ago. With regard to the constitutional treatment of ringworm, I have already said that I think the state of health has little to do with the persistence of the disease. Nevertheless, a change of air, removing the patient from the influences surrounding him at home, often appears to be of great benefit. I should always recommend that, in a very tedious case, the room in which the child sleeps, and the bedding, should be disinfected as carefully as in the case of any other infectious disease. These precautions have in some cases appeared to arrest the disease, which was being treated in vain by local remedies.

With regard to ringworm of the skin (*tinea circinata*), its cure is conducted on the same principles as that of *tinea tonsurans*, but is much easier. The patches should be well painted with tincture of iodine, which is sometimes sufficient. If it should not be, wash thoroughly with soft-soap, and apply one of the parasiticide ointments above mentioned. Most cases will be cured in a fortnight.

Ringworm of the beard (parasitic sycosis) has become rather more common in London of late years than it used to be. It is treated in the same way as other forms of ringworm; but the amount of inflammation is sometimes so great, that cooling remedies, especially lead-lotion, have to be used at first. Poultices are better avoided. In the next place, painting with iodine (if the patient do not object) is very useful, both to counteract the deep-lying inflammation and to kill the fungus. In order to effect a cure, carefully eradicate the diseased hairs, and rub in one of the parasiticide ointments. The cure is sometimes tedious, but less so than in a really bad case of ringworm of the scalp.³

CASES OF HYSTERECTOMY, WITH REMARKS ON THE VALUE OF THE CARBOLIC ACID SPRAY IN THIS OPERATION.

By J. KNOWSLEY THORNTON, M.B., C.M.,
Surgeon to the Samaritan Free Hospital.

In September, 1882, I read a paper before the Boston meeting of the American Gynecological Society, "On the Relative Value of Hysterectomy and of the Complete Removal of the Uterine Appendages, for the cure of Uterine Fibroids."¹ In dealing with the statistics of the two operations, I had to record, as my contribution to them, 25 cases of removal of uterine tumour, with 9 deaths, and 8 cases of the removal of the uterine appendages with no death. From the results obtained by others, and from my own, I came to the conclusion that the removal of the appendages should, in all suitable cases, be preferred to the more formidable hysterectomy.

At the Liverpool meeting of the British Medical Association in August, 1883, I read another paper on this subject²; the year's interval having added to my personal experience six operations for the removal of uterine tumours, with one death, and seven successful removals of the appendages. I was then strongly in favour of the latter operation, and I am so still; but increasing experience and increasing boldness in dealing with uterine tumours by operation, have convinced me that, among the many things to be taken into consideration in deciding which operation is suitable for a given case, some can only be learned by actual sight and touch after the abdominal cavity is opened, and when the relative positions of the uterus, ovaries, tubes, and tumours are thus made absolutely certain. In undertaking to operate for a fibro-myoma, I therefore always tell the patient plainly that, though I believe the one or the other operation, as the case may be, will be most suitable for her, I cannot absolutely pledge myself as to which I shall perform till I have opened the abdomen.

I have now removed the appendages for the cure of fibro-myoma eighteen times, and all the patients have recovered from the operation. I do not propose to refer farther to these cases now, but I am watching their progress with care, for future publication. I have lately been seeking for cases suitable for the removal of the tumour, in order that I may thoroughly test the reasons for success and failure in hysterectomy; and I will now consider eighteen cases in which I have removed uterine tumours since I read my paper in Liverpool; and I shall especially direct attention to the value of Listerism with the spray in these operations.

The first case in my table was that of a woman, aged 47, with a very large lobulated tumour, surrounded by much ascitic fluid. The growth of the tumour and the accumulation of the fluid had been very rapid.

The patient was stone deaf and hemiplegic, the affected side being in a constant state of tremor. It was very difficult to obtain a good history from her, but, after watching for a time, I became convinced that her only chance of life lay in the removal of the tumour. She was already in very broken health, and I felt pretty certain that the tumour was uterine, and I feared that it was malignant, so that I did not operate with much hope of pulling her through, but because I thought it my duty to give her the chance.

No.	Date.	Age.	Condition.	Weight.	General Remarks.	Place of Operation	Treatment of Pedicle.	Result.
31	1883. Oct. 17	47	M	25 lbs.	15lbs. of ascitic fluid. Malignant tumour. Patient hemiplegic. Extensive adhesions	Samaritan hospital	Serre-nœud	Died in 8hs. shock
32	Dec. 29	55	S	14½	Rapidly growing fibro-cystic tumour. Extensive adhesions	"	"	Recovered
33	1884. Jan. 5	55	S	3	Severe hæmorrhage and increase of tumour after menopause	Nursing home	"	"
34	Jan. 18	58	S	5	1½ pints of pus in degenerating tumour. Constant offensive discharge from uterus	Samaritan hospital	" ovaries and tubes ligatured	"
35	Feb. 7	45	S	25	Rapid growth of tumour and pressure on ureters	Private house	"	"
36	Feb. 13	40	S	4½	Cysto-sarcoma of whole uterus. This was practically a complete extirpation	Samaritan hospital	Pin and ligatures	"
37	Feb. 20	42	S	10	Double ovariectomy with removal of broad ligament cyst as well as hysterectomy	Private house	Serre-nœud	Died on 4th day, peritonitis
38	April 5	38	M	2½	Hæmorrhage. Patient's mother died of hæmorrhage from fibro-myoma	Samaritan hospital	"	Recovered
39	May 17	45	M	7	Rapid growth of tumour, probably due to blood-supply through extensive omental adhesions	Nursing home	"	"
40	June 2	49	S	4½	Pediculate tumour removed during the performance of nephrectomy	"	Ligatures	"
41	June 11	40	S	12½	General ill-health and pressure on the ureters	Private house	Serre-nœud	"
42	Oct. 31	33	S	11½	Double ovariectomy at the same time. Symmetrical multilocular ovarian cysts, 9oz. each	Samaritan hospital	" ovaries and tubes ligatured	"
43	1885. Jan. 3	31		3	Pediculate tumour. Both ovaries and tubes so adherent that they were removed with it	"	Ligatures and flaps	"
44	Jan. 6	47	M	10	Right ovary contained a dermoid cyst	Nursing home	Serre-nœud ovaries and tubes ligatured	"
45	Jan. 10	34	S	3	Hæmorrhage. Both ovaries cystic	Samaritan hospital	"	"
46	Jan. 21	36	M	6½	Pediculate tumour growing fast. Patient came from N. Zealand for operation	"	Ligatures and flaps	"
47	Jan. 29	27	S	4½	Hæmorrhage and inability to work as domestic servant. Fibro-cystic tumour	"	Serre-nœud ovaries and tubes ligatured	"
48	Feb. 10	41	S	2	Pain and inability to do her work as a domestic servant	Nursing home	Serre-nœud right ovary and tube and left tube ligatured	"

The operation was performed on October 17th, 1883, and, after the evacuation of fifteen pints of ascitic fluid, I removed a semisolid tumour, weighing twenty-five pounds. The adhesions were extensive to the parietes and omentum, and especially close and troublesome to the cæcum and vermiform appendix. The uterus, just above the internal os, together with both broad ligaments, was clamped by Kœberlé's serre-nœud, and the mass, with both ovaries and tubes, was removed. The stump was pinned in the lower angle of the wound without undue traction, and the patient was placed in bed, after a prolonged operation, in a condition which made me hope for recovery. The tremor of the paralysed side ceased entirely; but she did not rally, and quietly sank and died in eight hours. The macroscopic and microscopic examination of the tumour showed it to be a cysto-sarcoma. The cysts were small, from the size of a marble to those only to be seen with the microscope, and they were lined with epithelium

³ A purer form of oleate of mercury has recently been introduced, which produces no inflammation or seborrhœa. In spite of this advantage, it has seemed, in hospital practice, less efficacious than the impure five per cent. oleate.

¹ *Transactions of American Gynecological Society*, vol. vii, 1882.

² *BRITISH MEDICAL JOURNAL* October 13th, 1883.

or endothelium. I have included the case in my table, as it was a supravaginal hysterectomy; but it can hardly be reckoned against operations for fibro-myoma, for everything points to its having been malignant.

I will take the only other fatal case in this series out of its order, so that I may the more readily group the successful cases.

The patient was a single lady, aged 42. I first saw her in consultation about two years before the operation, diagnosed multiple sub-peritoneal fibro-myomata, and advised against operation. When her medical attendant, Mr. Drake, again brought her to me, I found a large cystic tumour in the upper abdomen, with rapid loss of flesh and general decline of health. I then learnt, for the first time, that Mr. Drake had, many years ago, tapped what he believed to be an ovarian cyst, and that it had not refilled.

Exploratory operation was decided upon, and performed on February 20th, 1884. I found a multilocular ovarian tumour of considerable size on the right side, and, attached to its base by a pedicle, a flaccid broad ligament-cyst, with a little fluid in it (evidently the one tapped by Mr. Drake). On the left side, and adherent in the pelvis, was a small tumour of that ovary, and between these ovarian and broad ligament growths was an enlarged uterus, surrounded by subperitoneal out-growths, just as I had diagnosed it two years before. I determined to remove the ovarian and broad ligament cysts, and leave the fibro-myomata; but this proved to be impossible, chiefly on account of the adhesions between the left ovary, its tube, and the fibro-myomata. I therefore performed hysterectomy, having to dissect the bladder down from the front of the mass, and completed a long and formidable operation by the application of Kœberlé's serre-nœud, applied so that it included the broad ligaments as well as the uterine stump, and the only ligatures left inside were those on adhesions. She rallied well from the operation, and, on the third day, I thought her chances of recovery were good; but, in the evening, peritonitis set in, and she collapsed and died early on the morning of the fourth day after operation.

In this case, the death was really due quite as much to the troublesome double ovariectomy as to the hysterectomy: and, as I should not have operated for the fibro-myomata, it cannot be fairly reckoned in the mortality attending their treatment, though it is a death after complete supravaginal hysterectomy.

The remaining sixteen cases were all successful; thirteen of them were complete supravaginal hysterectomies; and three were removals of large pediculate fibro-myomata; in one of the latter, both the ovaries and tubes were adherent to the tumour, and were removed with it; in the other two, they were healthy and were not interfered with. All the hysterectomies were treated by the extraperitoneal method, and all but one by the excellent serre-nœud of Kœberlé. The one exception (Case 36) was really a complete extirpation of a cysto-sarcomatous uterus, for the vessels were tied as they were cut, and only a small fragment of the cervix was pinned outside, and this sloughed away in the after progress of the case. I do not intend to give these cases in detail, as I have made the table tolerably exhaustive of the leading features in each. I shall briefly describe the method of dealing with the pedicle in the two classes of cases, and then discuss the value of Listerism with the spray in complete supravaginal hysterectomy.

The adhesions to the subperitoneal growths were secured either by ligatures or by forceps, in two places, before they were divided; this is necessary with solid vascular tumours, or much blood will be lost, as the vessels do not contract on division, as they do in adhesions to an empty and contracted ovarian cyst-wall. The pedicles were first securely tied by a No. 4 Chinese silk ligature simply passed round, then the ends of this ligature were threaded into a needle, and passed through the pedicle on the distal side of the first tie, and each half of the pedicle securely ligatured again; this method prevents any fear of oozing from the puncture, which is a source of danger. After the tumour was cut away, two flaps were formed out of the distal part of the stump, and securely fastened together by a continuous No. 3 suture. The pedicles were then dropped, as in ovariectomy. These cases in which the uterine cavity is not opened, do as well as an ordinary ovariectomy for the first two or three weeks, but the uterine stump is much longer in healing over and quieting down than the ovarian pedicle, and is apt to adhere to the intestines, and cause trouble; it is therefore a good plan to keep these patients in bed an extra week after the operation, and to insist on absolute quiet during the first menstruation. These operations were justified, in my opinion, by the circumstances of the patients. One was a domestic servant, and she found it impossible to continue in her situation, on account of the pain and inconvenience she suffered; and the other was a poor woman sent to me from New Zealand, her hus-

band having to work their passage over and home again. The tumour was growing fast, and causing her much inconvenience; and if I had sent her back unrelieved, there would have been no chance of her coming over again if she became worse.

The following method was followed in all the hysterectomies. A four-inch incision was first made through the parietes; I then introduced my hand into the peritoneum, and carefully examined the ovaries, tubes, uterus, and tumour, and, having decided that the case was not suitable for a mere removal of the appendages, I enlarged the incision sufficiently to allow the extraction of the tumour and uterus, without unduly bruising the edges of the incision. The extraction of the mass was often much facilitated by screwing a nickel-plated corkscrew with a broad blade into the tumour, and using it as a handle. As soon as the mass with the ovaries and tubes was outside the abdomen, the latter were examined to see if they could be included in the wire of the serre-nœud along with the uterus; if this can be done, the operation is much shortened and simplified, and the after-progress of the patient is more likely to be rapid, as no stumps are then left inside the peritoneum. I was able to so include both ovaries and tubes in four of the thirteen cases, and one ovary and tube in another, in which I left one ovary and tube behind, as they were quite healthy, and it was easier to leave them than to remove them. In the remaining cases, it was impossible to include the broad ligaments in the wire; they were, therefore, transfixed on each side with a double No. 3 ligature, and the ovaries and tubes were tied off as in ovariectomy, a separate ligature being tied round each pedicle for security. A temporary clamp was then applied to the broad ligament on each side of the uterus, and the ligament divided down to the angle secured by the inner loop of the ovarian ligatures; thus the base of the uterine mass was cleared for the application of the wire. To prevent any portion of the cut broad ligament from slipping back while the wire was being tightened and screwed up, the free end of the wire was passed through the ligament just below the cut angle. After the wire had been screwed up, the pin for holding the stump in position was passed just to the distal side of the wire loop, and the tumour cut away. The ovaries and tubes were cut off, and their stumps allowed to drop back into the peritoneum, as in ovariectomy. The anterior pouch was sponged out, and the stump secured in the lower angle of the wound by a strong suture passed through the whole thickness of the abdominal wall and peritoneum, this suture being at once tied. The peritoneum was cleansed in the usual way, and the remaining sutures were introduced and tied. No drainage was used in any of the cases. The upper part of the abdominal incision was dressed with a carbolic gauze dressing, terminating about an inch above the uterine stump, and the straps at once applied to this upper dressing. The stump was then carefully packed round with dry carbolic gauze placed under its margins, and under the pin and stem of the serre-nœud; the stump was then clipped down, and dressed with a little solid perchloride of iron, care being taken to avoid any moisture from the melting iron running over the sides of the stump. The usual carbolic gauze and straps over the stump and lower portion of the wound completed the dressing. A folded towel was placed over the strapping, to absorb any moisture during the first few hours after the operation, and the flannel-bandage was pinned over all.

The lower strapping and dressing was changed under the spray generally on the second or third day, and every third day afterwards, the upper dressing often remaining undisturbed till the end of the week, when the sutures were removed. At each dressing of the stump, the wire was tightened with the screw, the stump clipped and covered with finely powdered iodoform; the pin and wire were removed about the end of the second week, and the stump again covered with iodoform. A deep granulating hole usually remained, which was from two to three weeks more in filling up.

I have more than once stated my opinion that hysterectomy, with the opening of the uterine cavity, is not a test-operation for Listerism, because the mucus in the opened cavity contains the causes of putrefaction, and is necessarily left in the centre of the stump. Great care is required when cutting away the tumour to avoid this mucus, or the mixed blood and mucus, running down and fouling the wound and peritoneum. This danger may be avoided by packing carbolised sponges all round the stump up to the constricting wire, and carefully cleansing away the mucus directly the cavity is opened. During the subsequent steps of the operation, a small carbolised sponge can be kept over the cut cavity; and, when once the stump is fixed in position, the danger of fouling the wound is pretty well ended. The solid perchloride dries and mummifies the stump, which is, moreover, surrounded by dry carbolic gauze, and then, at the first dressing, the area of putrefaction is thickly covered with iodoform. Of course, the causes of putrefaction may and do remain in the portion of the uterine

cavity deep in the stump, and, as the distal portion of the latter sloughs, it sooner or later becomes permeated by putrefaction; but this is a slow process in the dense thick uterine tissue hardened with perchloride of iron, and, long before there is any danger of its spreading to the wound generally, the peritoneum is thoroughly sealed. The dangerous time is when the pin and wire separate, or are cut away; for then, as the stump sinks back, little tears or cracks occur in the granulation-tissue round its edges, and absorption of putrid matter may take place, sharp rises of temperature, even accompanied by chills, showing the reality of the danger. The same thing was occasionally troublesome and even fatal during the separation of the clamp on the ovarian pedicle in the old days. Here, again, however, perchloride of iron is very useful; for if it be carefully applied to any points which bleed, it seals the cracks against absorption, and the powdered iodoform forms a paste with the blood and serum, and completes the protection. I think, then, that Listerism with the spray is a great safeguard in hysterectomy, for it enables us to perform an aseptic operation, and protects the patient during the early days, and until the peritoneum is sealed. The parts around the stump eventually become septic, but, with such care as I have indicated, this is of small moment when the main parts of the wound have healed. When it is impossible to bring the stump quite out of the wound with the pin, and it sinks back partly into the peritoneum, it is almost impossible to prevent putrefaction of the peritoneal wound; and if I were certain in any case that this would happen, I should not attempt perfect Listerism, but should make the whole operation as dry as possible, and use a Keith's glass drainage-tube.

The latest contributions to the statistics of hysterectomy, are from the pens of Dr. Keith and Mr. Lawson Tait. The former has, as usual, obtained brilliant results; in two papers published in this JOURNAL,³ he has recorded 38 cases, with only 3 deaths. He scorns the spray, and expresses his belief that one may do all that is necessary in antiseptics, "as Mr. Lawson Tait does with boiled water and soda." This reference to Mr. Tait's work is rather unfortunate, for, just as Dr. Keith's paper appeared, Mr. Tait published his results in hysterectomy, in the *Medical Press and Circular*, and admits a mortality in this operation of 35.7 per cent.⁴ If a surgeon, who claims an experience of 1,000 abdominal sections, have to admit such a fearful mortality as this in hysterectomy, and another with large experience who says, "I have almost gone back to the boiled water and soda of twenty years ago" only have a mortality of 7.9 per cent., it is clear that it is not the soda and water, but something more in the method of the individual surgeon, which brings the success. Until those who discard Listerism can show as a result of their method a nearer approach than this in their mortality, those who believe in the additional safeguard of Listerism, as I do, may be excused if they still give their patients the benefit of the doubt, if doubt there be. My recent results, as recorded in this paper, eighteen cases with two deaths, are sufficiently near to Dr. Keith's thirteen with one death; but they are too small series for any useful comparison, and the element of chance comes too much into play.

Dr. Keith has favoured my work with somewhat extensive notice in his last paper; but for that I should have waited longer before publishing the present cases. Surely his own brilliant records gain no additional lustre from these bitter attacks upon a fellow worker, whose chief fault is that he remains faithful to the teaching of his old master and best friend. In this JOURNAL, on October 19th, 1878, Dr. Keith published the following remarks upon Listerism. "Since 1876, every operation has been performed with all Mr. Lister's care, and I shall never go back to the old way." Again, "That the spray is essential in ovariectomy, to the perfect carrying out of Mr. Lister's principle is proved, by my experience, over so many years of the simple carbolic acid treatment. There can be no two opinions about this;" and much more to the same purpose, with all of which I cordially agree. But now all this, which was unalterable in 1878, is changed, and we are to go back to the soda and water of twenty years ago, or, if we do not we are to fall under the lash of Dr. Keith, for he now says "those who teach that the carbolic acid spray, in abdominal surgery, is anything else than an useless ceremony, can make of these results what they may." I have found that with the spray, and increasing experience in the use of Listerism, in abdominal surgery, I get increasing success, and I should be most unwise to myself, and most unjust to my patients, if I threw it aside, because one of its most ardent advocates in 1878 has become one of its most bitter foes in 1885. I began to use Listerism regularly in all my abdominal work, before Dr. Keith tried it, and I have never altered my

method up to the present time, years after he has discarded it; so that I can at any rate speak with a fuller knowledge of it than he can, and if I am still a little behind him in success, perseverance may yet give me the lead. He began work before I was even a student of medicine, and time and sticking to what he proved to be good (by his 79 successive successful ovariectomies under the spray), are both fighting on my side. I admire his work with or without the spray; let him be just to mine.

CÆSAREAN SECTION: A CASE AND ITS LESSONS.

By THOMAS M. DOLAN, M.D., F.R.C.S. Ed.,

Fellow of the Obstetrical Society of London, etc.

ON Tuesday, December 30th, 1884, I was summoned by my midwifery-nurse to the Halifax Union Maternity, to see A. M. P., who was reported to be in labour. I saw her at 9.30 A.M. She was in labour; the pains were weak and occasional, and had been on a few hours. On examination, I found that the promontory of the sacrum was not only angular, but exostosed, and so far approached the pubes that it barely allowed the tips of two fingers to pass to feel the presentation; and that the pelvis was generally contracted. I anticipated some trouble with this patient, as she had been in the house a few weeks; she was dwarfed, measuring only 3 feet 11 inches. I immediately had a consultation with Mr. H. Wright and Dr. Davy; and we decided, after several examinations and measurements, that it would be impossible in any way to deliver *per vias naturales*, and that the only chance lay in Cæsarean section.

A room in another part of the building was at once prepared, and the temperature raised to the desired heat. This, of course, took little time, and it was not until 2.30 P.M. that the patient was transferred to this room. She was cheerful, not weakened, and in every way seemed to be a favourable case.

In these days of antiseptic precautions, it is needless to say that the spray was employed, and that every attention was paid to the avoidance of anything that could give rise to sepsis. The position of the placenta and child was made out, the beat of the fetal heart being very distinct. Ether was administered by Dr. Davy, and the operation performed by Mr. Wright and myself. A central incision was made, beginning just below the umbilicus, and carried down, a little to one side of the linea alba, to an inch above the pubes. As the abdomen was thin, the uterus was soon reached, and incised without any trouble, the intestines not interfering. But little difficulty was experienced in extracting a male child, which was alive; and comparatively little blood was lost. The placenta was taken away at once; all the parts well washed and cleaned; a drainage-tube was inserted; the uterine wound was brought together with interrupted carbolic catgut ligatures; and, after the usual details, the external wound was closed with silver sutures, and dressed with iodoform and salicylic silk, kept in position by a strong firm binder. She was soon removed to bed, and made comfortable, and very soon recovered from the effects of the ether. The whole operation occupied about twenty minutes. Two nurses were told off to look specially after her—one for the night, and one for the day. An opiate suppository was inserted, a catheter used, and ice only given. She passed the first night well. The following are the temperatures: at 8 P.M., 100°; at 9.30 P.M., 95.2°; at 12 midnight, 98.4°; at 3 A.M., 99°; at 5 A.M., 98.4°; at 8 A.M., 99.2°. The uterine passages were well syringed through a tube.

She was seen repeatedly on the 31st by Mr. Wright, Dr. Davy, and myself. She craved very much for something to drink; a little milk and soda-water was allowed. Pain was very slight. She had urinated, and was in very good spirits up to about 8 P.M., when she commenced to feel sick; this was followed by vomiting. The suppositories were continued, and beef-injections of peptonised beef-jelly (Mottershead's) were given. At 12 midnight, she complained of great pain; this seemed to be relieved by the opiate suppositories.

At 4 A.M., there was a great change. A sudden state almost of collapse set in; this was overcome by hot bottles to the feet. The tube had come away during the day, and the passages were syringed in the ordinary way. The discharge was not offensive. The following were the temperatures: at 10 A.M., 100°; at 12 noon, 100°; at 2 P.M., 99°; at 5 P.M., 105°; at 6 P.M., 102°; at 8 P.M., 100°; at 10.30 P.M., 101°.

January 1st. The wound was examined; it looked well, but there was a slight discharge at the lower portion. The dressings were changed every three hours. She was still kept under opium, and

³ BRITISH MEDICAL JOURNAL, December 3rd, 1883, and January 31st, 1885.

⁴ Medical Press and Circular, January 28th, 1885.