cure.

Mrs. R——, who had already submitted to two or three operations, although five months advanced in pregnancy, visited New York, and was cured in the first operation, by Dr. Sims. She returned home, was delivered of a fine boy at term, and has enjoyed excellent health ever since.

Mrs. L——, a poor widow, submitted to four or five operations for the cure of a vesico-vaginal fistula, without success. Her condition was so bad, that a distinguished surgeon proposed to close the whole vaginal canal, and make of it a receptacle for the urine, by paring the edges of the labia majora, and uniting them with sutures, except a small opening at its upper part, through which the urine might pass. The patient consented, and the operation was done. The union failed to take place. She was afterwards sent, through the charity of some kind ladies, to Dr. Sims, who cured her fistula by the first operation, leaving her perfect in every respect.

The first successful operation for vesico-vaginal fistula, in our State, so far as I can learn, was done at Memphis, in 1856, by the late Dr. H. R. Robards, Professor of Surgery, at that time, in the Memphis Medical College. He reports, in the *Memphis Medical Record*, two operations, as follows:

"The two cases of vesico-vaginal fistula are reported, not with the view of throwing any additional light upon the distressing affliction, or of adding any new operative procedure for its relief; but, as various modes have been recommended by different surgeons, all possessing more or less merit, it may be well to report, at least, the result of any practical operation in every case, so that the advantages and disadvantages may be seen by those who have no special partiality for any particular operation.

"The one so generally and favorably known, at this time, as Dr. Marion Sims', in many respects possesses advantages so greatly superior to any other, that, however it may be modified, I presume there are few intelligent surgeons who would not adopt at least his plan of bringing the parts into view, and the general principles that he has recommended.

"The first case was that of Mrs. H——, of this county—a healthy married lady, about twenty years of age, who had fistula, produced in the usual way, with the first child, to wit: protracted labor, pressure, violence, sloughing, etc. About six months standing, immediately above the neck of the bladder, transverse, one and three-quarters of an inch in length, and half an inch wide. The vagina, neck, and mouth of the womb, healthy, and the edges of the fistulous opening not so thick and indurated as usual, consequently it was a favorable case for an operation. Dr. A. K. Taylor and myself performed it without the slightest difficulty, after Dr. Sims' plan. The lady left the city two days after the operation, and we did not see her again for more than a week, when the sutures had cut their way out and been lost. There was an opening left, through which a common size silver probe could readily pass, and through which the urine dribbled. A single suture and two short clamps were sufficient to complete the cure in five or six days more.

"The next case was that of Mrs. S——, of Mississippi, about 23 or 24 years of age, rather fleshy, and of a lymphatic temperament. The fistula was situated higher up in the vagina, and the edges thicker and harder than the other. The general health of this patient had also suffered more, the nervous system being very much shattered. The induration of the edges was so great as to blunt the edges of our best knives, and had a cartilaginous appearance. The clamps were applied in the same manner as in the other, except that the precaution was taken to include a larger portion of tissue between the clamps, as ulceration and sloughing was feared in consequence of the contracted and unyielding nature of the parts.

"After the operation had been completed, the permanent

catheter was introduced, as usual, but she found great difficulty in retaining it. Cold applications were made, and strict rest enjoined.

"Examined the next day. No urine was discovered to escape, and the case seemed progressing favorably.

"The next, or the third day, the symptoms were the same; urine passed through the urethra. On examination, however, one of the clamps seemed buried too deeply in the tissues, and ulceration was going on to some extent; still we hoped to accomplish adhesion before any serious damage could result from that cause.

"On the fifth day the clamps had to be removed; adhesion was found to have taken place, but the clamp on one side had ulcerated through the coats of the vagina and bladder, the consequence of which was another fistulous opening, not so large as the other had been, but just as inconvenient.

"Another operation was performed as soon as the integrity of the parts had been sufficiently restored to authorize it, and great care was taken to adapt the force put upon the sutures to the predisposition to ulceration, and the soft sloughy character the tissues had now assumed. Only enough was used to insure perfect co-aptation, and the sutures were entered and passed out into sound tissues. Notwithstanding all which, and close watching, the same result followed.

"A third operation, and, I believe, a fourth, met with no better success. The weather being exceedingly hot, we advised the patient to postpone any further attempt at a cure until the weather was more favorable, and the integrity of the parts had been more thoroughly restored.

"The operation, in this case, I regard as only a partial failure, and whatever there was of failure is owing, in my opinion, to the only objection that can be urged against the operation, and that is, the liability to ulceration caused by the pressure of the clamps; but how that difficulty is to be remedied, unless it be by making the clamps wider, somewhat after the manner of the suture, lately recommended by Dr. Bozeman, of Montgomery, Alabama, I cannot tell. The operation

of Dr. Bozeman is plausible, and under existing circumstances, I shall be disposed to try it the first case I have, believing, however, that two buttons will answer better than one, and that the same objection may be urged against this, as has been against Dr. Mettauer's, that the sutures themselves are liable to cause ulceration and cut their way through before adhesion has taken place. Indeed, with the exception of the protection which the button affords to the edges, the plan of Dr. Bozeman possesses no advantage over Dr. Mettauer's, in my estimation. As to the manner of bringing the parts in view, and the general principles of the operation, there can be no doubt but that Dr. Sims is entitled to the merit of first making the operation practicable, and that whatever imperfection it may possess, will yet be remedied by his inventive and ingenious mind. The cases reported by Dr. Bozeman, treated on his plan successfully, are remarkable, and even if it should prove less successful in other hands, entitle him to much credit for those he has treated."

In 1860, I performed the first successful operation in Nashville, and the second successful one in the State, I suppose. As it was a singular and interesting case, in many respects, I will read the report of it, as published in the *Nashville Journal of Medicine and Surgery* of that year:

Case I.—"Mrs. W——, of West Tennessee, came to our city in June last, seeking relief from a vesico-vaginal fistula, and placed herself under my care. She was a lady of about 40 years of age, the mother of four children, the last of whom was still-born, and whose birth gave rise to the accident.

"Her last labor took place about the middle of July, 1859, and was unusually long—she being in charge of a female midwife for several days before a physician was called. Upon examination, finding a shoulder presentation, he turned and delivered the child. After the birth, she had a very severe spell of sickness, lasting several days. When she recovered, it was found that she could not retain her urine; it passed off continually, whether in the erect or horizontal position, pro-

ducing great excoriation of the labia and thighs; and upon walking much, it would wet even her stockings and fill her shoes. This condition had continued to the time of her visit. At first her general health had been good, but more recently it had given way, and she was suffering from indigestion, loss of flesh, and general debility.

"An examination, per vaginum, revealed a large fistula situated at the junction of the vagina with the cervix uteri, about one and a quarter inch in the transverse by three-quarters to one inch in the antero-posterior diameter; the cervix uteri was thrown upwards into this opening, so that the posterior lip of the os uteri formed the posterior boundary of the fistula.

"Although this was an unpromising case for an operation, in consequence of the high position and size of the opening, and the bad health of the patient, yet, in view of her unfortunate condition, it was determined to give her the benefit of a *chance* for relief; and after full consultation with Professors Eve, Bowling, and Watson, I determined to leave the cervix uteri in the opening as it was, and to attempt to unite the vaginal with the uterine lip of the fistula, thus throwing the os uteri into the cavity of the bladder.

"She was placed under preparatory treatment, which, in a week or ten days, so improved her general health that I thought her in good condition for the operation. Accordingly, having had her bowels freely evacuated the night before, I proceeded to operate, assisted by Professors Eve and Watson, and Messrs. Binns and Seward, medical students.

"Having placed the patient in position, on her knees and fore-arms, with the head and shoulders depressed and nates elevated, the speculum of Sims was introduced, and the recto-vaginal septum well raised, thus illuminating the vaginal cavity so perfectly that the fistula was brought fully into view. The edges were then freely pared at the expense of the vaginal mucus membrane. After waiting for the bleeding to cease and the patient to rest, I proceeded to deposit the metallic sutures, which I found to be a very difficult matter, owing to

the position of the opening and the mobility of the cervix uteri; but, after many fruitless attempts, success crowned my efforts, and six sutures were deposited to my notion. I used the staphyloraphy needle in he *port aiguille*, and passed it through the posterior lip first. Then the sutures were passed through the perforations of Dr. Bozeman's '*button*'; and it being carried *home*, was fastened by the perforated shot.

"The lady bore the operation without a murmur or groan. She was placed in bed, an opiate administered, and the self-retaining catheter introduced. She continued to do extremely well, (except that she could not bear the catheter at all, but fortunately had the power of passing urine every few minutes, without effort, asleep or awake,) until the fifth day, when she was attacked with chill, followed by high fever, great abdominal pain and tenderness.

"Active antiphlogistic treatment was used in vain, until I was compelled to purge her freely, after which she improved rapidly. No urine had escaped through the fistula until she had the spell of sickness; afterwards, it escaped freely.

"I let the *button* remain until the twelfth day. Upon an examination of the suture at that time, the button was found very loose, and tilted up against the fistula. The wires were cut, and the whole removed, and, to my astonishment, I found the fistula cicatrized to a great extent, leaving only a small round opening, not larger than a goose-quill.

"The patient's health had suffered greatly during her confinement, and our effort was directed now to its restoration, hoping that the fistula would completely heal by local applications. Notwithstanding her general health became greatly better—in fact, entirely restored—no change of the fistula was effected; her urine still escaped per vaginam. I should mention that her menses came on, and passed partly by the bladder and partly by the vagina.

"On the 25th of July, her bowels having been freely emptied and her diet restricted to a cracker and a cup of tea for several days, the operation was again performed. More difficulty was experienced in denuding the edges of the opening,

and a great deal more in depositing the sutures. I could effect nothing with the needle used previously, nor with the common needle of the pocket-case. I succeeded with Bozeman's straight needle placed in the needle-holder at an obtuse angle; after passing it through the anterior lip, I depressed the handle, gently forced it through the posterior lip, and catching the point as it emerged, pulled it forward; five sutures were deposited, and the button applied and fastened as before.

"It will be sufficient to add that she had no trouble after this operation; no urine escaped through the opening, and she passed it *ad libitum*, not being able to use the catheter; her bowels remained constipated for fourteen days.

"On the twelfth day I removed the button, and found the fistula *perfectly cicatrized*.

"Five days afterwards she menstruated entirely through *the bladder*—not one drop per vaginam.

"In three weeks she went home, by railroad and stage—having to stage it sixty or seventy miles. Since her arrival, we are informed that she is doing well.

"It will be seen that I did not adopt the recommendation of Sims and Bozeman, to disengage the neck of the womb from its position in the bladder, because I believed the operation would offer a better chance for success without."

From the date of my last operation, no other was done in the bounds of our State (at least I have been unable to learn of any) until 1868. Nor have I been able to hear of but one operation, except my own, up to the present time.

Dr. W. E. Rogers, of Memphis, reports a successful operation on a lady of Memphis, aged 22, for a fistula one inch in length by three-quarters of an inch in width, produced by long-continued pressure. She was cured by one operation.

The following comprise the cases operated on by myself since the beginning of 1868:

CASE II.—In June, 1868, Mrs. T——, of Wilson County; her labor, forty hours' duration; head of child detained in the pelvic cavity for fifteen hours. Delivered of a large

still-born child after ergot had been administered. Fistula situated an inch below the os uteri, oval in shape, an inch in the transverse by half an inch in the antero-posterior diameter. Vagina constricted to such an extent that it was with difficulty the fistula could be examined. The strictured vagina was relieved by incision and dilatation, and the fistula was closed by one operation. The patient returned home in three weeks, with the functions of her bladder entirely restored.

In a few weeks after the preceding, I operated on the following:

CASE III.—"Mrs. C——, aged 20, a stout, athletic woman, from West Tennessee, was sent to me by Dr. McCall, of Henry County, for the cure of vesico-vaginal fistula. On the 25th of December, 1867, she was taken in labor, and after three days of ineffectual efforts, she was delivered of a large male child by cephalotomy. On the day after her delivery, she was seized with peritonitis, and for three weeks it was thought impossible for her to recover. At the end of that time, however, she became convalescent, and gradually got well. When she began to convalesce, it was discovered that her urine dribbled from her constantly, but the exact period at which it commenced was unknown. Since that time she has never retained a drop of water; whether she was lying, sitting, or standing, the urine constantly passed from her; consequently, the labia and surrounding parts, as in every case, were inflamed and excoriated, and so painful, from the constant irritation, that she could get no rest without opiates; and this, together with the noisome smell of decomposing urine from her saturated clothing, rendered it one of the most pitiable cases a surgeon has to meet.

"Several days were occupied in relieving the local irritation by frequent ablutions, and the free use of glycerine, before an examination could be made.

"The examination revealed the fact that the vagina was obliterated to within an inch and a half of the external parts, with the exception of a small opening through which passed

the urine and menstrual discharges. This opening was oval in shape, about three-fourths in the transverse by one-fourth in the antero-posterior diameter.

"For the purpose of exploring the parts above, I determined to dilate the opening, and, if necessary, to incise the constricted vagina. Accordingly, I introduced a sponge-tent, and, upon its removal in six hours, I could easily pass the index finger through the opening into a large cavity, which I supposed was the upper part of the vagina, and immediately divided the intervening septum with a probe-pointed bistoury, at several points, and introducing an elastic air-bag, distended it as much as the patient could bear; by gradually increasing the size of the bag, in five or six days all traces of the obstruction were removed. I then proceeded to make an examination.

"Having placed her in the antero-lateral position of Sims, the perineum was elevated by the lever speculum, and the anterior part of the vagina brought forward by the depressor. The whole vagina, nearly to the external part, was filled with a cherry-red tumor, the inverted vesical mucus membrane, nor could it be retained sufficiently to make a clear diagnosis until the position of the patient was changed to the knees and elbows; then the tumor having been reduced, it was discovered that the whole of the vesico-vaginal septum, together with the cervix uteri, had been destroyed, and that the cavity opened by the operation was formed in front by the anterior wall of the bladder, above by the remains of the cervix uteri, and posteriorly by the posterior wall of the vagina.

"I had never met with a more unpromising case, but because of her deplorable condition, I proposed to her husband and herself the obliteration of the vagina just below the former constriction, with a view of removing the great annoyance consequent on the constant passage of urine. After full deliberation, they accepted the proposition.

"Accordingly, after due preparation, our patient was placed on a table, before a bright sunlight, in the knee and elbow position, the perineum elevated by the Sims speculum. The

mucus membrane of the vaginal wall was seized by the hook, and dissected off until the circle of the vagina was completed fully half an inch in breadth. Six silver sutures were deposited at very short intervals, with great difficulty and after many trials. The wires were brought together seriatim, twisted, cut off at about half an inch from the attachment, and brought forward so as not to fret the vagina. The patient was put to bed, and the self-retaining catheter adjusted. Opium was given at regular intervals, and perfect quietude enjoined.

"Mrs. C—— had no trouble after the operation; the urine passed by the catheter, which, however, became frequently blocked up with sabulous matter, and had to be often removed and cleansed. Her menstruation came on prematurely, passing with the urine by the catheter.

"On the twelfth day the sutures were removed; adhesion was found to have taken place throughout the whole circumference of the canal, except a small space at the left angle, through which urine passed freely. She was enabled, however, to retain a considerable quantity of urine, and to pass it *per vias naturalis*, at pleasure."

In two or three weeks after, the small opening mentioned was closed by two sutures, and perfect adhesion resulted. My patient returned to her home with the power of retaining her urine for any ordinary period, and of discharging it whenever she chose. She had no trouble from its retention in the unnatural receptacle.

Case IV.—Mary, colored, aged 32, from Williamson County, was confined with her fourth child in May, 1867. She was attended by a negro midwife, and, farther than the fact that she was in hard labor for forty hours, and gave birth to a still-born babe, no history could be obtained of her case. On the day after her labor, she discovered that her urine passed by the vagina. She had been operated on two or three times in the country, but without avail.

Upon examination, a large crescent-shaped fistula was found

just below the cervix uteri, about one and a half inches long and half an inch broad. The cervix uteri had been severely lacerated, from before backwards.

After a few days' preparation, Mary was brought before a part of our Medical class, and the fistula closed with twelve sutures. On the twelfth day the sutures were removed, and the case discharged cured.

CASE V.—Mrs. S——, of Overton County, aged 27, the mother of three children, was taken in labor with her last nearly two years previous to her visit. Her labor was protracted to sixty hours. She thought, but was not certain, that she was delivered with instruments. She had severe fever for several weeks afterwards. When she got up she found she had no control over her bladder. She had suffered greatly from excoriations, &c., produced by the passage of urine over her person, but was not aware that anything could be done for her relief until recently.

An examination revealed a small oval fistula, an inch and a half from the neck of the bladder, through which the end of the index finger could be readily passed. It was closed by six sutures. On the thirteenth day afterwards the sutures were removed, and the patient discharged well.

CASE VI.—Mrs. H——, of Rhea County, aged 35, the mother of six or seven children (some of whom were born since her injury), had been the subject of a vaginal fistula for more than ten years—produced by a prolonged labor. She had been operated upon several times without success, when she heard of the successful result of the preceding case. She immediately came to Nashville, and placed herself under my care.

About an inch from the neck of the bladder, a fistula, of oblong shape, an inch in the long diameter, was brought into view. The edges were formed of cicatricial tissue, and some bands passed up from the vagina to the cervix uteri. The lady, when she came under my observation, was three months advanced in pregnancy. Notwithstanding, I determined to proceed to an operation for her relief. The incision made em-

braced the cicatricial tissue around the fistula, removing it entirely. The denuded parts were then brought together longitudinally, by twelve sutures. In fourteen days they were removed, and the fistula was found cured, except a small opening not larger than a knitting-needle, at the left angle of the cicatrix, which was afterwards closed by two sutures.

CASE VII.—Sarah ——, colored, aged 20, from Davidson County; first birth; in labor over one hundred hours; was attended by a colored midwife. She noticed the dribbling of urine in two weeks after her labor, and nearly a year afterwards entered the hospital.

The examination revealed a small fistula, circular in shape, not more than a quarter of an inch in diameter, with cicatricial edges. After due preparation, she was submitted to operation. The hardened edges of the fistula were removed, the freshened surfaces brought into apposition with six sutures, the usual after treatment pursued, and in ten days the sutures were removed, and the patient discharged well.

CASE VIII.—Mrs. McC——, aged 27, of Carroll County, Tennessee. She had been married eight years, and had given birth to three children; always had difficulty in her labors, in consequence, it was thought, of white swelling in her right hip when a child. She had had a slight lameness in her right limb ever since, though, upon measurement, no difference could be detected. The last labor continued three days and nights, and had to be terminated by craniotomy. Two weeks after her confinement, when she got up, urine passed by the vagina, with subsequent incontinence.

On introducing the finger into the vagina, a very tense band was felt, encircling the canal, more than an inch from the ostium vagina. Above this band the fistula was felt, of sufficient size to easily admit the point of the index finger. As it was impossible to expose the fistula to the sight until the cicatricial bands had been freely divided, the scissors were freely used for that purpose; after which, the upper part of the vagina could be readily explored. The fistula was a transverse one, extending nearly across the vagina, and situated a

short distance below the cervix. The anterior lip of the cervix uteri was nearly destroyed.

The fistula was closed by twelve sutures. In fourteen days they were removed, and the patient was sent home well.

CASE IX.—Mrs. A——, of Alabama, aged 34, the mother of four children. About eighteen months before her visit to our city, she had given birth to a still-born child, after a tedious labor, without any special complication. She had a long spell of puerperal fever following, and when she got up, found she could not retain her urine. Her health had not been good, and she was yet pale, emaciated, and feeble.

Upon examination, a fistula, that would just admit the end of a female catheter, was found, situated at the junction of the vagina with the anterior lip of the cervix uteri, and very nearly circular in shape.

After several weeks' preparation she was submitted to operation.

Incisions were made on the lateral borders of the fistula, running well up into the anterior lip of the cervix uteri, and six sutures passed transversely, thus closing the opening longitudinally. The sutures were removed on the twelfth day, when the opening was thoroughly healed.

CASE X.—Mrs. M——, of Kentucky, aged 24, the mother of three children. The injury was produced at the birth of the last, from a shoulder presentation. She was in labor fifteen hours, and was delivered, after considerable difficulty, by turning. Had fever afterwards, with great soreness and pain in the region of the uterus and bladder. Water passed through the vagina after ten days. She had been suffering from the accident a year and a half.

Upon examination, I found the genitalia in a state of inflammation, and encrusted with deposits of lime. The fistula was oblong in shape, and extended from just below the cervix uteri to within half an inch of the neck of the bladder; its edges were occupied with cicatricial tissue.

After thorough preparation, local and general, she was sub-

mitted to the operation. Incisions were made so as to embrace and remove the hard inodular tissue on the edges of the opening. Then the opening was closed with twelve sutures in the axis of the vagina. In a few days after the operation she had an attack of vomiting, which lasted the greater part of twenty-four hours. When the sutures were removed, on the twelfth day, the upper three-fourths of the opening was closed, but the lower fourth was not.

After a month had elapsed, and the health of the patient had been improved by treatment, the opening was again closed, by six sutures. They were removed on the tenth day, and the patient sent home well.

CASE XI.—Mrs. D——, of Carroll County, Tennessee, aged 35, had, three years previous to her coming to Nashville, given birth to her first child, at full term. The labor was tedious, and the head of the child was detained, for eighteen or twenty hours, in the bony pelvis. She got up with an incontinence of urine, which had continued during the three years. She was a large fleshy lady, weighing nearly two hundred pounds, so that it was with no little difficulty that an examination was made.

A small fistula, not more than the eighth of an inch in diameter, was found about half an inch below the cervix, and a little to the right of the mesial line. The vagina was capacious and free, but its folds would come in the way in spite of my best efforts. The knee-elbow position was resorted to with some better success. The edges of the little opening was traversed by the hook, and while held up, was abraded with scissors, and three sutures used to close the opening. In ten days the sutures were removed. The operation proved an entire failure.

After three weeks' rest, the operation was again undertaken. With great trouble the fistula was pretty well exposed. For half an inch around the opening the vaginal mucus membrane was removed by scissors, in shape of an ( ), and the incision gradually deepened as it approached the fistula. The abraded surfaces were then brought together by six sutures in the axis

of the vagina. After twelve days the sutures were removed, and the patient discharged well.

CASE XII.—Mrs. S——, of Mississippi, aged 40, had been the subject of a vesico-vaginal fistula for several years, produced by the birth of her child. The labor was tedious and prolonged, without any special complication. Her health had since been bad, and was still so when she came under my observation. She had been submitted to several operations, without any benefit, and was very despondent as to the result of another.

The examination revealed a fistula at the junction of the urethra with the bladder, oblong in shape, three-fourths of an inch in length by one-fourth in width, with soft pliable edges.

After several weeks' preparation, by general and local means, her general health was improved, but she continued despondent. The operation was easily performed, the opening being closed with six sutures. She bore the operation well, but seemed much depressed afterwards.

On the fourth day, menstruation came on very profusely, and, in spite of means used for controlling it, continued until the tampon had to be used. She was left very feeble and weak from the hemorrhage.

On the ninth day the sutures were removed, and there was no union of the edges of the fistula.

The woman, although very feeble, got up for a day or so, but was then taken with cerebritis, caused, as was thought, by an embolus, and in three or four days she died.

CASE XIII.—Mary ——, colored, aged 24, from the southern part of Davidson County, had been afflicted with fistula for nine months, from the effects of a protracted labor with her first child. She first noticed the incontinence of urine twelve days afterwards.

The examination revealed an oval fistula, nearly an inch from the neck of the bladder, through which the index finger could be readily passed. Above the opening, the canal of the vagina had been rendered impervious by close adhesions.

The health of the patient being good, the extensive adhesion was divided up to the cervix uteri, with the scissors and finger; after which, a glass plug was inserted, and retained until the raw surfaces were completely cicatrized, and the vagina rendered pervious. Then the operation for closing the fistula was performed in the usual manner. Fourteen days afterwards the sutures were removed, and the patient discharged well.

CASE XIV.—Mrs. P——, aged 32, of Wilson county, Tennessee, was the mother of five children. The last labor, which occurred two years before her visit to the city, was unusually prolonged in consequence of the size of child's head, which had eventually to be reduced by craniotomy, before it could be delivered. She had violent vaginitis, with fever, and after ten days' severe suffering incontinence of urine came on. She gradually recovered, with the exception of the last mentioned symptoms.

Upon examination a long vaginal fistula was seen, extending from the cervix nearly to the neck of the bladder, with hard, thin cicatricial edges. The perineum was also extensively ruptured. The operation for its closure was performed at once, fourteen sutures being required. In ten days they were removed, and the fistula found entirely cured.

CASE XV.—Mrs. W——, aged 25, of Cheatham County, had had fistula about a year, caused by the birth of her first child. Her labor was exceedingly tedious, lasting ninety hours. No instruments were used. She had a long spell of fever after her delivery. When she got up, she found she had no control over the passage of urine.

Inspection revealed an oblong fistula situated about a half inch below the cervix uteri, its transverse diameter measuring an inch and one-fourth, its antero-posterior a half-inch. Its edges, which were soft and pliant, could be readily approximated.

After a few days' preparation, the operation for its cure was performed. Ten sutures were used. On the twelfth day the sutures were removed, and the patient discharged well.

CASE XVI.—Mrs. S——, aged 22, from Montgomery County, Tennessee, had been suffering from a vesico-vaginal fistula, situated at the bas fond of the bladder, about three-fourths of an inch in length, and running obliquely to the axis of the vagina. About eighteen months before her visit she had been delivered of her first child, after a prolonged and difficult labor, by the aid of ergot. A few days after her delivery, she discovered her urine passing off involuntarily.

Her health being good, an operation was resorted to without delay. Six sutures were used. On the tenth day they were removed, and the patient discharged well.

CASE XVII.—Mrs. H——, aged 35, from Perry County, had been the subject of a vesico-vaginal fistula for ten or twelve years, occasioned by a labor of seventy hours' duration, which was terminated by a forceps delivery of a still-born child. Eight or nine years previous to her visit, she had been operated on several times, by a distinguished surgeon, without avail.

An examination revealed a crescent-shaped fistula, situated a short distance above the neck of the bladder, an inch and a quarter in its long diameter, which was transverse to the axis of the vagina. Through this opening, a large tumor, formed of the vesical mucus membrane, protruded. Her general health was not good; she was anemic and sallow, from chronic malarial poisoning; she was very much depressed by her unpleasant condition, and not at all sanguine as to the result of another operation.

Several weeks were consumed in getting her in proper condition for the operation. The opening, after being thoroughly refreshed, was brought together by sixteen silver sutures. In twelve days they were removed, when the opening was found completely closed.

CASE XVIII.—Mrs. T——, aged 31, from Warren County, the mother of three children. The birth of the last caused the injury; she was in labor sixty hours; no instrument used. Dribbling of urine commenced in a few days afterwards.

Upon inspection I found great inflammation and excoriation

of genitalia, so that an examination was exceedingly painful. The fistula, oval in shape, and measuring half an inch in its long diameter, was transverse to the axis of the vagina, and situated in the trigone vesicæ. The health of the patient was very good.

After a few days' preparation the operation was performed, the opening being closed by six sutures. On the tenth day they were removed, and the opening found closed, except at the left angle, where an opening, not larger than a rye straw, was found, through which the urine freely escaped.

The second operation was performed, after three weeks, two sutures being used, with the effect of completely closing the opening.

Case XIX.—Mrs. M——, aged 28, from DeKalb County, after a tedious labor, lasting seventy hours, was delivered, without instrumental assistance, of a still-born babe. She was quite ill afterwards, and, when she began to sit up, found she had no control over the passage of her water. She had continued feeble and anemic until her visit to our city for relief. At that time, a year had elapsed since her confinement. Upon examination, an oblong fistula was discovered in the vesical triangle, about an inch in diameter, in the axis of the vagina.

After improving her general health, the opening was closed by eight sutures. At the end of ten days she was discharged well.

Case XX.—Mrs. T——, aged 41, from Hickman County, mother of four children—three living, the last still-born. The last labor, which gave rise to the accident, was prolonged to forty-eight hours, and was completed without instrumental assistance. In a few days her water was discovered dribbling away. Upon examination, a small oval fistula was found in the trigone vesicæ, not more than a quarter of an inch in its long diameter.

Her health being good, an operation was done at once. The opening was closed by four sutures. After ten days they were removed, and the patient discharged well.

CASE XXI.—Mrs. P——, aged 24, from Hickman County, mother of two children. In her first labor, great difficulty was experienced, and the delivery was effected after craniotomy. Incontinence of urine existed from that time. After she got up, she had bad health for a length of time, but became pregnant two years after her first delivery, and gave birth, at term, to a living child.

At the time of her visit to Nashville, her health was very good, but she was suffering greatly from her local trouble.

Upon examination, an oblong opening, oblique to the axis of vagina, was found, situated about an inch above the neck of the bladder, nearly an inch in diameter.

After its margins were well denuded, the fistula was closed by the introduction of eight silver sutures. The patient was discharged cured.

CASE XXII.—Mrs. M——, aged 25, from Wayne County, in her first labor, gave birth to a still-born child, after sixty hours of terrible suffering. In eight or ten days afterwards, she found that she had no control over the passage of the urine. Having endured the suffering for five years, she was encouraged to hope for relief by the cure of a patient in an adjoining county.

Upon examination, an opening through the vesico-vaginal septum was discovered, just above the neck of the bladder, circular in shape, and an inch in diameter. The operation for its cure was successful.

CASE XXIII.—Mrs. G——, aged 22, of Wilson County, nine months before her visit, had given birth to a still-born babe. Her labor was protracted to ninety hours, and was terminated by craniotomy and evisceration. She suffered intensely from inflammation of the vagina and surrounding parts, followed by extensive sloughing. About ten days after her delivery, she noticed the dribbling of water.

On examination, a transverse opening was discovered about half an inch from the meatus, an inch in its long diameter, severing the urethral canal entirely, its two extremities being

half an inch apart. In addition, the poor patient had a rupture of the perineum, extending an inch into the rectum.

Her general health being good, she was submitted to operation as follows:

The whole extent of the fissure was denuded of its mucus membrane, including the edges of the urethra on each side, as far as its lining membrane. Nine sutures were used, three on each side of the urethra, and three on that canal. Of the urethral sutures, one on each side passed through the vaginal edge of the fissure and the edge of the urethra, the middle one passing only through the vaginal tissues over the divided extremity. A catheter was passed through the canal into the bladder, when the sutures were twisted, thus approximating the edges.

On the twelfth day the sutures were removed, and the opening found to be closed completely.

In a few weeks she discovered that she had not recovered complete control of her bladder. While lying down no urine escaped, but when she got up, a part escaped through the meatus.

Two or three months afterwards, the ruptured perineum was closed by operation, in the hope that it would cure the incontinence, but, although much improved, she has not yet attained complete control of the bladder.

CASE XXIV.—Mrs. S——, aged 38, from Kentucky, the mother of three children, the birth of the last of which gave rise to the accident. The labor was tedious, but terminated without instruments. She noticed water passing off involuntarily after a week.

Upon examination, a small circular opening in the trigone vesicæ was discovered. It was closed by five silver sutures. The patient went home well in two weeks.

It will be seen that the number of operations for vesico-vaginal fistula in Tennessee, of which an authentic history

could be obtained, is twenty-eight, of which the following is a summary:

OPERATOR.	NUMBER OF CASES.	SUCCESSFUL.	UNSUCCESSFUL.
Dr. H. R. Robards	2	1	1
Dr. W. E. Rogers	1	1	0
Dr. T. L. Maddin	1	0	1
Dr. W. T. Briggs	24	23	1

NUMBER OF OPERATIONS PERFORMED.

OPERATOR.	IN SUCCESSFUL CASES.	IN UNSUCCESSFUL CASES.
Dr. H. R. Robards	2	4
Dr. W. E. Rogers	1	0
Dr. T. L. Maddin	0	1
Dr. W. T. Briggs.. In 5 cases	2	0
Dr. W. T. Briggs.. In 18 cases	1	1

Of this number, twenty-five (25) were white and three (3) colored.

The fistulas occurred, from

First labor	18
Second labor	2
Third labor	3
Fourth labor	4
Fifth labor	1

MANNER OF DELIVERY.

Natural efforts	17
Ergot	2
Version	2
Forceps	3
Craniotomy	4

SITUATION OF FISTULA.

Urethra	1
Trigone vesicæ	18
Bas Fond	7
Extending from bas fond to trigone vesicæ	2

TREATMENT.

In the management of vesico-vaginal fistula, the preparation of the patient, the operation, and the after treatment, will demand the attention of the surgeon.

In no operation in surgery is success more dependent on the constitutional condition of the patient than in this. The same rules should guide us in the preparation of the patient for this as for other important operations; every means should be used to improve the general health, so that the digestive organs may be active in the performance of their function, the various secretions naturally eliminated, and the blood state normal. It may require a few days, or a few months, to put a patient in proper condition—but whether a few days or months are required, it should not be neglected.

Nor is attention to the condition of the parts immediately involved less important; all inflammatory action must have subsided, the edges of the fistula must have become thickened, well supplied with blood-vessels, and sufficiently firm to bear the traction of the sutures.

Especial attention should be directed to cleanliness, by injections of tepid water or warm soap-suds, or, what I regard better, chlorate of potash and glycerin—say a drachm of potash with an ounce of glycerin to a pint of tepid water—to be used at once, and repeated every two or three hours.

If the edges continue thin and pale, scarifications over their surface, with the application of the solid nitrate of silver every two or three days, will cause them to become more voluminous and vascular in a short time. Should the edges of the fistula, or other parts of the genitalia, become encrusted with earthy deposits, they should be washed with a weak solution of one of the mineral acids, and at the same time the nitric or nitro-muriatic acid should be given internally.

For the relief of excoriations consequent upon the urinous stillicidium, nothing has proved so beneficial in my hands as the oxide of bismuth and glycerin, in the proportion of one part of the former to two of the latter. After each bathing,

this preparation should be freely applied over the parts affected.

Should complications of any character exist, they should, if possible, be removed.

One of the most frequent is stricture of the vagina, which may vary from the slightest diminution in the caliber of the canal to its almost complete obliteration. This stricture may be removed by incision or dilatation. In either method there is a strong tendency to relapse. Success is more generally attained by a combination of the two methods. Slight incisions should be made through the mucous or submucous tissues, at a number of points, and then dilatation effected with sponge-tents, slippery elm bougie, or the elastic bags.

An operation should not be attempted for two and a half or three months after confinement, for the system does not recover from the disturbing influence of the parturient act sooner. Before this time has elapsed, inflammation, to which woman is then most susceptible, is liable to be excited, either in the peritoneum, uterus, or the pelvic cellular tissue; or a local inflammation of the parts involved may ensue, which, though not dangerous to the patient's life, may yet be sufficient to destroy the promise of the best-executed operation.

It is important, too, to choose a time four or five days after a menstrual period for the operation.

On the day previous, a purgative, which will evacuate the whole alimentary canal thoroughly, should be administered, so that the bowels may not be disturbed for several days afterwards.

Without referring to the various modifications of the operation for the radical cure of vesico-vaginal fistula, I will take the liberty of detailing to the Society the procedure which I have adopted, claiming nothing new in connection with it.

Time for Operation.—The morning of a bright day should be chosen, and a room should be selected which has windows on its southern or southeastern side.

Assistants.—Three or four assistants will be required, though I have often got along without difficulty with two—one to

hold the speculum and the other to cleanse and hand the sponges.

Instruments Essentially Necessary.—Sims' lever speculum; a tenaculum, with long shaft and a short turn at its extremity, nearly at right angle; a pair of long rat-toothed forceps, slightly curved; two long-handled scalpels, with short narrow blades; two pair of long angular scissors; one pair of scissors curved; four or five long-handled sponge-holders; Stohlman's canulated needle; a blunt hook, with long handle; shield for supporting the wires while being twisted; forcep for twisting the wires; a coil or two of fine annealed wire, made of virgin silver.

Basins of water, hot and cold, with sponges, cloths, &c.

A table, three feet high, four or five feet long, and two or two and a half wide, covered with several folds of blankets or quilts.

I prefer not to use any anæsthetic.

Operation.—Everything being ready, the patient dressed in a loose gown and a pair of drawers, is placed on the table, and brought before a large window, through which a flood of sunshine is passing. She lies on her left side, with the thigh bent at right angles with the pelvis—the right a little more flexed than the left; the left arm behind the back, the chest brought down flat on the table, the sternum touching it, and the buttocks brought to the edge of the table. (In some few cases, the fistula is best exposed in the knee-elbow position, but, as a rule, the position described is better.) The speculum is now to be introduced, and handed to an assistant, who is directed to draw it back towards the rectum when the air rushes into the vacuum and distends the vagina so that every part, except that upon which the blade rests, is satisfactorily exposed.

With the long tenaculum in the left hand, the mucous membrane, near the middle point of the anterior lip, is seized, nearly half an inch from the border of the fistula, and made tense; then the point of the knife is entered just behind the tenaculum, and passed through the vaginal mucous membrane

to the submucous cellular tissue. It is next carried across the anterior lip of the fistula, and, if possible, around its whole circumference. Sometimes, however, the incision cannot be carried continuously around the opening, and then the tenaculum is again brought into requisition, and the point of the knife carried through the mucous membrane at nearly the same distance from the posterior edge of the fistulous lip, and carried across to join the anterior incision at an acute angle. With the rat-toothed forceps, the edge of the incised mucous membrane next to the fistula is seized, and dissected from before backwards on the anterior lip, and from behind forward on the posterior, until the vesical mucous membrane is reached, when the separated membrane is snipped off with the curved scissors. The angle of the incision should receive especial attention. In fact, this whole stage of the operation is all important, and the successful issue of the case depends upon its proper performance. To simply pare the edges of the fistula, as is sometimes recommended, is not sufficient; the vaginal mucous membrane, to the extent of from one-third to half an inch, should be removed from the margin of the opening.

As this part of the operation is being accomplished, the sponge-holder is frequently called into requisition, for, often, the bleeding is pretty free. It most generally ceases spontaneously; if troublesome, however, the use of iced water will check it; or it may be necessary, in some cases, to twist the small vessels with a pair of long artery-forceps.

Another difficulty that is sometimes encountered in this stage of the operation is the protrusion of the vesical mucous membrane. Usually, this is easily managed by passing a soft sponge through the opening into the bladder, allowing it to remain until the sutures are ready for adjustment.

This much having been accomplished, the patient, if much fatigued, should be allowed to place herself in a more comfortable position, and rest for ten or fifteen minutes.

The second step of the operation is the introduction of the sutures. The direction in which the approximation of the sides of the fistula can best be effected, must be determined;

most generally it is best done transversely, but in some instances, as when the fistula is long and narrow, and runs in the axis of the vagina, it will be approximated best in the longitudinal direction; or, in other instances, we may bring them together obliquely. Our remarks in reference to passing the sutures will apply to the closure of the opening transversely.

In my earlier operations, I used short, stout, spear-pointed needles, straight and curved, armed with silk passed through the eye double, held in the grasp of a long-handled needle-carrier. After the needle had passed through both lips of the fistula, and the silk deposited, the silver wire was placed in the loop of the silk, and bent over, so as to be fastened to it. The opposite end of the silk was then seized and drawn out, carrying the silver to its place. For several years I have been using, with great satisfaction, a canulated needle, known, most generally, as Stohlman's needle. It consists of a handle, to which may be connected differently-shaped canulated needles. The handle itself is perforated, which perforation is continuous with the hollow of the needles, and upon the side of the handle, near its junction with the needle, is a serrated wheel, fixed on a spring, which may be forced in, by pressure of the finger upon the opening. The wire is inserted at the end of the handle, and after it is passed beyond the little wheel, may be projected forward or backward by pressing and turning the wheel.

The tenaculum is now inserted into the anterior lip, near one of its angles, so as to steady and make its edge tense; the canulated needle, properly armed, is entered half an inch from its incised border, carried downwards and forwards until its point emerges in the denuded portion, at its junction with the vesical mucous membrane. The tenaculum performs the same service for the posterior lip; the needle, carried across the opening, is made to enter the abraded edge of the posterior lip, as near the mucous membrane of the bladder as possible, and carried far enough forward to emerge half an inch from its abraded margin. As the needle is emerging on the mucous

surface of the posterior lip, the blunt hook should be used to aid the passage of the point of the needle, by pressing the parts towards it. The wire is now to be shot forward, by pressing and turning the wheel; as soon as it emerges from the instrument, it should be seized, drawn downwards, and held while the needle is withdrawn, leaving the silver wire in place.

The remaining sutures are to be passed in the same manner, at the distance of two lines from each other, until a sufficient number have been deposited to close the opening.

One who has never used this beautiful instrument cannot imagine the ease and celerity with which the sutures may be placed.

This finishes the second stage of the operation, and the patient can again rest a few minutes. Then the first suture, having been isolated from the others, and drawn together with the fingers, is seized with the twisting forceps, slipped into the fissure of the shield, and twisted until the edges of the wound are brought accurately in contact. In the same manner the remaining sutures should be seized and twisted, until the lips of the entire wound are closely approximated.

Care should be taken to have the lips of the wound drawn evenly together, and to have the sutures neither too tight nor too lax. This can be easily tested, first, by passing an ordinary silver probe through the loop of wire; if it passes without force, the sutures are not too tight. Next, by injecting tepid water into the bladder; if the wound does not permit the escape of a drop of the fluid, they are not too loosely applied. Each suture is now clipped about half an inch from its insertion, and pressed down flat against the vaginal wall.

The parts are thoroughly sponged, and the bladder washed out with tepid water, the patient placed in bed, and an opiate administered as after other operations.

AFTER-TREATMENT.

The most troublesome and unpleasant part of the management of vesico-vaginal fistulæ since Dr. Sims first demon-

strated their curability to the world, has been the after-treatment which was thought to be essential to the successful issue of the operation.

The introduction and retention of the catheter, for the purpose of keeping the bladder empty, and of preventing the urine from coming in contact with the freshly united edges of the fistula; the absolute maintenance of the horizontal position, the patient being compelled, the greater part of the time, to lie on the back, and the control of the intestinal movements by the regular administration of opiates, have been believed to be so important to the successful issue of the operation, that a neglect of either would inevitably result in a failure. Such had always been my belief, consequently I had paid especial and strict attention to the after-treatment recommended by Dr. Marion Sims, and followed by almost every surgeon who had attempted to operate.

In my first case, from excessive irritation of the bladder, caused by the catheter, the patient was unable to bear its presence for a moment, and passed her urine by the urethra as she lay in bed. The cure was as perfect as any I have since had; still I was not impressed with its importance as I should have been.

In 1869, while attending the meeting of the American Medical Association, at New Orleans, I heard Dr. M. Schuppert, of that city, read a paper before the Section of Anatomy and Surgery, on the abandonment of the usual after-treatment of vesico-vaginal fistula. Dr. Schuppert had operated on a sufficient number of cases to establish, beyond a doubt, the soundness of the practice. Of six cases, five were cured by the first operation.

Simon, of Heidelberg, is, without doubt, the first who advocated the practice. Spencer Well, the distinguished ovariotomist, adopted it. Alfred Meadows, of London, recommends it. But in our country, so far as I know, Dr. Schuppert and myself are the only operators who have adopted it as a rule. Dr. Schuppert reports a case which Dr. Samuel Choppin, of New Orleans, had failed to cure by two operations with

the ordinary after-treatment, while in the third all after-treatment was abandoned, with the result of a perfect cure. I do not know, however, whether Dr. Choppin abandoned the usual after-treatment in his subsequent cases.

I commenced the trial of the plan very cautiously.

In the first case (Case VI.) I ordered the catheter to be removed, and left out for an hour or two at a time each day, from the date of the operation, but to be retained at night; and that the patient should change her position in bed at pleasure. The result was successful.

In the second (Case VII.), after the first twenty-four hours, I directed the catheter to be withdrawn, and to be used every two or three hours, except at night, when the instrument was to be left in the bladder. The patient was allowed to sit up at pleasure. The result was successful.

In the next case (Case VIII.), the catheter was used every two or three hours for the first day; afterwards, however, the patient passed the urine by her natural efforts, at will. She was not confined to the bed at all, but went where she pleased. She was in the habit of evacuating her bowels only once a week, and had no occasion to have an action until a few days before the sutures were removed.

Satisfied with the success of the plan, I have not resorted to the usual after-treatment in my subsequent cases.

I direct the patient to lie quietly in bed for a few hours; if in pain to take an opiate; to have the catheter used every two hours for the first twelve hours; afterwards to pass her urine naturally; to get up and go about as usual, and to allow the bowels to move when she has the desire. If there is any inability on her part to pass water, then the catheter should be resorted to, as may be indicated.

The author of the article on vesico-vaginal fistula, in *Holmes' Surgery*, says that "we may fairly rank the operative cure of these distressing conditions as a finished achievement." I can now repeat that, with the abandonment of the annoying, wearisome, and not always safe, after-treatment, the operation for the relief of these fistulæ is a "finished achievement."

The patient being in good condition, *the only requisite,* I think, for complete success in the operation for vesico-vaginal or vesico-uterine fistula, *is the proper removal of the mucous membrane and submucous tissue around the fistula, with co-aptation and maintenance of the abraded borders from eight to fourteen days.*

The Removal of the Sutures.—On the tenth or twelfth day after the operation, the sutures should be removed by placing the patient in the same position as for the operation, introducing Sims' speculum, and grasping the end of one of the wires with the twisting forceps, drawing it down gently until the loop can be reached and the nearest side clipped, when traction will remove the suture. One after the other is thus removed, especial care being taken that no violence is done to the new adhesions.