hospital. The stump was then nearly well. After leaving the hospital, the chest symptoms returned, and he died two months afterwards, phthisical.

CASE IV. Henry B., aged 38, was admitted under Mr. Hawkins's care, on September 1st, 1858, on account of a disease of the knee-joint, attributed to a sprain eighteen months before admission. It is unnecessary to go minutely into the history of the disease in the joint, which was treated by means of calomel and opium, blisters, mercurial frictions, etc., but without any benefit, as abscess formed and was opened externally, as well as extending up among the muscles of the thigh for a considerable distance. Accordingly, it was thought better to amputate the limb at once. He had had a cough for three years before his admission, but not to any very great extent. Examination of the chest did not reveal any distinct sign of phthisis. The operation was performed on January 6th. Notwithstanding the presence of abscess in the soft parts which formed the anterior flap, a good deal of union occurred; and he went on so favourably as to be able to sit up in a chair a fortnight after the operation. This improvement in the state of the parts was, however, coincident with a great deterioration in his general health. The cough recurred, his health failed, and on the 24th, the posterior line of union began to slough. This sloughing advanced rapidly down to the bone, which became exposed, and was apparently in process of necrosis. He became rapidly exhausted, but without much cough, and sank on February 4th. Shortly before death, the anterior part of the stump began to present a sloughy appearance, as if the end of the bone was about to penetrate it.

POST MORTEM EXAMINATION showed extensive gangrene of the stump, so that the end of the femur projected from the opening at the back. It was necrosed for the space of about half an inch. Both lungs contained a large quantity of crude tubercle, but no vomicae. There was extensive strumous ulceration of the intestines.

CASE V. Henry H., aged 55, was admitted under the care of Mr. Tatum, on December 11th, 1858, on account of an accident in which a bullet had lodged in the dorsum of his foot, between the first and second toes. This had been extracted. He was an exceedingly nervous and irritable man, and presented the appearance of a drunkard, although it was said that his habits had been temperate. A large quantity of stimulants and tonics was prescribed, but the wound became sloughy, diffuse inflammation attacked the foot, and large abscesses formed in every part of the extremity. Under these circumstances, as the man was evidently sinking, it appeared right to give him the chance of amputation; and accordingly, the extremity was removed by the rectangular flap operation in the lower third of the leg, on January 27th. The arteries were found only slightly atheromatous, and there was no apparent disease beyond the superficial sloughing and abscess.

There was nothing remarkable in the operation, and the ends of the bones were well covered, without pressure; but the patient's state of health was such that no operation would probably have succeeded. The flaps soon sloughed, and he died exhausted on February 12th. No *post mortem* examination was made.

CASE VI. Charles H., aged 13, a boy of very scrofulous aspect, was admitted under the care of Mr. Johnson, on account of caries of the tarsal bones and ankle-joint of six years standing. Some necrosed bone had been removed about a year before, but this had not checked the disease, which had now advanced to such an extent that amputation was inevitable. The presence of extensive sinuses about the lower part of the leg rendered Mr. Johnson unwilling to adopt Syme's method of amputating, and accordingly the leg was removed in the lower third by the rectangular flap operation, on February 17th. The success of the operation was perfect, and the boy left the house within less than three weeks of the date of amputation (March 9th) with the stump completely healed.

CASE VII. Thomas H., aged 46, was admitted under Mr. Hewett's care on February 14th. He had been a man of very intemperate habits, and had been suffering from disease of the tarsus for nine years. The disease had at first so far yielded to treatment as to allow of his walking about from three years after the commencement of the ailment until last October, although the joint had never been free from pain. At that period abscesses formed in various parts of the foot, from which, on his admission, raised papillae projected, leading to exposed and carious bone. As his health was giving way under the disease, and as the latter was too extensive to allow of any hope of cure by milder means, and he was anxious to have the leg amputated, Mr. Hewett acceded to his wish, and

removed the leg at the lower third by the rectangular flaps on February 17th. The man, however, did not do well. Although he suffered very slightly from the chloroform, the limb soon became painful, and inflamed. He was very low and weak, with an anxious countenance, bad appetite, dry tongue, and weak pulse. The stump soon afterwards sloughed, but not to so great an extent as not to leave a very fair covering for the ends of the bones when the sloughing stopped, as it did in a few days, when he experienced a temporary improvement. But this did not last long.

In the early part of the present month, he began to suffer from cough, having had an old winter cough for many years, and soon the stump again began to slough; the discharge was profuse and intolerably fetid. Still the bone was not exposed, and had it been possible for him to have recovered, there would have been quite enough soft parts to cover the bones. His constitutional weakness, however, rendered this impossible, and he sank gradually, without any fresh symptoms, dying on March 26th, apparently of exhaustion merely.

A *post mortem* examination was refused.

Original Communications.

FOUR CASES OF VESICO-VAGINAL FISTULA.

By I. BAKER BROWN, Esq., F.R.C.S., Surgeon to the London Home for Surgical Diseases of Women, etc.

SINCE I had the honour of reading at Edinburgh a paper relating eleven cases successfully treated by operation, five more have appeared in the BRITISH MEDICAL JOURNAL, under the head of St. Mary's Hospital Reports; thus making sixteen cases. I now relate four more, making up the number to twenty. The practical value of this success will be apparent to every surgeon.

CASE I. (Reported by W. F. Wratishaw, Esq., Visiting Surgeon.) *Vesico-Vaginal Fistula of Seven Years Duration: Twenty-five Operations: Ultimate Cure.* Eliza Z., aged 29, married, in July 1851 was delivered, with instruments, of her first child, after a labour of three days duration. Twelve hours after labour, her urine escaped involuntarily, giving her great pain. On April 29th, 1852, she was admitted into St. Mary's Hospital. On examination, the vagina was found to be almost obliterated by cicatrizations. On the left side, the finger passed into a *cul-de-sac*, at the end of which was felt the os uteri. Across the other part of the vagina was a large fistulous opening into the bladder. On May 5th, I operated upon her, and closed a large portion of the fistula. She then left the hospital; and becoming pregnant, aborted in the third month. Five weeks afterwards, she was readmitted; and the second, third, fourth, fifth, and sixth operations were performed upon her, in addition to the actual cautery being used. During these repeated operations, the bands of cicatrization were cut through, and the os uteri turned into the bladder, as it appeared easier to close the fistula by so doing. She then left the hospital; and the seventh, eighth, and ninth operations were performed at her own house. She then went to Dover to recruit her strength; and when she returned, the tenth operation was performed at her own house. In 1854, she returned to the hospital, and the eleventh operation was performed. On November 1st and December 24th, 1856, she had the twelfth and thirteenth operations performed at her own house. On February 3rd, 1857, she was readmitted into St. Mary's Hospital, and the fourteenth operation was performed. After this, she went into another hospital; and in August, was operated upon with harelip pins, and in November, with common sutures. She was readmitted into St. Mary's on April 5th, 1858, and I performed the seventeenth operation. On April 28th, the eighteenth operation was performed. On May 19th, Bozeman's operation was performed, making the nineteenth. This did not succeed; and she was discharged on June 20th, to recruit her general health.

She entered the London Home, on July 3rd, 1858. There still remained two openings: one would admit a No. 12 bougie situated near the urethra; the other was a small one, barely admitting a probe. There was a strong band of adhesions, extending from the walls of the vagina to the point of the larger opening.

July 5th. Bozeman's operation was performed, and the adhesions divided. The urine escaped on the fourth day.

July 24th. I freely divided the bands of adhesion, and plugged the vagina with a large sponge-tent covered with oiled silk. This was changed every other day.

August 3rd. On proceeding to operate on this day, it was discovered that the smaller opening communicated in a circuitous manner with the under edge of the larger one; I therefore opened the track, and made the two openings into one. The vagina was ordered to be regularly plugged with full-sized sponge-tents.

August 17th. Bozeman's operation was performed, using a leaden button and six sutures. The urine escaped on the seventh day. On removing the plate, it was found that one of the deep incisions had laid open the cervix uteri about an inch from the os, which was still in the bladder. Through this opening, an uterine sound could be easily passed into the uterus.

October 3rd. Bozeman's operation was performed with five sutures, with the effect of reducing the opening to the size of a pin's head.

November 2nd. Bozeman's operation was performed; but the urine escaped on the same night; and on

November 4th. The operation was re-performed. The button remained on nine days, but still there was a slight escape of urine through a very small opening. However, the parts had a healthy granulating appearance; and she was recommended to remain quiet in bed; and very little urine escaped that night. None escaped on the following day and night. From this time she lost none, and freely passed it at pleasure.

November 28th. A most careful examination found every part firmly united, and no sign of the old fistulous opening.

January 20th, 1859. She now menstruates through the vagina, which she had not done for years; and her vagina was of the ordinary size. Her health and spirits were good, and she was making a most cheerful and inspiring nurse.

REMARKS. This case is full of interest, and exhibits an amount of courage and perseverance on the part of the patient which is beyond all praise. Such a series of operations is not likely to occur again, as the new method will enable us to grapple at first more successfully with the difficulties.

CASE II. *Vesico-Vaginal Fistula: Four years and a half Duration: Operations: Cure.* Jane B., aged 26, a very short small made woman, was admitted into the London Home on October 20th, 1858. Mr. Humphreys, of Shrewsbury, kindly sent this patient to me.

She said that she had been delivered four years and a half previously with instruments after a labour of thirty-six hours duration. For the first few days she passed her urine properly; and nine days afterwards she had retention, which necessitated the use of the catheter. After a good deal of pain for three days, her urine came away with a gush; and since that time she had never been able to retain any portion in any posture. It always flowed away from her without the slightest control. She had undergone about twenty operations unsuccessfully.

On examination, an opening was found of the size of a half-crown situated close up to the os uteri. There was a great deal of spasmodic action about the bladder, so that the mucous membrane of its cavity constantly protruded through the fistula, and filled the vagina, looking like a vascular tumour. The edges of the opening were thin and soft. The vagina was a good deal contracted; and one band of cicatrisation was thick and strong, and drew the lateral wall of the vagina towards the angle of the opening, and formed an obstacle to the apposition of the edges.

I determined to endeavour to reduce the size of the fistula before dividing the bands of adhesion; and, therefore, on November 2nd, proceeded to perform Bozeman's operation. The patient having had chloroform, and being placed in the lithotomy position, I pared the edges of the fistula, and succeeded in removing the whole circumference in one piece. The mucous membrane of the bladder which protruded very much during this part of the operation, was held up with spatulas. Seven iron wire sutures were then inserted, and a leaden button was put on, and the operation was completed in the usual way. She had two grains of opium, and the catheter, with an attached bag, was left in the bladder.

November 3rd. She had great sickness. The catheter caused a good deal of irritation. The sickness abated gradually, and she went on well until November 11th, when a little urine escaped.

November 15th. I removed the button, and found the greatest portion of the opening firmly healed. The opening

which remained was the size of one wire, which cut itself nearly out, and thus formed the fistula.

December 9th. The parts having become firm, I freely divided all the constricting bands; and the vagina was plugged with oiled lint.

December 12th. The lint was renewed, and large sponge-tents were ordered to be introduced every day.

December 24th. The divided parts having healed, Bozeman's operation was this day performed. It required three sutures and a leaden button with three holes, and silver sutures.

She was very sick after the operation, and became so exceedingly irritable, that she would not remain quiet, and was constantly withdrawing the catheter herself; so that on the seventh day after the operation, there was again a slight escape.

January 24th, 1859. I again performed Bozeman's operation. The patient this time was placed on her hands and knees, and did not have chloroform. It required again three sutures and a leaden plate with three holes. She was not sick this time, and remained much more steadily under control. Everything went on well, and there was no escape whatever.

February 5th. The button was removed, and the whole fistula was found firmly healed and the parts quite sound. She could retain her urine quite well, and passed it with perfect command; and in a week left the Institution quite well.

REMARKS. The failure of the first operation here, I am convinced, arose entirely from the iron wire cutting itself out up to the line of union, and as I have observed the same thing to occur in other cases where there was any tension from constriction after laceration of the vagina, I now always employ silver wire.

CASE III. *Vesico-Vaginal Fistula: Operation: Cure.* The previous history of the case was furnished by Dr. J. Hall Davis, who placed the patient under my care. "M. D., aged 30, a woman of stout habit, good conformation, and previous good health, was taken in labour of her eighth child, March 1st, 1856, at 9 P.M. Her midwife was sent for at 10 P.M.; and arriving soon afterwards, found the liquor amnii already escaped, the breech at the brim of the pelvis, the os uteri dilated to the size of half a crown; active labour was present. At 4 A.M. (March 2nd,) the orifice of the uterus was fully dilated, and the breech had reached the pelvic outlet. The pains continued strong throughout the night; and, in consequence of the pressure exerted on the neck of the bladder, the midwife had found it necessary to empty that organ with the catheter.

"At 11 A.M. (March 2nd), no progress having taken place notwithstanding ample parturient action, the parts, moreover, having become heated and swollen, the patient being much fatigued with fruitless efforts, I was sent for and arrived shortly afterwards (half-past 11 A.M.). I found the breech at outlet, swollen, and impacted, the parts heated. I introduced the catheter and removed a little urine, and having satisfied myself that another mode of delivery was impracticable, I proceeded to deliver by visceration, which I effected through the outlet of the child's pelvis. Thus the abdomen was diminished, and very moderate traction completed the birth. The child (a female) was large, swollen, but not putrid. I gave it as my opinion that the child should have been delivered earlier,* with the necessary precautions. The delivery of the child occupied rather more than an hour, and the placenta, being thrown off spontaneously into the vagina, was removed soon afterwards. In the course of the following days the patient was the subject of acute peritonitis, which was treated by application of leeches to the abdomen, hot linseed poultices, and turpentine stupes. Vaginitis also ensued, and sloughing of the portion of the vesico-vaginal septum, leaving an opening of the size of a five shilling piece. For the latter inflammation and its consequences, warm water with a weak solution of chlorinated soda was employed as an injection; and the catheter was resorted to till the fistulous opening occurred. At the end of three weeks the patient was up and about. After this I merely suggested frequent ablution with tepid water, injections into the vagina to prevent calcareous deposits on the mucous coat. The patient being of very cleanly habits, this was properly attended to.

"I hoped that, in the course of time, such an amount of contraction of the fistula would take place as would warrant some attempt being made by surgical operation to close the aperture.

* The above M. D. was a patient of one of the Lying-in Charities under my care; and her case of fistula, tabulated in the statistics of my work (table XI, p. 275), is the only instance of a urinary fistula which has occurred to me in any of the Charities under my direction—comprising 7302 deliveries. (J. H. D.)

I was not disappointed in this, and becoming subsequently acquainted with the success of Dr. Bozeman's operation, founded, but greatly improved, upon that of Marion Sims of New York, and having already witnessed one case of complete cure of a large urinary fistula (A. T., case viii, operated on June 10th, Mr. Brown's Pamphlet), on which I had been consulted before operation, I was induced to place this case under Mr. Baker Brown."

The patient was operated on November 1st, 1858, at the London Home, in the presence of Dr. Davis and several other practitioners. The edges of the opening, now reduced at least three-fourths of its original dimensions, extending transversely, situate at the junction of the urethra and neck of the bladder, were first pared, the patient being under anæsthesia. The edges were then brought together by silver wires, silk threads, previously passed through, being used as their conductors, and then removed. The two halves of each wire were then passed through a hole in an oblong plate of lead, suitable to the opening to be covered. This plate was then with a special instrument pressed firmly upon the opening, the wires made tense. A shot, perforated by one aperture, was then passed over the two halves of each wire, pressed firmly up to the plate, and nipped with a well adapted pair of pincers, so as to obliterate the aperture of the shot upon the wire. Thus the plate was fixed securely in its place, and the surplus wire being cut off, the operation was complete. The patient was operated on in the position for lithotomy, and the vagina was well dilated by a special speculum and by tenaculum forceps, held by steady assisting friends. After the operation the patient was placed on her side, with an elastic catheter in the bladder, attached to a caoutchouc tube and bottle; the bowels were constipated by opium, having, previously to the operation, been well opened by aperients. Full diet was ordered.

On the eighth day the plate was removed, and a linear cicatrix was visible in place of the former aperture; no leakage whatever observable.

Two days afterwards, it was evident, that a minute aperture yet remained, and a second operation was performed, from which Dr. Davis was unavoidably absent. The result is, that the cure is now quite complete.

CASE IV. *Vesico-Vaginal Fistula, Five Months Duration: Operations: Cure.* T. C., aged 19, married, was taken in labour on October 29th, and was delivered with forceps on October 31st, after a hard labour. There was a good deal of irritation of the bladder afterwards; and in a few days all her urine came away without any control on her own part, and continues to do so now in all postures alike.

She was admitted into the London Home on December 2nd, 1858. An examination showed an opening of the size of a florin, situated about half an inch from the os uteri. The edges were very unhealthy, having an ash-gray look, and evidently inclined to slough. The whole vagina was very sore and excoriated. She had a good deal of constitutional depression with headache, with tenderness and swelling in the left inguinal region deep in the pelvic cavity, shivering, constipation, and much wasting. She was given decoction of cinchona with dilute nitric acid, generous diet, and opiates at night.

She gradually improved much in general tone, and the vagina became more healed. The edges of the fistula cleaned. The cicatrization of the vagina contracted; and several bands formed which dragged upon the opening. On January 3rd, 1859, she was put under chloroform, and I divided these bands, and plugged the vagina with oiled lint, which was changed every day. This gave much more room.

January 23rd. I performed Bozeman's operation, the patient being placed on her hands and knees, without chloroform. A leaden button and six sutures were used.

January 24th. Some urine had escaped.

January 26th. The pulse 140; the tongue dry. She was ordered to have some blue pill and extract of colocynth.

January 27th. The bowels were well opened, and she was much improved. There was an escape of urine.

From this time she improved in her general health, and on February 4th, I removed the button. The fistula was found to be healed in the middle in such a way as to leave two openings, one the size of a fourpenny piece, and the other of a large bougie. As the vagina was rather irritable, and the general

tone low, she was put upon tonics for a short time previous to another operation.

February 21st. She was placed under chloroform on her back, and I proceeded to operate. I intended to close each opening separately, but as I progressed with the operation, I found it would be much easier to close them under one button. I, therefore, did so with four sutures with a long straight needle carrying the silver wire itself, which I had used in some of my earlier operations, and which in certain cases is easier to use than the short needle in the *porte aiguille*.

She went on very well, and had no escape of urine or any untoward system, and on March 2nd I removed the button, and found the opening entirely closed.

March 7th. She could retain her urine at pleasure. In every respect she was perfectly well.

March 9th. She left the Institution quite well.

17, Connaught Square, Hyde Park, March 1859.

LABOUR COMPLICATED BY RETROVERSION OF THE UTERUS.

By GEO. GREAVES, Esq., formerly Surgeon to the Manchester and Salford Lying-In Hospital, etc.

THE following case may be thought worthy of being recorded, because a mode of treatment, hitherto, I believe, not described, was successfully employed.

On November 17th, 1856, I was requested by Mr. J. R. Chick to see with him a case of labour, rendered difficult, as he believed, by retroversion of the uterus. The patient, Mrs. R., aged 40, was in labour of her sixth child. She believed herself to be about six months advanced in pregnancy. On examination, I found that Mr. Chick's diagnosis was correct. There was, between the posterior wall of the vagina and the rectum, a large rounded tumour, which had already advanced to within an inch of the perineum, and descended still lower with every pain. I had considerable difficulty in finding the os uteri; but was at length able to feel it above the symphysis pubis. I found the os dilated to the size of a half-crown-piece; and through the membranes, which were still entire, I was able to distinguish the head of the child, and to ascertain that the anterior fontanelle was the presenting part. An examination *per anum* confirmed the opinion as the position of the uterus, to which the other phenomena necessarily led; and I thus learned that I had before me the difficult task of delivering a woman, six months gone with child, whose uterus, instead of being in the normal position, was placed with its fundus all but resting on the perineum, and its mouth, directed upward and forward, and resting on the symphysis pubis.

My attention was first directed to the bladder. By using a flexible male catheter, I withdrew about a pint of urine, which had been secreted since Mr. Chick had emptied the bladder an hour or two before. The patient said that her bowels had acted freely on the previous day; but as I had found in the rectum some scybala flattened by the pressure of the uterine tumour, I thought it right to give an enema, to remove any possible accumulation in the higher part of the rectum. This was done by means of a flexible tube, introduced to the extent of seven or eight inches. Nothing but the enema came away. I next endeavoured to correct the position of the uterus. The mode in which this is usually directed to be done is by making upward pressure, with one or two fingers of one hand introduced into the rectum, on the fundus of the uterus, while by a finger or fingers of the other hand in the vagina the os uteri is brought down. The first proceeding is a safe one, and may be effectual; but it appears very doubtful whether the requisite force could be applied to the os uteri without dangerous bruising or even laceration. However anxious I might have been to attempt it, anything like traction exerted on the mouth of the womb was in this instance out of the question. When I again introduced my finger into the vagina, I could no longer reach any part even of the cervix uteri. The os had become so far dilated as to allow the child's head, still covered by the membranes, partially to protrude. By the violent action of the abdominal muscles, the scalp of the child was being forced downward between the symphysis pubis and the body of the uterus, and was there felt as a fleshy tumour. The mouth of the womb was positively higher than when I first examined; being, as I have said, out of reach of the finger.

+ I am happy to be able to state that the above case of A. T., Case vii, about which I had been consulted previous to operation, and which was discharged cured by Mr. Baker Brown on June 29th, continues cured, on November 30th. The husband then informed me that his wife continued quite well, and was never in more robust health, and that she had not the slightest return of her former complaint. (J. H. D.)