

**Contributions to the surgical treatment of tumors of the abdomen. Part II.
Electricity in the treatment of uterine tumours / by Thomas Keith and
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Publication/Creation

Edinburgh : Oliver and Boyd, 1889.

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THE TREATMENT
OF
UTERINE TUMOURS
BY ELECTRICITY.

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CONTRIBUTIONS
TO THE
SURGICAL TREATMENT
OF
TUMOURS OF THE ABDOMEN.

PART II.—*Electricity in the Treatment of
Uterine Tumours.*

BY

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AND

SKENE KEITH, F.R.C.S. Edin.



EDINBURGH:

OLIVER AND BOYD, TWEEDDALE COURT.

LONDON: SIMPKIN, MARSHALL, HAMILTON, KENT, AND CO., LIMITED.

1889.

PRINTED BY OLIVER AND BOYD, EDINBURGH.

To
DR GEORGES APOSTOLI.

Dear Sir,

Will you allow my son and myself to dedicate to you the following account of our first attempts to follow you in your treatment of uterine tumours by electricity? It is all we can offer you for the kindness with which you received us at the various visits we have paid to your clinique. You gave us every information; you put everything at our disposal; the notes of every case treated by you for the last five years were open to us. For all these things accept our hearty thanks.

Since we began your treatment, now more than two years ago, we have ceased to perform any operation on the uterus by abdominal section. For myself, I have always had grave doubts if I were justified in performing such operations at all, especially hysterectomy, for the mortality attending this operation is out of all proportion to the natural history mortality of uterine tumours, and the results of it are out of all proportion to the benefits received by the few. As time went on, and the number of operations became larger, my doubts as to whether I were doing right continued to increase, and that too in spite of the comparatively low mortality with which I was favoured, more especially in my private practice. I never had any such doubts as to the propriety of performing ovariectomy, for if ovarian cysts be let alone, death is almost certain, and even that is only reached after great suffering. With hysterectomy it is quite different. Hysterectomy is a hazardous operation for the removal of a tumour that of itself rarely shortens life. The minor operation, on the other hand,—the removal of the ovaries—requires no surgical skill for its performance. It is a great mutilation to a woman, being simply castration; and women are beginning to find this out. It is not always successful in attaining its purpose, for you will find in these pages some cases

narrated that were cured by electricity, where operations on the ovaries had failed to give any relief.

Your method thus came to me at a very opportune time. You have taken away from me those anxious doubts and fears that had so long vexed me. For this I shall ever feel grateful to you. Leaving out hysterectomy, abdominal surgery is comparatively plain sailing, now that the principle of early operation in ovariectomy is fully recognised. Things are very different in this respect from what they were twenty or twenty-five years ago.

For long, I had hoped much from electricity in the treatment of fibroids, but had only met with disappointment till your method was made known to me. It is in every way a new method, and it belongs to you, and to no other. You have worked in the true scientific spirit. For five years you laboured quietly at your clinique, kept up at your own expense, and open to all, before you made your work known. When it was made public, and ought to have had from all a warm welcome, or at least a patient hearing and honest investigation, considering the magnitude of the work, it was received with unbelief and ridicule.

In common with many, I regret the unfair treatment you have received in this country. In spite, however, of the ignorance and prejudice displayed, your work is every day making its way, and it is impossible to resist the accumulating evidence there now is in its favour. That you will in a few years see your treatment adopted all over the world I have little doubt; and no one can wish you success more heartily than I do.

Believe me, Dear Sir,

Yours truly,

THOMAS KEITH.

42 CHARLES STREET, LONDON, W.,

August 1889.

INTRODUCTION.

IN the following pages we tell, in the simplest language, the story—perfect or imperfect, or merely experimental—of every patient with uterine tumour who, up to the end of last year, submitted herself to be treated by electricity. We have followed Dr Apostoli's method to the best of our power, and we have always found him an exact and truthful guide. It is therefore needless, with the ample instructions he has given, to go over the details of his process. Those who are acquainted with his work will easily understand our ways. No attempt at classification of the cases has been made. We leave every one to draw his own conclusions.

Various circumstances have interfered with earlier publication. For long we had doubts as to the permanency of the treatment in the early cases. The later work has been much more satisfactory. But now more than two years have passed, since all operations were given up for this treatment; and our first patient writes—and no one could have had more hæmorrhage—that she has been perfectly well all summer, climbing hills and rowing in a boat. Another of the early and doubtful ones, who could never bear a large dose of electricity, tells us,—“I am now in excellent health, without an ache or pain of any kind, and my periods are just a show and nothing more, and give me no discomfort whatever. I hope you have been as successful with all your other patients as you have been with me. But it cannot be otherwise, for I am sure that no one

could have been worse than I was with that awful hæmorrhage." This patient's importunity had almost driven me into doing hysterectomy for her.

The cases are narrated in the order in which they presented themselves. Every one is given, as well as the amount of every dose of electricity, even in one of the dispensary cases, though only a single application was made. In these dispensary patients there was much trouble and loss of time in finding out their after-history. This was, however, obtained in nearly every case, though it necessitated two special journeys to Edinburgh to search them all out.

About half of the cases that presented themselves were sent away without any treatment, simply because the tumours were giving little or no trouble, or they were near the menopause, where no treatment was necessary. At first we fell into the natural mistake of trying electricity on every case that presented any symptoms—in some, when the tumours were almost certainly sarcomatous, and even in one, who was in the last stage of old cardiac disease; still we give every one of these. We know now that the cases best treated are those who are suffering much from hæmorrhage—the more the better,—cases in which something must be done; cases in which, two or three years ago, the question of operation of some kind would have been considered by us.

In only a single case during the last two years was hysterectomy proposed and agreed to. The patient was sent by Dr Dow of Dunfermline, was 42 years of age, and the tumour had grown for fifteen years. In spite of monthly losses and the size of the tumour—not far off from 50 lbs. in weight—she had the management of a large farm, and was able to be out of doors to look after things, summer and winter, by six o'clock in the morning, so little trouble had the huge tumour given her. Till three

months before she came, she had suffered nothing. She then had a severe attack of pain over a limited area. We had not at that time much more than begun Dr Apostoli's treatment, and, considering the huge size of the tumour, it seemed better to advise hysterectomy. This was willingly agreed to, and the operation was arranged for two days after. Next afternoon she lay down after dinner, and the nurse was about to leave her to repose, when she cried out with pain over the heart, and died in a few minutes. How easily we might have had to report a death after operation, or after electricity, had that been tried!

This treatment, it must be remembered, is a new thing. We began it in comparative ignorance. Electricity is known by its results, and, working on the living body, progress and improvement are slow. In the following cases, therefore, are found some failures and some imperfect and incomplete cases; the marvel rather is that there are so few. Time and experience every day correct our want of knowledge and diminish these imperfections. It must also not be forgotten that the cases treated were the worst possible, both as to the size of the tumour and the severity of symptoms. We will probably never again have such a series of bad cases to treat. Those who have practised ovariectomy only during the last twelve or fifteen years, know little what the operation was twenty-five or more years ago, in the early days of abdominal surgery. When patients with uterine tumours come for treatment by electricity, at an earlier stage than they do now, then may reasonably be expected the same ease of cure as is now the case in ovarian disease. The need for the removal of ovaries for small uterine tumours, and of hysterectomy for large ones—except in the rare form of fibrous cystic tumours—will then pass away. No large uterine tumour has with us entirely disappeared under the electrical treatment, but in four cases of small fibroids, three of which

come into the present series, there is not now a trace to be found. Doubtful cases of simple enlargement have been excluded altogether, though in every one of these the result has been perfect.

The carrying out of this treatment faithfully to the end is not an easy matter, and old tumours that are large, and that have bled for many years, take a long time to improve. The treatment runs away with time, and it requires care and thought. To the surgeon, by far the simpler plan is hysterectomy and the removal of the ovaries. But Dr Apostoli's treatment saves our patients from risk of life by operation, and saves them also from a horrid mutilation—the one thing that they all dread. We believe it to be the right treatment, and our patients must get it, however great the inconvenience and monotony of it may be to ourselves. Though our results after hysterectomy show the lowest mortality of any yet recorded, and though we have had but a single death after removal of the ovaries for fibroid in almost one hundred operations, we reject even the minor operation in favour of Dr Apostoli's treatment, and we reject hysterectomy altogether on account of the mortality that has hitherto attended it all over the world. The method given us by Dr Apostoli is good, and it will endure. We have no fear now of its passing away and being forgotten.

CASES OF

FIBROUS TUMOURS OF THE UTERUS

TREATED BY ELECTRICITY.

CASE I.—Married, age 45, was sent to Edinburgh by Dr M'Nee, of Inverness, for operation in the month of June 1887.

We had determined to give Dr Apostoli's treatment a fair and extensive trial, and advised this lady to wait until the apparatus arrived. Fortunately her husband, who was much troubled with stiffness and pain due to rheumatism, had received much benefit from the faradic current, and was therefore a believer in electricity. They were willing to do anything to avoid the risk and anxiety of an operation, even to be experimented upon, so far at least as to be our first case. Her history was as follows:—She had never been pregnant, and up to the age of 40 had enjoyed good health; the periods were regular, and were not in excess. Between the age of 40 and 41 there was a change. The time the flow lasted began to be prolonged, and the quantity of blood lost steadily increased. Keeping pace with this, the general health began to suffer, she became breathless and anæmic, and for some time past the discharge has continued for about two weeks, and has returned sometimes after an interval of one week, sometimes after an interval of two weeks, but she is never dry for longer than two. She has to remain in bed for at least one, and sometimes for two

weeks at a time, or, in other words, from three to six months in the year. While lying in bed she is afraid to do anything for herself, as even the simple raising of the arms above the head will cause a sudden rush of blood from the womb. After the period she is unable to walk upstairs without assistance. When the bleedings began to be severe she took ergot in large quantities with marked benefit for a time. Of late, however, it has not been of service, except that she thinks that perhaps the bleeding would have been worse had the drug not been taken. About the beginning of the year the tumour was first noticed.

The patient is very anæmic and breathless; and on examination the tumour is found to extend to fully 3 inches above the pubes. The cervix is situated far back, and there is some difficulty in passing a sound to a depth of $3\frac{3}{4}$ inches. It was evident that this was a case for the use of the positive pole in the uterine cavity.

15th June.—80 milliampères for 6 minutes.

Fortified by what we had seen at Dr Apostoli's clinic in Paris, we allowed the patient to walk home to her apartments, a distance of perhaps 300 yards. Next day the patient was found to be certainly not any the worse, and a slight bloody discharge had stopped.

18th June.—100 milliampères for 5 minutes.

This application was again well borne, no pain being complained of.

20th June.—90 milliampères for 6 minutes.

22nd " 100 " " 10 "

Feels very well indeed.

23rd June.—There was a little bleeding from the uterus in the morning, which stopped by midday.

24th June.—Slight bleeding all day.

25th June.—The third day of the period, and the patient

is in the best of spirits, and although not in bed, has less discharge than for several years.

26th June.—Still very well.

27th June.—The flow increased during the night, and is still bad.

28th June.—Flow still severe.

29th June.—Much less during the night; free during the day.

30th June.—Much the same as yesterday.

1st July.—No bleeding since last night.

2nd July.—120 milliampères for 8 minutes, followed by bleeding at night.

5th July.—120 milliampères for 8 minutes.

8th " 120 " " 10 "

9th " 120 " " 10 "

11th " 120 " " 10 "

13th " 90 " " 8 "

15th " 95 " " 8 "

Feels very much stronger and better in every way.

18th July.—80 milliampères for 8 minutes.

20th " 90 " " 10 "

22nd " 90 " " 10 "

25th " 85 " " 10 "

27th July.—The period has come on to-day, after an interval of nearly four weeks. This is a longer space than for three or four years.

8th August.—90 milliampères for 10 minutes.

The period has lasted but six days, and the bleeding was severe for a few hours only. Does not feel much pulled down.

10th August.—90 milliampères for 10 minutes.

12th " 95 " " 10 "

15th " 95 " " 10 "

17th " 80 " " 10 "

19th " 90 " " 10 "

The patient went home after this, the 21st sitting, in the best of health and spirits.

After-history, taken from letters from patient's husband to us :—

17th November.—"I beg to inform you that Mrs R. has passed through another of her periods, which was longer in duration than the two former ones, although accompanied by less hæmorrhage. It commenced on Saturday the 5th, and was scarcely noticeable for three or four days, after that it was more perceptible, until the 15th, when it vanished. The last two days there was very little. She did not go to bed during the day, and feels quite strong now."

22nd December.—"I am glad to say that your treatment has made her like another person."

27th January 1888.—"I am happy to inform you that Mrs R. has just passed through another of her monthly periods very easily, something similar to what used to be previous to her tumour affliction. She had not to go to bed during the day, and now feels quite strong."

27th August 1888.—"Mrs R. desires me to acknowledge receipt of your kind note of inquiry, dated 24th inst., and to thank you very much for your remembrance of her case, and to say that her February period was light; March, April, May, June, and July, scarcely any bleeding; but during her August one a good deal, which was not to be wondered at, seeing there was next to nothing the five previous months.

7th September.—"Mrs R. had arranged to have her photograph taken on Saturday last, the 1st inst., but her September period coming on prevented her. She wished to have a card freshly taken to show you how ruddy and well she was looking; but this turn has made a very great change on her—she is now white and weak.

"The first day there was not much bleeding; the second there was more; on the third, fourth, and first half of the

fifth there was much—very much; but less and less every day since.”

24th October.—“Since I wrote you about Mrs R., her October period has come and gone. She was not nearly so bad this time, although there were five and a half weeks between the October and September ones. Mrs R. desires me to enclose her photograph, which, I think, will testify to her being in pretty fair health.”

21st January 1889.—“Since I last wrote you on the 24th October, Mrs R. has only had one slight—very slight—period, and that on the 17th November; thus nine weeks have passed without any indication of another. She is in good health and spirits.”

It is interesting to note that there is not any mention of the condition of the tumour. The tumour itself was evidently considered of no importance as long as it did not give rise to symptoms. A thoroughly sensible view of the case.

Unfortunately, we cannot be sure that the strength of the currents recorded is correct; but there is certainly not a difference of 20 milliampères either way.

CASE II.—Married, age 60, was in the habit of appearing every few months in the ward, which was at that time set apart for the treatment of ovarian and uterine tumours in the Royal Infirmary, Edinburgh.

She had had a tumour in the abdomen for at least twenty years. This mass had not followed the usual history of these growths, for it had continued to increase in size after the menopause. The last period was eight years ago. In March 1887, the old lady insisted that the tumour was growing, and that it was giving her much more inconvenience. She complained much of difficulty in walking and of dyspepsia. Careful measurements of the tumour were made in order to determine whether there were any increase in size or not. The circumference was 42 inches

at the level of the umbilicus. In the month of June the circumference was still 42 inches; but other measurements showed a slight but decided increase in size; and as she complained more than ever of the pain in the left side, for which pain, by the way, she had had plenty of treatment from one and another doctor, it seemed to be a fair case upon which to try the electrical treatment. In the pelvis the vagina was found to be drawn out into a funnel towards the left, and the cervix could not be reached. The case was thus evidently one which would require to be punctured, and where the puncturing needle would be connected to the negative pole of the battery. Owing to the reason which will be described later on, the treatment had, in this case, to be limited to five applications, and the strength of the currents used is possibly not correctly stated.

21st June 1887.—A current of about 80 milliamperes was passed for 5 minutes from the clay pad on the abdomen to the exposed point of the needle, inserted into the tumour from the vagina. The passage of the current caused simply a little discomfort. On withdrawing the needle there was not any hæmorrhage. The vagina was washed out, and a pad of iodoform gauze pushed against the spot where the puncture had been made. The patient walked home, and next day felt none the worse.

On the 27th, a current of 100 milliamperes was passed through the tumour in the same way and for $7\frac{1}{2}$ minutes. A little more pain was caused by the treatment. The circumference was found to have diminished 1 inch. She felt much better for this application, and on her way home, and when passing through a garden, said to a friend who was with her that she felt as if she could dance on the grass.

On the 4th of July the circumference was $40\frac{1}{2}$ inches. On the 7th, the strength of the current was about 60 milliamperes, and was not so well borne. On the 11th, the application was again borne badly, the strength

being about 40 milliampères. The circumference was 40 inches.

On the 15th, it was not possible to puncture the tumour with safety. The appearance of the abdomen was much changed, the tumour was more nodular, appeared to be smaller, and could be pushed somewhat from one side to the other, instead of being immovable as it had previously been.

19th inst.—A current of 70 milliampères was passed for $7\frac{1}{2}$ minutes. The patient was in great spirits, for she had, the day before, taken in her stays instead of letting them out, as had been necessary for a number of years.

On the 12th August, failed to find a spot where the pelvic part of the tumour could be punctured, as it had become much smaller and was entirely protected by the bladder. Much to the disappointment of the patient the treatment must be discontinued in the meantime at least. She has, however, gained much; she can walk better, and has not any difficulty in going her own messages and attending to her house; she can eat well, and in every respect feels decidedly better.

19th November.—The circumference is $39\frac{1}{2}$ inches.

23rd February 1888.—Still keeps well, seven months after this short course of treatment.

In August, became hæmiplegic, and has not been heard of since.

CASE III.—Married, age 31, came to the Woman's Dispensary, Edinburgh, in July 1887.

This patient had been married for three years, and had never been pregnant. Before marriage she noticed that her monthly periods were becoming prolonged, and that she was losing more blood than formerly. Now, the flow lasts a week instead of one or two days. For nine months there has been a feeling of bearing down, and also a constant gnawing pain in the right groin. She has four

sisters, none of whom have had any trouble with their uterine functions.

On examination in the vagina, the os uteri is felt to look forwards, and on placing the hand on the abdomen the uterus is found to reach to 2 inches above the pubes. The sound passed directly backwards, and then slightly forwards, to a depth of $2\frac{1}{2}$ inches. On depressing the handle, however, it slipped in fully $\frac{3}{4}$ of an inch farther.

Treatment.—Until the end of November the current strength is not absolutely correct.

7th July.—80 milliampères for 5 minutes.

On the 15th the patient came to say that she was menstruating, and that, although she felt very tired the day after the application, she was now feeling better than usual.

22nd July.—50 milliampères for 5 minutes.

8th August.—60 " " 5 "

Was not much inclined to have the application to-day, as she considers herself cured, and, against advice, does not intend to come back. However, as there was some return of the pain towards the end of the month, the treatment was resumed.

29th August.—80 milliampères for 5 minutes.

31st " 80 " " 5 "

5th September.—60 " " 5 "

16th " 40 " " 5 "

The pain is better. The period is over, and as there has been more blood lost even than usual, the internal electrode will be positive instead of negative, as heretofore.

19th September.—40 milliampères for 5 minutes.

21st " 60 " " 5 "

26th " 40 " " 5 "

28th " 40 " " 5 "

3rd October.—40 " " 5 "

5th " 40 " " 5 "

19th " 40 " " 5 "

Again there has been too much flow during the period.
In other respects the patient is well.

26th October.—40 milliampères for 5 minutes.

2nd November.—80 " " 5 "

9th " 80 " " 5 "

23rd " 60 " " 5 "

25th " 60 " " 5 "

30th " 75 " " 5 "

2nd December.—75 " " 5 "

5th " 90 " " 5 "

9th " 100 " " 5 "

9th Jan. 1888.—75 " " 5 "

There has been less flow at the last two periods.

14th January.—75 milliampères for 5 minutes.

20th " 65 " " 5 "

23rd " 65 " " 5 "

27th " 75 " " 5 "

6th February.—100 " " 5 "

The tumour has become very much less, and cannot now be felt from the abdomen.

11th February.—100 milliampères for 5 minutes.

22nd " 140 " " 5 "

27th " 130 " " 5 "

29th " 160 " " 5 "

2nd March.—200 " " 5 "

5th " 190 " " 5 "

No enlargement of the womb can now be detected, and the sound enters barely to the extent of $2\frac{1}{2}$ inches. Thirty-five applications in all. In September there was not any pain, the periods were normal, and the woman had gained weight, and said that she felt quite well.

CASE IV.—Single, age 43, was admitted into the Royal Infirmary, Edinburgh, in December 1886.

For three years the patient says that she has been

subject to great losses of blood every month, and has become weak and ill. In August of this year two soft red masses the size of the fist were passed from the vagina. A month afterwards, Mr Teale of Leeds dilated the cervix and removed part of a soft friable tumour, which he was much inclined to think was malignant. For a month or two there was improvement, but by December the patient was as ill as she had been before.

16th December.—During the night two large masses, weighing half a pound, of what appeared to be firm clot were passed. These were examined by Dr H. A. Thompson, and were found to consist of partially organized clot. There has been profuse discharge to-day, accompanied by severe pain, and the tumour, instead of being smaller, is fully two inches higher than it was before.

19th December.—The discharge is less, and the tumour has gone back to its former size.

29th December.—Another large piece of partially organized clot was passed.

6th January 1887.—The ovaries were removed, the usual number of students being present. The left ovary was got away with difficulty on account of omental adhesions. On the right side the ovary was close to the tumour. The Fallopian tubes were also removed. There was not any disturbance after the operation, the pulse never being quicker than 84, and the temperature was normal throughout.

3rd February.—The tumour is swelled up.

5th February.—The period has come on, and a mass has been passed from the vagina.

10th February.—Went home, there having been much less discharge than usual.

17th June.—Was admitted into hospital again. The patient has not been better for the operation. There has been scarcely any hæmorrhage, but there is a constant

and very profuse discharge with very offensive smell, and occasionally a clot is passed. The temperature is fully 102° . The patient does not look so well as she did after the operation, and is very anæmic. The os uteri is dilated to the size of a shilling, and projecting from it is a sloughing mass. The tumour extends to midway between the pubes and umbilicus.

19th June.—The whole of the sloughing part of the tumour was removed, and as much as possible of the remainder. It was not considered advisable to entirely empty the uterus, as the bleeding was profuse and the patient was much debilitated. The temperature fell at once after the operation.

9th July.—As ordinary surgical remedies seemed to be useless, it was thought that it was worth making the experiment of treating the case by electricity. Cavity measures $4\frac{1}{2}$ inches.

9th July.—60 milliampères for 5 minutes.

11th „ —60 „ „ 5 „

There is less discharge, and the patient says that she feels stronger.

13th July.—75 milliampères for 5 minutes.

15th „ 80 „ „ 5 „

18th „ 60 „ „ 5 „

21st „ 60 „ „ 5 „

Is feeling so much stronger that she went out for a walk yesterday.

26th July.—60 milliampères for 5 minutes.

Walked a mile.

28th July. —60 milliampères for 5 minutes.

16th August.—40 „ „ 5 „

The temperature rose again to 102° , caused by a sloughing mass again protruding through the os. This was removed and the temperature fell. The sound was made positive to-day instead of negative, as it had been previously.

18th August. —40 milliampères for 5 minutes.

20th " 40 " " 5 "

23rd " 40 " " 5 "

8th September.—40 " " 5 "

Sloughing mass was removed six days ago, and to-day the patient walked a mile both before and after the treatment.

10th September.—60 milliampères for 5 minutes.

13th " 60 " " 5 "

Says that she feels stronger than she has done for many years.

17th September.—80 milliampères for 5 minutes.

20th " 90 " " 5 "

22nd " 50 " " 5 "

24th " 100 " " 5 "

The cavity measures $3\frac{1}{2}$ inches.

27th September.—120 milliampères for 5 minutes.

29th " 80 " " 5 "

A clot the size of a walnut came away. This is the smallest that there has been. The uterus is now scarcely larger than normal.

1st October.—120 milliampères for 5 minutes.

4th " 120 " " 5 "

6th " 120 " " 5 "

8th " 120 " " 5 "

11th " 120 " " 5 "

13th " 120 " " 5 "

18th " 120 " " 5 "

20th " 120 " " 5 "

Patient left hospital and reached home very comfortably. She was so well that people in the village crowded round her to see for themselves the change in her condition. She kept well for about two months; then wrote on the 27th December to say that she was not so well, and that the discharge had begun again. On the 12th January 1888 she

came back to the hospital. The tumour reached as high as the umbilicus, and the part projecting through the os was again sloughing. The temperature was $102^{\circ}\cdot 2$.

12th January.—200 milliampères for 5 minutes.

14th " 200 " " 5 "

A large mass came away yesterday. The sound was made negative.

17th January.—260 milliampères for 5 minutes.

19th " 275 " " 5 "

21st " 260 " " 5 "

26th " 160 " " 5 "

At first the patient improved, but now the intrauterine mass has again begun to slough, and there is again fever. On account of the feverish condition the treatment had to be discontinued, as the Edinburgh Royal Infirmary was not provided with a suitable battery, and we did not have, at the time, a portable one. Towards the end of March, however, it was thought better to allow the patient to run the risk of going for the treatment, as we had arranged to leave Edinburgh.

22nd March.—100 milliampères for 5 minutes.

24th " 125 " " 5 "

The sound was again made positive.

27th March.—210 milliampères for 5 minutes.

29th " 150 " " 5 "

31st " 170 " " 5 "

2nd April.—170 " " 5 "

3rd " 170 " " 5 "

5th " 170 " " 5 "

There was decided improvement, and on leaving Edinburgh, Dr Stirton, of the Glasgow Royal Infirmary, kindly consented to take charge of the case. After a few weeks in Glasgow she got home sick, and so anxious to get home that she risked the long journey, and died a few days afterwards. What was the exact pathological condition it

is impossible to say; it was certainly not the ordinary submucous fibroid condition, the material which was removed on several occasions resembling in appearance a mucous polypus more than anything else. It is not of much use to speculate on what might have been had things been different, but it is at least possible to believe that life, which was prolonged for six months or more by the electrical treatment, might have been permanently saved had the treatment in 1887 been continued for a greater length of time; that is to say, if the growth was not of a malignant nature.

CASE V.—Married, age 42, was sent home by Dr Turner of Gibraltar for hysterectomy. There is nothing of particular interest in the previous history of this case. For several years a fibroid of the uterus had been slowly undermining the general health, although there was neither hæmorrhage nor any other of the usual symptoms an uterine fibroid gives rise to. She could not walk without the assistance of a stick in one hand and some one on the other side to help her along; but an extract from a letter of Dr Turner's will give perhaps the best idea of her condition before the treatment was commenced:—"I have to thank you for your kind note regarding Mrs —, and to express my great satisfaction that you have found her case possibly amenable to less hazardous treatment than the operation of extirpation. Her condition at one time, about three months ago, was such that her life seemed seriously threatened, and I doubted whether she would ever be able to stand a journey to England. I did not hesitate to recommend her undergoing the operation provided she got sufficiently well to travel. Before leaving Gibraltar she had improved considerably, and possibly the voyage home has done her good. I shall be most grateful if, by means of the electric current, you are able to stay the

growth of the tumour, and enable Mrs —— to tide over the few years that remain until the menopause."

The case did not appear to be a very suitable one for treatment; but as every case of fibroid giving rise to symptoms had to be treated after the same plan, this one had to be taken like the rest.

The tumour extended to one inch above the umbilicus on the right side, and scarcely so high on the left. It came very low down into the pelvis, and the cervix was drawn up towards the left side and nearer to the pubes than usual.

Treatment.—As there was not any bleeding, the negative pole was placed in the uterine cavity and the current passed through from the abdomen. It was on every occasion badly borne, and even in the very weak doses which were used caused some pain. The strength of the currents used during the first course of treatment is only approximately correct.

9th July 1887.—40 milliampères for 5 minutes.

11th " 40 " " 5 "

12th July.—Feels decidedly better and stronger. The tumour barely reaches up to the umbilicus, and the patient herself thought that she was smaller.

13th July.—40 milliampères for 5 minutes.

14th July.—Slept last night in a dress, the band of which she could not fasten a week ago.

15th July.—40 milliampères for 5 minutes. Was able to take a walk without any support.

18th July.—50 milliampères for 5 minutes.

21st July.—The period has been on for two days. There was not any discomfort, although formerly she felt it coming for a week before it appeared. The tumour swelled up a little, but is now small again, and the patient says that her dresses are too wide.

26th July.—40 milliampères for 5 minutes. Walked two miles yesterday without fatigue.

28th July. —40 milliampères for 5 minutes.

30th „ 40 „ „ 5 „

1st August. —50 „ „ 5 „

6th August. —50 milliampères for 5 minutes. Feels splendidly well. The tumour is now fully 2 inches below the umbilicus, but it is also somewhat lower down in the pelvis. The abdominal wall is decidedly fatter.

8th August. —40 milliampères for 5 minutes.

11th „ 40 „ „ 5 „

18th August. —40 milliampères for 5 minutes. There has not been any discomfort with the period; there has been less flow, and the patient feels perfectly well. The tumour is fully 3 inches below the umbilicus, and there is not so much of it in the pelvis. She looks a new woman.

On the 3rd October the patient wrote from Eastbourne that she was feeling very well, although she had required to keep her bed for some days while in London, as she had been much exhausted by the shaking of an hour's drive in a cab.

Had we known what we know now, we would never have thought of allowing this patient to go home, especially to such a distance, after only thirteen applications, and we were not surprised to hear from Dr Turner in June 1888 that the tumour had begun to grow. She was very fairly well, but was afraid that she might return to the unhappy state from which electricity had rescued her. She therefore came back to England in the beginning of July.

3rd July 1888.—Mrs —— looks well, and walked alone from Victoria Station, about a mile. The tumour extends up to the umbilicus, and is not so large in the pelvis as it used to be. The sound passes with much greater ease than it did last year. 30 milliampères for 5 minutes.

5th July.—65 milliampères for 5 minutes.

7th	"	50	"	"	5	"
10th	"	50	"	"	5	"
12th	"	60	"	"	5	"
14th	"	55	"	"	5	"
17th	"	50	"	"	5	"
21st	"	60	"	"	5	"

The period is just over, and there is a greater diminution in size of the tumour than this would naturally account for.

24th July.—50 milliampères for 5 minutes.

26th	"	55	"	"	5	"
28th	"	55	"	"	5	"
31st	"	75	"	"	5	"
2nd Aug.	—75	"	"	"	5	"
4th	"	70	"	"	5	"

The tumour is decidedly less, and the patient feels very well and strong.

6th August.—60 milliampères for 5 minutes.

11th	"	50	"	"	5	"
14th	"	70	"	"	5	"
21st	"	70	"	"	5	"
23rd	"	90	"	"	5	"
25th	"	65	"	"	5	"
27th	"	85	"	"	5	"
29th	"	95	"	"	5	"
31st	"	105	"	"	5	"
3rd September.	—110	"	"	"	5	"
5th	"	115	"	"	5	"
7th	"	130	"	"	5	"

The tumour is 2 inches below the umbilicus, and is very much less prominent than it has ever been.

17th September.—60 milliampères for 5 minutes.

19th	"	65	"	"	5	"
21st	"	120	"	"	5	"

22nd September.—100 milliampères for 5 minutes.

24th „ 75 „ „ 5 „

Yesterday was Sunday, and Mrs — was out for eleven hours ; at church twice at least, and paying visits the rest of the time.

26th September.—140 milliampères for 5 minutes.

28th „ 100 „ „ 5 „

29th „ 220 „ „ 5 „

The tumour is small—2 inches below the umbilicus—and the patient says that she is in perfect health.

CASE VI.—Single, age 47, was seen in 1885 with a large uterine fibroid.

Patient was first aware that she had a tumour at about the age of 35, though before that time she found that her monthly periods were increasing in quantity. There is always pain, sometimes at one side, sometimes at the other, always aggravated every month. The periods, often floodings, now last six days, and recur every two weeks. For several years she has scarcely ever missed a month when it did not become necessary to afford relief to the bladder by means of the catheter. The woman says that she is willing to run any risk, no matter how great, which would give her a chance of comfort. The appearance of the woman is peculiar, as her waist, or at least the part round which her petticoats are fastened, is situated immediately below her arm-pits. She has difficulty in getting about from the weight, and the legs are always swollen.

The tumour itself was large ; it was slightly irregular, and extended beneath the ribs and sternum, raising them greatly. It is not possible to say how high the upper margin of the tumour reached to ; but it really appeared that there would be little room in the chest for the thoracic organs. Within one inch of the vaginal outlet the finger came on a round smooth mass as hard as stone, which was jammed

tightly in the pelvis. No cervix could be felt, and the finger could not be passed for any distance on account of the jamming of the tumour. The urethra measured 5 inches, and the bladder was situated high up on the left side of the abdomen. The retention of urine at the periods was easily explained, as it was evident that even slight swelling of the tumour would close the urethra by pressing it against the symphysis pubis. There was complete immobility of the tumour both in the abdomen and in the pelvis. The weight of the mass was probably nearer 40 than 30 pounds. After beginning the treatment of such growths by electricity, I called on the woman and suggested that she should try it, as it could hardly make her any worse than she was. She was sceptical, but allowed herself to be persuaded.

The electrical current could only be passed through the tumour by puncturing the mass in the pelvis. The negative pole was connected to this instrument. Owing to the occupation of the patient, the treatment was prolonged over many months. She had difficulty in getting away from her business. She was proprietress of a small shop, and she could not afford to get any one to look after it oftener than once a week or so. During the whole of the time she was not confined to her bed even for an hour, and was always to be seen in her shop, except for the hour or two when she left it to come for the treatment.

The strength of the current recorded at the first eighteen sittings is approximate only.

11th July.—80 milliampères for 5 minutes.

15th *"* 150 *"* *"* 5 *"*

The patient feels much as she did ; but the tumour seemed to be slightly movable.

19th July.—90 milliampères for 5 minutes. Says that she is no worse.

22nd July.—80 milliampères for 5 minutes.

12th August.—80 milliampères for 5 minutes.

She thinks that she can walk a little more easily. The period is over, and was much the same as usual ; no better, and not any worse. There is now room to pass the finger up to the cervix.

16th August.—40 milliampères for 5 minutes. Walks more easily. The tumour is more movable, and is smaller and more lobulated.

20th August.—40 milliampères for 5 minutes.

28th August.—The period came on without any pain ; there was more bleeding, and the catheter had not to be used. This has been the most easy time for many years.

2nd September.—45 milliampères for 7 minutes.

5th " 40 " " 7½ "

13th " 40 " " 7½ "

20th " 40 " " 7½ "

There is now marked decrease in the size of the tumour.

26th September.—40 milliampères for 7½ minutes.

17th October. —40 " " 7½ "

There was much less flow this time ; it was bad for one day only. However, the catheter was required. The tumour is now free of the ribs.

24th October. —60 milliampères for 5 minutes.

9th November.—70 " " 7½ "

There has been rather more flow again, but the catheter was not required. The tumour continues to diminish in size ; it can be pushed about, and has become very much lobulated.

16th November.—40 milliampères for 7½ minutes.

24th " 40 " " 7½ "

30th " 70 " " 7½ "

16th Jan. 1888.—125 " " 10 "

The period was passed through without pain, discomfort, or retention.

26th January.—150 milliampères for 5 minutes.

7th February.—100 milliampères for 5 minutes.

26th March. —100 " " 8 "

29th " 150 " " 8 "

31st " 150 " " 8 "

2nd April. —150 " " 5 "

4th " 150 " " 5 "

6th " 150 " " 5 "

The course of treatment thus consisted of thirty applications. Thirty punctures were made into the tumour from the vagina. On one occasion only was there any bleeding from the wound; it stopped, however, before half a teaspoonful of blood had been lost. Every puncture opening had healed before another was made, and it would have been impossible for any one to know that there had been any solution of continuity.

For the reason stated, the treatment extended over a period of nine months. Almost from the beginning there was improvement, and during the whole time there had been retention on only two occasions. The floodings had entirely ceased, and the tumour had decreased in size in a marked degree. Owing to the fact that a large part of the tumour was concealed by the chest-wall, it is difficult to say by how much the mass became smaller; but probably it was considerably less than half the size it was before being treated by electricity. A complete relief from pain had also been obtained. In September she was very well; there was not any pain, there was less discharge at the periods, and there had been no occasion for the use of the catheter. The tumour was about the same size as in April.

19th January 1889.—The tumour is gradually becoming smaller, and there is a great change for the better in the figure. The periods last three days, and recur every four weeks; there is not any pain; there has not been any retention; she feels quite well, and sleeps better than she

used to do, and is quite satisfied, even although there is still an inert mass in her abdomen.

CASE VII.—Single, age 37.

Until the beginning of the year 1882 this lady was well. About that time she began to have menstrual trouble; there was pain and also increased loss. For three and a half years these symptoms became steadily worse, and for a week or ten days in every month the lady was in the habit of leaving her own house and going to a sort of private hospital. She herself was mainly responsible for her troubles, as she allowed that she had declined having anything done.

When she came under our care in July 1887, she was really ill and was constantly suffering. There was a feeling of fulness, great irritability of the stomach, profuse watery discharge, and great pain and feeling of pressure on the bladder. In addition, there was a great loss at the periods, and at those times all the symptoms were much aggravated, more especially the bladder pain and the irritability of the stomach.

On examination it was found that the tumour reached up to the ribs, and on passing the finger into the vagina, it was felt within half an inch of the outlet. The mass was particularly soft, and so completely filled the pelvis that the finger could not be passed up any distance to feel for the lips of the fully dilated cervix. The vaginal outlet was small, and enucleation of a mass, weighing probably ten pounds, would have been attended by great danger, more especially as the anterior wall of the uterus was found, later on, to be much thinned.

The patient was very much against operation, and was thankful to try what electricity could do for her tumour, though she was made aware that no benefit might accrue from the treatment. Of course, it was only possible to

puncture the mass. On all occasions this was done and the needle made negative.

13th July 1887.—60 milliampères for 5 minutes.

15th " 80 " " 5 "

There was not any discomfort after the first application, except that there has been more of the watery discharge.

18th July.—60 milliampères for 8 minutes.

20th " 65 " " 8 "

22nd " 75 " " 8 "

24th July.—The period has come on with the usual retention and pain. The ordinary dose of morphia required by the patient at those times, viz., three-quarters of a grain hypodermically, has been required.

8th August.— 60 milliampères for 5 minutes.

11th " 80 " " 8 "

13th " 100 " " 5 "

The pelvis does not seem to be so tightly filled by the tumour.

16th August.—60 milliampères for 8 minutes.

25th " 60 " " 8 "

Morphia was required as usual at the commencement of the period, but the catheter had not to be used.

27th August. —120 milliampères for 8 minutes.

30th " 100 " " 8 "

1st September.— 80 " " 8 "

3rd " 100 " " 10 "

17th " 50 " " 5 "

There was not so much pain as usual. The tumour is now scarcely above the umbilicus, and the finger can be pushed up between the pelvis and tumour, until the anterior lip of the cervix is reached, situated in the abdomen above the pubes.

20th September.— 80 milliampères for 5 minutes.

22nd " 120 " " 5 "

24th " 110 " " 5 "

27th September.—120 milliampères for 7 minutes.

29th " 120 " " 7 "

Is feeling more comfortable and lighter.

1st October. —120 milliampères for 5 minutes.

11th " 120 " " 7 "

The period has been very much as usual.

13th October. —120 milliampères for 7 minutes.

15th " 120 " " 7 "

18th " 120 " " 7 "

20th " 120 " " 7 "

22nd " 120 " " 7 "

25th " 120 " " 7 "

3rd November.—120 " " 7 "

5th " 120 " " 7 "

8th " 120 " " 7 "

10th " 120 " " 15 "

12th " 120 " " 15 "

15th " 120 " " 15 "

3rd December. —200 " " 7 "

The period was scarcely so bad as usual, and the patient was in bed for three days only. Gaiffe's galvanometer was used.

6th December. —180 milliampères for 10 minutes.

8th " 230 " " 15 "

10th " 190 " " 15 "

13th " 215 " " 12 "

14th " 245 " " 15 "

31st " 200 " " 10 "

3rd Jan. 1888.—210 " " 15 "

5th " 150 " " 10 "

7th " 200 " " 10 "

22nd February.—175 " " 5 "

Has been confined to the house with a cold.

24th February.—200 milliampères for 5 minutes.

27th " 175 " " 5 "

29th February.—150 milliampères for 5 minutes.

2nd March. —120 " " 5 "

*5th "*150 " " 8 "

The tumour is at least one-third smaller, and reaches up to the umbilicus when it is swelled before a period. We considered that we had probably gained as much as we could by means of electricity, and that both the difficulty and danger of operation had been much lessened. The lady could not make up her mind to have an operation at that time. She came up to town in June, and we found that there had not been any change in the tumour since March. After a couple of days in town her courage went, and she had almost to be coerced into submitting to enucleation.

7th June.—The tumour, weighing almost five pounds, was removed piece-meal, and the lady went home to Edinburgh on the twenty-second day.

This case bears out to the letter what is claimed for electricity: it reduces, but does not cause the disappearance of a tumour.

CASE VIII.—Married, age 48, seen with Dr Dunsmure.

This lady has been bleeding badly for twenty years. She has often been plugged; she has often had iron and various other styptics injected, but still she bleeds; and in spite of all treatment the bleeding and general health become worse every year. There is now scarcely any period, as the bleeding is almost continuous.

The patient is a big, fat, soft woman, very anæmic and breathless. Her heart is in a bad condition; it is dilated and fatty, and the purple venous radicles in her cheeks show that it is not able to do its work properly. She is also subject to attacks of diarrhœa. She is very weak, and altogether in a bad state. As there was not any sign that the bleeding would stop of itself, it was determined to com-

mence the treatment without delay, as every day seemed to be of importance. The lady was much disappointed when she heard that the treatment could not be carried out in her own house. The strength of the current registered is not exact.

The patient was so fat that it was difficult to make out the upper margin of the tumour, more especially as any pressure on the abdomen interfered with her breathing. The os was patulous, and the sound passed to a depth of six inches.

14th July 1887.—100 milliampères for $7\frac{1}{2}$ minutes.

16th " 100 " " 5 "

19th " 65 " " 5 "

21st " 80 " " 10 "

There has not been any bleeding for two days, the first time it has stopped for the last twelve weeks.

23rd July.—40 milliampères for 10 minutes.

25th " 60 " " 10 "

27th " 60 " " 10 "

There has been no return of the bleeding.

29th July.—A message was sent to say that the patient was unable to come for treatment, as she had caught cold while out driving the day before, and had been seized with a bad attack of diarrhœa during the night.

30th July.—Mrs C. became collapsed, and died early this morning. It was a great disappointment, as the case promised to be a most satisfactory one, and but for the attack of diarrhœa would doubtless, in spite of the great exhaustion and anæmia, have done well.

CASE IX.—Married, age 43 ; commenced the treatment by electricity in July 1887.

In February 1886 Dr Keith was consulted as to the advisability of operation, and strongly advised the patient to wait for a time, as the local difficulty in the removal of

the tumour would have been great. There were about 4 inches of fat on the abdominal wall, and a great deal of enucleation would have been required low down in the pelvis. If the tumour grew, operation would have been much more easy, as the wall would have been stretched, and there would therefore be more space to work in. The patient herself was very anxious to have something done.

Some extracts from a diary kept by this lady gives one an idea of her misery. One entry says, "Quite a busy week; out shopping; feel so thankful to be able to move about." The next day, however, she is in bed again. Another, "Only seven days—how thankful I am."

18th June 1886.—"I feel miserable. A burden to myself, and no use to anybody."

The lady was stout and very anæmic, and, when well, was unable to walk far on account of breathlessness. She says that she often bleeds for a month at a time, and is seldom dry for more than a week. The tumour extends up to the ribs, and fills the abdomen except in the left flank. The interior of the cavity was tender, and the passage of the sound caused pain until about half of the treatment had been gone through. The depth of the cavity was 7 inches at least.

The case was an instructive one to a beginner. The patient was, after the first few applications, extremely sensitive to the electrical current, and it was not until the treatment was almost finished that anything approaching large doses were given. During the first four sittings the sound was made negative; during the remainder it was positive.

14th July.—80 milliampères for 5 minutes.

16th " 80 " " 5 "

25th " 80 " " 5 "

The period is over, and as the flow was profuse for only three days, the lady, who is a woman full of spirits, thinks that she is to be quickly well.

28th July. —80 milliampères for 5 minutes.

11th August.—80 " " 5 "

After an interval of one week the flow appeared, and the loss has been greater than it has been for the past eight months.

13th August.—70 milliampères for 5 minutes.

16th " 40 " " 5 "

The tumour scarcely reaches above the umbilicus, and the patient feels very well.

25th August.—40 milliampères for 5 minutes.

The third period within less than six weeks is over. There was scarcely as much bleeding as last time, but still it has been bad. The tumour is swelled up to within an inch of the ribs.

27th August.—40 milliampères for 5 minutes.

Two days afterwards the period again came on, for the fourth time in exactly six weeks. The lady and her husband are both much discouraged, and are rather inclined to stop treatment; and the matter is to be compromised by her going to the country for a month.

6th October.—40 milliampères for 5 minutes.

The patient is decidedly better. The last period continued for five, instead of the average of thirteen days. The tumour is not so prominent.

8th October.—40 milliampères for 5 minutes.

11th " 40 " " 5 "

The patient says that she feels "awfully well."

13th October. —35 milliampères for 5 minutes.

15th " 35 " " 5 "

17th " 30 " " 5 "

19th " 30 " " 5 "

22nd " 35 " " 5 "

24th " 40 " " 5 "

26th " 40 " " 7 "

28th " 40 " " 7 "

31st October. — 40 milliampères for 7 minutes.

2nd November.—40 " " 7 "

15th " 40 " " 7 "

The first period since the lady came home from the country is over. It did not appear until ten days beyond four weeks, lasted six days, and was never in excess of the natural.

17th November.—70 milliampères for 7 minutes.

19th " 70 " " 7 "

22nd " 70 " " 10 "

24th " 75 " " 10 "

26th " 30 " " 7 "

Gaiffe's galvanometer was used to-day.

29th November.— 75 milliampères for 10 minutes.

1st December.— 65 " " 10 "

3rd " 85 " " 10 "

6th " 75 " " 10 "

15th " 100 " " 10 "

The period has lasted five days, and was bad for two.

17th December.—100 milliampères for 10 minutes.

20th " 125 " " 10 "

22nd " 125 " " 10 "

24th " 140 " " 10 "

27th " 140 " " 10 "

29th " 125 " " 10 "

10th Jan. 1888.—170 " " 10 "

The period has lasted six days; three of them bad.

12th January.—165 milliampères for 10 minutes

14th " 160 " " 10 "

17th " 170 " " 10 "

There was rather a bad hæmorrhage in the end of March.

In August the lady was in town; she was up for a month, and had taken her daughter, a girl of 12 or 13, everywhere—British Museum, Tower, Crystal Palace, etc., etc. She was perfectly well, and the period had recurred

regularly every two months, and had lasted three days. One day this lady said that she had only submitted to the treatment by electricity, because, when the treatment failed as she expected it would do, she then thought that she would be operated upon.

29th February 1888.—"I have had such a good time this month. Been ill only three days, and had only one day very bad, and a very happy woman is writing to you. I am feeling very well and strong, and so hopeful."

11th December 1888.—"I am sure that you will be glad to hear that I am in the best of health. I have never been a day in bed since you saw me there yourself, just before you left for London. I am only two days bad now, and so little in quantity that I require to take no rest, and move about all the time. What a change to what used to be, and how delightful it is! I never in my most sanguine moments thought I would be so well."

10th June 1889.—"I am very thankful to tell you that I am keeping well and strong. From August last till February I was just one day 'poorly' regularly every month, and was awfully well. But since then I have had no period at all. I can do any amount of walking, etc."

CASE X.—Single, age 37, was sent by Dr Underhill, and was treated at the Woman's Dispensary, Edinburgh.

Patient has not been strong for a number of years, and has lost a great deal of blood at her periods for a long time. The bleeding now usually lasts two weeks out of every four. About the beginning of the year she noticed that there was a lump in her abdomen; but was not sent to Dr Underhill on account of that, but because she was complaining much more than usual of pain and discomfort across the lower part of the abdomen and down the legs. Dr Underhill had seen the rapid improvement in health which had come to Case V. after even a few applications of

electricity, and considered that this would be a satisfactory test case on account of the hæmorrhage, pain, and increasing debility.

On examination, a hard, smooth tumour, situated centrally in the abdomen, was felt extending to within 2 inches of the umbilicus. The cervix was situated very far back and low down in the pelvis, and it was with some difficulty that the sound passed to a depth of 3 inches.

As this was one of the early cases, few applications were made, and even these few were not very strong, the exact strength being a little doubtful.

22nd July 1887.—50 milliampères for 5 minutes.

26th " 50 " " 5 "

29th " 50 " " 5 "

There is already less pain, and the patient feels stronger. The tumour has begun to decrease in size.

16th August.—50 milliampères for 5 minutes.

She feels decidedly better; there is less pain, little discomfort, and there is a marked diminution in the size of the growth, more especially at the sides. There has been a very easy period, lasting seven days, during which there was much less discharge than usual.

20th August. —50 milliampères for 5 minutes.

5th September.—40 " " 5 "

As there had been another period, accompanied by more loss and pain, the sound was attached to the positive instead of the negative pole, as had been done in the five previous applications.

8th September.—40 milliampères for 5 minutes.

13th " 60 " " 5 "

20th " 70 " " 5 "

7th October.—60 " " 5 "

The tumour is probably not half the size it was six weeks ago. It extends now to 2 inches above the pubes.

20th October.—60 milliampères for 5 minutes.

28th October. —60 milliampères for 5 minutes.

31st " 60 " " 5 "

4th November.—70 " " 5 "

The tumour can now be felt one inch above the pubes and entirely to the left of the middle line.

9th February 1888.—Has been very well. There is not any pain, there is very much less loss at the periods, and on pressing deeply into the abdomen, no vestige of tumour can be felt.

6th April.—Called to-day to say that she was quite well.

CASE XI.—Single, age 26, was sent to the Royal Infirmary, Edinburgh, by Dr Wilson of Old Meldrum in July 1887.

The patient was a tall, nice-looking girl, but terribly blanched and bloodless. For rather more than two years there had been a great loss of blood at every menstrual period. Now, the flow lasts for ten or twelve days, and is usually accompanied by severe pain. For the last eight months hypodermic injections of ergot have been given once and sometimes twice a week, and relief from pain has had often to be obtained by the use of morphia suppositories.

On first examination, the tumour was found to extend to midway between the pubes and umbilicus, and before the period, it reached up to the umbilicus. The cervix was situated far back; and in front of it and pressing down on the bladder was a mass of tumour. The sound passed 4½ inches.

30th July 1887.—60 milliampères for 5 minutes.

1st August " 80 " " 5 "

The period, which was over before the first application on 30th July, having lasted twelve days, returned on the 3rd August, and the bleeding continued for ten days.

16th August.—40 milliampères for 5 minutes.

18th " 60 " " 5 "

20th August.—60 milliampères for 5 minutes.

23rd " 60 " " 5 "

25th " 60 " " 5 "

27th " 80 " " 5 "

The tumour has been becoming steadily smaller, and is now less, the patient says, than when first noticed.

30th August.—50 milliampères for 5 minutes.

1st September.—80 " " 5 "

For two years the patient has not felt so well and strong as she does to-day. She looks immensely better than she did a month ago.

3rd September.—80 milliampères for 5 minutes.

6th " 80 " " 5 "

8th " 80 " " 5 "

On deep pressure the top of the tumour can be felt with difficulty from the abdomen.

10th September.—80 milliampères for 5 minutes.

There was a little red discharge for a few hours yesterday.

13th September.—80 milliampères for 5 minutes.

17th " 80 " " 5 "

20th " 70 " " 5 "

With the exception of a slight "show" for a few hours, there had been no hæmorrhage from the uterus for nearly six weeks, and the patient was allowed to go home. Shortly after going home she wrote to say that she had had a very severe bleeding. Some time after that she wrote that she was much better; but as she was steadily losing ground, by the beginning of 1888 she was to come back to the hospital for more of the treatment, experience having shown that she had had neither strong enough doses nor enough of them. Our removal from Edinburgh prevented further treatment, and about September 1888 it appears that her ovaries were removed by a gentleman, who at that time advised, strangely enough, treatment by

electricity to several patients, who eventually came south for it.

The exact strength of current used was doubtful.

CASE XII.—Married, age 48, came to the Woman's Dispensary, Edinburgh, in June 1887.

Married for twenty-six years, and the mother of eight children, the youngest being 11 years of age. She does not remember when she first began to be ill, but says that it is a number of years ago. She suffers from constant bearing-down pain, which prevents her walking more than a very short distance at a time, and from general debility, which prevents her attending to her house. She is frequently so used-up by 12 o'clock that she has to go to bed for the rest of the day. Menstruation is now very irregular, and occurs every few months.

On passing the finger into the vagina, it was found that the whole of the pelvis was filled by a tumour. The cervix uteri, of large size and deeply lacerated on both sides, was situated behind and close to the pubes, and the sound passed backwards with a very much exaggerated curve to a depth of $3\frac{3}{4}$ inches. Had the cervix not been torn the length of the womb would have been about 5 inches. The fibroid was so large and so firmly fixed in the pelvis, that it could not be raised either by pushing up with the fingers or with the sound. Some little temporary relief was given by raising it slightly by means of glycerine pads.

Treatment by electricity was begun on the 8th August 1887. The sound attached to the negative pole was passed into the uterine cavity, and a current of about 50 milliamperes allowed to flow for five minutes. The patient did not know that anything special was being done, and thought it a long examination! The treatment was repeated on the 19th. In the meantime there had been some bleeding;

but the woman felt better and lighter, and had eaten her breakfast with more relish than she had done for a long time. Applications were made on the 28th, on the 9th and 23rd September, and on the 14th, 21st, 24th, and 31st October,—the direction of the current being reversed in the last five. After the second there was decided diminution in size of the tumour. After the sixth, I was able to raise the mass out of the pelvis into the abdomen with the sound, though it dropped back again as soon as the instrument was removed. Nothing was seen of this patient until the 20th January 1888. In the interval she had, in addition to doing her house work, nursed her daughter through a bad attack of double pneumonia following rheumatic fever, which had left the heart in a shaky condition.

20th January.—65 milliampères for 5 minutes.

27th „ 155 „ „ 5 „

To-day the uterus was found to have left its position of retroversion. It now extended from 3 inches above the pubes to the vaginal outlet. The treatment consisted in eleven applications—four negative and seven positive. The primary result was that she became such a busy woman that she did not have time to come for more treatment, as I wished.

In September she was very well.

19th January 1889.—Almost one year from the date of the last application she was in perfect health, except for a slight occasional feeling of weakness across the stomach; able to do all her work, and to walk as far as she ever wished to walk. She has still periods occasionally as before.

CASE XIII.—Married, age 47; was sent by Dr Ross of Belfast.

For three years this lady has been an invalid. She can-

not move, even while in bed, without setting up great pain in the pelvis. She can scarcely walk, and she finds that standing is worse than anything else. Menorrhagia is also a prominent symptom.

Examination is difficult, on account of great tenderness, but the pelvis is found to be almost filled with tumour, or tumour combined with surrounding cellular swelling. The sound passes backwards for between 3 and 4 inches.

The treatment was carried out before we had Gaiffe's galvanometer.

13th August 1887.—40 milliampères for 5 minutes.

15th „ 40 „ „ 5 „

Was very tired after the first application; but thinks that she already feels a little better.

17th August.—40 milliampères for 5 minutes.

19th „ 50 „ „ 5 „

Says that she is decidedly better to-day.

22nd August. —50 milliampères for 5 minutes.

24th „ 50 „ „ 5 „

3rd September.—40 „ „ 5 „

There has been rather less flow than usual, and there has been a vast improvement in comfort, comparatively little pain, and freedom to walk about a little.

5th September.—40 milliampères for 5 minutes.

Walked fully half a mile to-day.

7th September.—40 milliampères for 5 minutes.

To-day she does not feel so well.

9th September.—40 milliampères for 5 minutes.

12th „ 50 „ „ 5 „

14th „ 50 „ „ 5 „

Says that she feels “tip-top,” and is in such spirits that she had to be strongly warned to be careful.

29th September.—80 milliampères for 5 minutes.

There has been less discharge, though the lady has been

walking about every day. She can stand now with perfect comfort, and without bringing on pain.

1st October.—85 milliampères for 5 minutes.

3rd „ 70 „ „ 5 „

The sound was always made positive.

Is now quite well, and walked a mile. The cavity measures $2\frac{1}{2}$ inches.

7th October.—“ I left Edinburgh on Tuesday, and arrived at Stranraer, Wednesday. I was up before six to catch the boat, took two of the cocaine lozenges, which were of such use to me. I was not ill. My ‘period’ came on that morning, so I felt most thankful I got on so well. I arrived here (Belfast) at half-past eight last evening, and feel wonderfully well to-day. Dr Ross was much pleased with my looks and progress. Your treatment has been of great use to me.”

13th February 1888.—“ I feel so much better than I did last winter.”

Dr Ross wrote on the 10th June 1889:—“ I made a vaginal examination, and the change for the better in and around the uterus is remarkable; in fact, I could find nothing amiss except an elongated cervix. The abdominal swelling has also greatly subsided, and with this improvement in the physical signs, the general is as great. Severe hæmorrhage ceased, and she can now walk about. Both she and I consider truly that her case is a triumph for electricity.”

CASE XIV.—Married, age 36, was admitted into the special Ward for the treatment of abdominal tumours in the Royal Infirmary, Edinburgh, in August 1887.

The patient was the mother of five children, the youngest of whom was fifteen months old. These had all been born without aid, after tedious labours. Of three sisters one has suffered from profuse discharge every month, and was

becoming so much run down that she was advised by Mrs — to come home for the same treatment which she herself had undergone. As this meant a journey from China, it shows very clearly how much benefit this patient had derived from her treatment by electricity. However, the change of air to Formosa did wonders, and there is at present no necessity to come further.

Mrs — had enjoyed good health until about the beginning of the year. In February she was admitted into one of the medical wards of the Royal Infirmary on account of an attack of inflammation(?) While there the tumour was discovered; it was said to have been pronounced to be cystic, and operation was strongly advised. After a residence of five or six weeks she went home, and while there was visited by the house-physician, who had been sent to try and persuade her to allow the tumour to be removed. This was, however, declined. When she was admitted under our care she complained of abdominal pain, of a feeling of dragging from the back, of difficulty in walking, and of being easily fatigued. There is also very great pain every month. There was no increase in menstruation, but the tumour had been noticed to swell up before the flow came on.

On examining the abdomen, the tumour was found to be situated rather more on the right than the left side, it reached to midway between the pubes and the umbilicus, and it could be moved a little in any direction. But there could be no doubt but that it was an ordinary fibroid tumour of the uterus. The cervix was in the usual situation, and the sound entered fully $3\frac{1}{4}$ inches.

The treatment consisted in thirteen negative applications, the strength of the currents recorded being not absolutely correct.

16th August.—40 milliampères for 5 minutes.

18th " 60 " " 5 "

20th August.—60 milliampères for 5 minutes.

She now walks much better and feels stronger in every way.

30th August.—80 milliampères for 5 minutes.

1st September.—60 " " 5 "

Was very tired after the last sitting, and complains of frontal headache.

3rd September.—60 milliampères for 5 minutes.

10th " 60 " " 5 "

13th " 60 " " 5 "

The headache gave way to a few doses of iodide of potassium, and the patient thinks that she is nearly well.

17th September.—50 milliampères for 5 minutes.

20th " 60 " " 5 "

22nd " 60 " " 5 "

24th " 60 " " 5 "

27th " 50 " " 5 "

She feels quite well, and the treatment will now be stopped. Indeed, it has been difficult to persuade her to come as often as she has.

26th February 1888.—Is in perfect health, and the tumour feels to the patient to be the size of a small egg.

September 1888.—The general health continues to be good, but she is easily fatigued, and sometimes thinks that the tumour is larger.

19th January 1889.—Sixteen months after the cessation of the treatment she says, "I am as well as I have any desire to be." She can walk well and without undue fatigue; there is not any dysmenorrhœa; no pain in the abdomen, and the dragging from the back is a thing of the past.

CASE XV.—Married, age 34, was sent by Dr Wemyss of Broughty-Ferry.

This patient had been married for a number of years, and had enjoyed good health until the early part of 1885. The

commencement of her illness is somewhat unusual. Without there being anything to cause or account for it, the lady vomited a large quantity of blood. This occurred at the time of the period, and appeared to have replaced it, as the usual discharge from the uterus did not come on. From that time there has been more or less pelvic discomfort and pain. There is not any menorrhagia; indeed, there is less blood than there used to be, but it is accompanied by a profuse watery discharge. Dr Wemyss sent her first in October 1885. At that time she was advised to wait and do nothing. At her next visit the same advice was given. When she came for the third time, however, the tumour was decidedly larger, and was causing more discomfort. She was advised to have the ovaries removed, and was to come back to have the operation when it was convenient to her. But, when she returned in August, we had given up operating on fibroids. For about a week out of every month the patient is fit for little; something had to be done.

On examination, it was found that the uterus was pushed forwards by a mass filling the hollow of the sacrum. The sound passed forwards to a depth of $4\frac{1}{4}$ inches, and the uterus could be moved almost independently of the mass of tumour.

The treatment consisted in sixteen applications of electricity, the clay pad being made positive and the sound or puncturing needle negative.

22nd August 1887.—40 milliampères for 5 minutes.

24th " 40 " " 5 "

26th " 50 " " 5 "

29th " 70 " " 5 "

3rd September. —60 " " 5 "

The mass was punctured to-day, and the passage of the electrical current gave rise to less discomfort. There has been a period, which caused much less pain and disturbance, and was accompanied by less watery discharge.

6th September.—40 milliampères for 5 minutes.

8th „ 40 „ „ 5 „

10th „ 60 „ „ 7 „

There is a marked improvement ; the lady walks better, and finds her left leg, which has been a source of trouble to her for a long time, much more comfortable and less painful.

13th September.—40 milliampères for 7 minutes. A puncture was made to-day for the second time. The patient says that she feels almost quite well.

15th September.—40 milliampères for 5 minutes. The mass, which was previously as large as the fist, feels now not half the size.

17th September.—50 milliampères for 5 minutes.

20th „ 60 „ „ 5 „

22nd „ 70 „ „ 7 „

24th „ 50 „ „ 7 „

27th „ 50 „ „ 7 „

29th „ 50 „ „ 7 „

Says that she is perfectly well. The uterine cavity is one inch shorter than it was.

Dr Wemyss wrote on 21st October 1888,—“ Mrs ——— keeps very well. She is in excellent health, and the tumour feels very much the same in size. The sound can only be inserted about 3 inches.”

CASE XVI.—Married, age 37, from Dr Wilson, Johnston, Renfrewshire ; consulted Dr Keith in August 1887.

At the age of 23 she was married, and enjoyed good health for twelve years. Two years ago she began to lose too much blood every month, and a year after, a tumour was discovered on examination, which was made after a severe flooding. Since that time she says she has flooded nearly every month, and that the tumour has increased very markedly in size. Before each menstrual period it had

been noted that the tumour became considerably swelled. Of late she has become breathless and unable to do much.

The patient, a big, soft, flabby woman, is very bloodless. On examining the abdomen a tumour could be both seen and felt, occupying the right side of the abdomen, crossing the middle line to the left and filling half that side. Its upper margin was level with the umbilicus. There was some very considerable difficulty in passing the sound on account of the irregularity of the cavity, which measured $4\frac{1}{2}$ inches in depth. The diagnosis was, of course, evident.

This was a case for the application of the positive pole to the interior of the uterus, and the treatment was begun on the

23rd August 1887.—40 milliampères for 5 minutes.

25th " 40 " " 5 "

She was very tired in the afternoon after the first application.

27th August.—40 milliampères for 5 minutes. She feels better than she has done for the past eighteen months, and there is a decided decrease in the size of the tumour.

30th August. —40 milliampères for 5 minutes.

1st September.—40 " " 5 "

Feels very well, except for a frontal headache, which was, however, quickly relieved by iodide of potassium.

3rd September.—40 milliampères for 5 minutes.

5th " 40 " " 5 "

17th " 40 " " 5 "

The period is over. The loss has been very much less than usual, though still much more than it ought to be. The patient feels better than usual, and the tumour swelled up but little.

20th September.—40 milliampères for 5 minutes.

22nd " 80 " " 5 "

24th " 60 " " 5 "

28th September.—120 milliamperes for $7\frac{1}{2}$ minutes.

1st October. — 60 " " 5 "

The tumour reached to barely 2 inches above the pubes on the right side. There is now nothing to be felt on the left. The cavity measures $2\frac{3}{4}$ inches. In the general health there is a marked improvement, and the patient says that she now feels as well as she was before she first began to be ill.

CASE XVII.—Married, age 30, was sent to the Edinburgh Royal Infirmary by Dr Whiteford of Greenock.

The history of this patient was as follows:—She had been married for ten years, and had known of the presence of a lump in her abdomen for five years. As this did not give rise to any inconvenience, the woman never thought of consulting a doctor until she began to be ill. The form the illness took was simply that she became unable to do anything for debility, due to excessive loss of blood at every menstrual period. She now bleeds for from ten to fourteen days at a time, and then has an interval of two or three weeks. This has been going on for the last two or three years.

She is seen to be ghostly white, her face, lips, and eyelids are absolutely colourless, and she can scarcely get about from weakness; even to cross a room requires a great effort on her part. A year ago she was a patient in the Greenock Infirmary for three months. She had a great deal of medicine while there, and says that she was told that she could not live long, and that nothing more than had been done could be tried in her case. Dr Whiteford gave her ergot, and this drug was the only one she had had which checked the hæmorrhage in the slightest degree.

On examining the abdomen a hard, smooth, very prominent tumour, extending to one inch above the umbilicus, and entirely filling the abdomen up to that level, was

felt. The cervix was very far back, and the sound passed 5 inches into the cavity of the womb.

The woman was very poor, and for a long time her food had consisted mostly of bread and tea, and even when there was anything better in the house, she did not feel able for the exertion of cooking it. Bread and tea cannot be a very good blood-making diet, yet it is wonderful how she managed to have so much blood to lose and yet be alive.

The exact strength of the current passed through the tumour is doubtful in the first six and twenty applications. As the period came on the day after she came into hospital, and lasted for fourteen days, the treatment was not begun until the

25th August 1887.—60 milliampères for 5 minutes.

27th " 80 " " 9 "

Was very tired after the first application.

30th August.—80 milliampères for 7 minutes.

She is surprised to find that she can walk more easily.

1st September.—80 milliampères for 5 minutes.

The tumour is decidedly smaller. Patient has begun to take Blaud's pills.

3rd September.—80 milliampères for 5 minutes.

6th " 80 " " 5 "

8th " 80 " " 5 "

10th " 80 " " 5 "

Can now walk two miles with ease, and says that she has not been so well nor has walked so far for the last two and a half years.

13th September.—80 milliampères for 5 minutes

Yesterday the tumour had swelled considerably, but is smaller again to-day.

15th September.—100 milliampères for 5 minutes.

17th " 90 " " 5 "

To-day she remarked that she would be quite happy if she kept as well as she now is.

20th September.—120 milliampères for 5 minutes.

29th " 105 " " 5 "

The first period since the commencement of the treatment is over; it lasted five days instead of, at least, ten, and although the flow of blood was pretty brisk while it did last, she does not feel much pulled down, and has immensely more colour than when she first came to Edinburgh.

1st October.—120 milliampères for 5 minutes.

Until now the positive has been the internal electrode. At the next seven the negative was used inside the cavity.

4th October.—100 milliampères for 5 minutes.

6th " 120 " " 5 "

8th " 120 " " 5 "

Yesterday the patient went to Leith and walked along the pier. She was out the whole of the afternoon, and must have walked at least five miles.

11th October.—120 milliampères for 5 minutes.

13th " 120 " " 5 "

15th " 120 " " 5 "

27th " 120 " " 5 "

The second period is over; the quantity of blood lost has been much the same as the last time. As there was a slight return of the flow of blood from the uterus after the last sitting, the direction of the current was again changed in the following ten applications.

29th October. —120 milliampères for 5 minutes.

1st November.—120 " " 5 "

3rd " 120 " " 5 "

5th " 120 " " 5 "

8th " 120 " " 5 "

The patient went to the Convalescent Home at Corstorphine. While there the flow came on; it lasted for six days, and was immensely less than it had been for a very

long time, yet the people at the Home were quite alarmed at the amount.

1st December.—135 milliampères for 5 minutes.

2nd " 240 " " 8 "

6th " 200 " " 10 "

8th " 190 " " 10 "

10th " 205 " " 10 "

The tumour is now one-third less in size than it was, and instead of being smooth has become irregular in outline. There has been a large deposit of fat on the abdominal wall. The period came on after this application, and the amount of blood lost was fully more than at the last three, yet the woman does not feel at all the worse for it.

24th December.—230 milliampères for 10 minutes.

26th " 240 " " 10 "

28th " 240 " " 10 "

30th " 235 " " 10 "

3rd Jan. 1888.—230 " " 10 "

The treatment consisted in thirty-six applications—twenty-four positive and twelve negative—and the patient left hospital a well woman.

There are several points of interest about this case. It cannot be said that the comfort and rest of the hospital had anything to do with her recovery, as she had had the same comfort and rest while in the Greenock Hospital. It would also be expected that a change from the low diet of tea and bread to the ordinary hospital fare would have resulted in an increased flow of blood, more especially as the improved diet was accompanied, almost from the beginning, by the administration of a regular course of iron pills. The woman was also sensible enough not to be distressed by the presence of a tumour which did not give rise to any symptoms; and again to consider herself cured when her tumour had, after having been an active agent for evil,

become quieted down and had ceased to give rise to symptoms.

In March Dr Whiteford reported that the patient was very well.

Dr Whiteford kindly sent the following report on 13th March 1889:—Monthly period now lasts six or seven days, as compared with four or five immediately after treatment and for six months thereafter. Still does not lose, withal, so much as formerly, but has more pain (pelvic) now at the time. The quantity lost during any one day has been gradually lessening during the last four or five months, but lasts two days longer. The tumour has increased in size towards the left side (this is her own opinion, and from my recollection I think this is probably true). Slight anæmic murmur in right jugular, but lips rosy in colour, and looks fairly well.

CASE XVIII.—Married, age 46, had been fragile and delicate for a number of years. She thinks that she has at all times lost more blood at the monthly periods than she could afford, and in the interval there is a constant leucorrhœal discharge. In addition to this she suffers from severe pelvic pains. Treatment has never done her more than very temporary good. The interior of the womb was curetted on three occasions, and was followed by some improvement for a time.

The uterine cavity measured four inches. Eleven applications of electricity were made in 1887, the internal electrode being positive. Seven additional applications were made in 1888.

26th August 1887.—70 milliampères for 5 minutes.

2nd September „ 40 „ „ 5 „

The first sitting was followed by a very considerable increase in the amount of pain, and it also brought on bleeding, which has lasted until to-day.

5th September.—40 milliampères for 5 minutes.

There has been less pain during the last two days.

8th September.—60 milliampères for 5 minutes.

To-day the patient does not feel so well ; but the passage of the electrical current did not give rise to as much pain as it has done before.

14th September.—40 milliampères for 5 minutes.

The amount of pain which there has been during this menstrual flow has been the same as usual, but the quantity of hæmorrhage was not greater during the whole time than it often has been in a single day.

16th September.—40 milliampères for 5 minutes.

19th „ 40 „ „ 5 „

21st „ 40 „ „ 5 „

Is now feeling better, and says that her nerves are stronger, and does not now start when a door bangs or such like.

23rd September.—40 milliampères for 5 minutes.

28th „ 120 „ „ 5 „

5th October.—120 „ „ 5 „

Feels so much better that she thinks that she can stop all treatment.

23rd March 1888.—Until a few weeks ago the lady felt very well ; but hearing that we were leaving Edinburgh, she was very anxious to have a few more applications, as she says that she feels that this is the only treatment which has really ever done her any good.

25th March.—120 milliampères for 7 minutes.

26th „ 180 „ „ 7 „

27th „ 145 „ „ 7 „

28th „ 150 „ „ 7 „

30th „ 120 „ „ 7 „

31st „ 115 „ „ 7 „

2nd April.—120 „ „ 7 „

Gaiffe's galvanometer was used to measure the strength

of the current at this time. Owing to necessity, the treatment, consisting of seven applications, was made in eight days; the strength of the current was greater, and the length of time of each application longer, and, just at first, was a little too much for the patient. However, she quickly got over the bad effect, and kept well until January 1889. She came up town in the following April. She was certainly better than she was two years ago, but had a very severe backache when she did much.

19th April.—100 milliampères for 5 minutes.

<i>22nd</i>	„	80	„	„	10	„
<i>24th</i>	„	60	„	„	9	„
<i>26th</i>	„	70	„	„	10	„
<i>29th</i>	„	90	„	„	10	„
<i>1st May.</i>	—	100	„	„	10	„
<i>3rd</i>	„	80	„	„	10	„
<i>6th</i>	„	90	„	„	10	„
<i>15th</i>	„	70	„	„	10	„
<i>17th</i>	„	60	„	„	10	„
<i>20th</i>	„	60	„	„	10	„
<i>22nd</i>	„	60	„	„	10	„

Is feeling very much better.

27th May.—60 milliampères for 12 minutes.

<i>29th</i>	„	60	„	„	9	„
<i>31st</i>	„	60	„	„	10	„
<i>6th June.</i>	—	60	„	„	10	„
<i>7th</i>	„	60	„	„	10	„
<i>10th</i>	„	60	„	„	10	„
<i>12th</i>	„	75	„	„	10	„
<i>14th</i>	„	100	„	„	10	„

Is very much better. The tumour is very decidedly smaller.

CASE XIX.—Married, age 57, was brought by Dr M'Gibbon in August 1887.

Dr M'Gibbon had watched the growth of the tumour in this case for many years, and thirteen years before Dr Keith had seen the lady with him. At that time she was 44 years of age, and had ceased to menstruate ten years before. It is doubtful how long ago it is since the tumour was first noticed, but in 1874 it extended up to the level of the umbilicus. At that date there was little discomfort, and as the tumour was growing very slowly, the patient was advised to wait and see what time would do for her. Year by year the mass steadily increased in size, and as time went on there began to be decided discomfort from its presence, and lately the general health has begun to be seriously affected, and the lady feels that if nothing be done she cannot live long. She is now never free from pain in the right side of the tumour, there is a constant feeling of weight and discomfort, and she has no rest with her bladder, the desire to pass water being present night and day.

For thirteen years the tumour has grown from the level of the umbilicus until its upper part is hidden by the ribs. The pelvis was entirely filled by the mass, and the cervix was represented by a simple depression, into which a sound passed to a depth of $1\frac{3}{4}$ inches. The bladder was situated between the tumour and the anterior vaginal wall. As one part of the tumour was slightly softer than the rest, an aspirator needle was inserted, but no fluid was obtained for microscopical examination. The diagnosis of fibroid growth was thus confirmed, and it was determined to treat the tumour by electricity. In a case such as this, where there was no hæmorrhage, and where the object was to lessen the size of the growth, the negative pole was connected to the internal electrode, passed into the uterine cavity, as, on account of the relation of the bladder, puncture could not be made. This was done in all of the twenty-three applications, the strength of current being not exact.

26th August 1887.—60 milliampères for 5 minutes.

29th " 40 " " 5 "

31st " 40 " " 5 "

There was considerable pain after the first application five days ago, but already the patient feels better in every way, and there is a very decided diminution in the size of the tumour.

2nd September.—40 milliampères for 5 minutes.

5th " 40 " " 5 "

The old lady thinks that she has taken a new lease of life, and said to-day that she felt as if she could not have gone on much longer without relief.

7th September.—40 milliampères for 5 minutes.

9th " 40 " " 5 "

13th " 50 " " 5 "

Until to-day it has been noticed that the tumour became smaller after every application. To-day, however, it is considerably swelled.

15th September.—60 milliampères for 5 minutes.

The swelling of two days ago is gone.

17th September.—60 milliampères for 5 minutes.

She says that she would be quite content with the present improvement ; she does not have much pain, and can have a comfortable night's rest, as the irritability of the bladder is almost quite gone.

20th September.—80 milliampères for 5 minutes.

22nd " 80 " " 5 "

24th " 40 " " 5 "

27th " 60 " " 5 "

Is in the best of spirits to-day, and says that she feels very well indeed.

29th September.—90 milliampères for 5 minutes.

4th October. —80 " " 5 "

6th " 70 " " 5 "

8th " 80 " " 5 "

Feels very well, and the tumour is rapidly decreasing in size.

11th October.— 80 milliampères for 5 minutes.

13th " 120 " " 5 "

15th " 90 " " 5 "

18th " 50 " " 5 "

20th " 80 " " 5 "

In every way the old lady feels better, she does not have any difficulty with her bladder, she has not any pain, and she can walk with ease. The tumour is not half as large as it was in August, two months ago, and is freely movable. In the beginning of April 1888, Dr M'Gibbon informed us that he heard that the tumour was rapidly decreasing in size. Some time afterwards we heard that the old lady had died while away from home. Dr M'Gibbon did not know what was the cause of death, but had heard that there had been a swelling of the tumour some time before, though this had subsided before her last illness.

CASE XX.—Married, age 46, came to the Woman's Dispensary, Edinburgh, on the 29th August 1887.

Patient, who is a widow, has been a martyr to asthma all her life. Twelve years ago she first observed a swelling in the abdomen about the size of an egg. It has been slowly but steadily increasing in size, and although it is by no means very large, it appears to cause more trouble to the organs inside the chest than one would expect in any but an asthmatic or bronchitic subject. She complained also of dysmenorrhœa.

Examination of the abdomen revealed a hard irregular tumour, extending to rather more than one inch above the umbilicus. It was markedly prominent, and was larger than the description would lead one to expect. The tumour was found to fill the pelvis, reaching to nearly the vaginal

outlet. The cervix was shortened, and situated immediately behind the pubes. The cavity measured $5\frac{1}{2}$ inches.

Treatment.—A puncture was made into the centre of the pelvic mass on the 29th of the month, and a current of about 40 milliampères was allowed to flow for two and a half minutes. The application was borne very badly, and could not be continued for the usual length of time. After this first puncture, it was not thought necessary or advisable to repeat this method; so the sound was passed into the cavity and directed backwards as much as possible. After the second application on the 5th September, the patient was confined to the house by an attack of bronchitis, and did not return for treatment until the 21st October. The current was passed on that day, and again on the 24th, 28th, 31st, and then on the 4th, 14th, 18th, and 21st November. The strength varied from about 40 to 80 milliampères. She now felt much better in her general health, and was freer from attacks of asthma than she had been for a long time.

24th November.—70 milliampères for 5 minutes.

28th " 45 " " 5 "

2nd December.—75 " " 5 "

9th " 60 " " 5 "

11th " 85 " " 5 "

14th " 100 " " 5 "

17th " 115 " " 5 "

20th " 125 " " 5 "

23rd " 135 " " 5 "

30th " 170 " " 5 "

3rd February.—100 " " 5 "

2nd March. —100 " " 5 "

5th " 90 " " 5 "

The tumour has been steadily decreasing in size, and is now not more than half as big as it was five months ago.

7th March.—100 milliampères for 5 minutes.

9th " 70 " " 5 "

19th March.—100 milliampères for 5 minutes.

21st " 110 " " 5 "

23rd " 140 " " 5 "

26th " 130 " " 5 "

28th " 120 " " 5 "

30th " 130 " " 5 "

To-day the patient said, "It has made a new creature of me."

2nd April.—120 milliampères for 5 minutes.

4th " 135 " " 5 "

6th " 135 " " 5 "

In all, thirty-four sittings, at each of which the electrical current was passed from the clay pad on the abdomen to the negative electrode in the uterus.

The tumour is very much smaller, probably about one-third of its original size.

In September the tumour was said to be still decreasing in size ; there was less pain at the periods, and these lasted two instead of seven days ; and, strangely enough, there had been no asthma.

CASE XXI.—Unmarried, aged 46. This patient has had a large fibrous tumour for many years—at least twelve—and has often been urgent for its removal by operation. Her request was not acceded to, for her general health was always good, and she has been able to maintain herself by keeping a small lodging-house. Menstruation has entirely ceased for three years. The tumour is hard, and the circumference of the abdomen is 40 inches. She has some difficulty in moving about from its weight, and complains of pain in the back.

She had no faith in the proposed treatment, but submitted to it in the hope that the backache might be relieved.

Three applications of about 40 milliampères were made on the 1st, 6th, and 16th September 1887.

At first the patient thought that she was better, and then came to the conclusion that the back pain was worse. She did not return for treatment. Hearing that she was not well, she was visited at her home, and was found washing down the common stair. Her circumstances prevent her taking rest.

Some months afterwards we heard that she had had a severe flooding, and had to be plugged before the bleeding was checked. This was after an interval of nearly four years' absence of menstruation. There has been no return, and she is now able to look after her house, though the tumour is said to have increased.

CASE XXII.—Married, age 60; was admitted into the Royal Infirmary, Edinburgh, in August 1887.

The patient, a broken-down looking woman, thinks that she first noticed the tumour twelve or fifteen years ago. Menstruation ceased at the age of 51, but recommenced at 59 with fair regularity, and the loss is now great. Six months ago, she says that the tumour did not reach above the navel; now it entirely fills the abdomen, and passes well up underneath the ribs. It is slightly movable. The cavity is large and irregular, and a sound passes many inches into it. The os uteri admits the tip of the finger. On several occasions attempts were made to find out if there were any polypi, and in October a small one was removed. The size and irregular shape of the cavity may have prevented the removal of others.

Gaiffe's galvanometer was not obtained until the treatment was almost finished, so that the figures are not quite correct.

1st September.—40 milliampères for 5 minutes.

<i>3rd</i>	„	40	„	„	5	„
<i>6th</i>	„	40	„	„	5	„
<i>8th</i>	„	40	„	„	5	„

10th September.—35 milliampères for 5 minutes.

The tumour is swollen and painful.

13th September.—40 milliampères for 5 minutes.

17th " 40 " " 5 "

20th " 60 " " 5 "

The tumour has begun to diminish in size.

22nd September.—60 milliampères for 5 minutes.

24th " 85 " " 5 "

27th " 120 " " 5 "

The patient says that she can walk better.

29th September.—75 milliampères for 5 minutes.

1st October. — 95 " " 5 "

4th " 120 " " 5 "

6th " 120 " " 5 "

A small vascular polypus was removed with forceps from the cavity.

11th October. —120 milliampères for 5 minutes.

13th " 120 " " 5 "

15th " 120 " " 5 "

18th " 120 " " 5 "

22nd " 120 " " 5 "

25th " 120 " " 5 "

27th " 120 " " 5 "

29th " 120 " " 5 "

1st November.—120 " " 5 "

Bleeding, which has been almost continuous for the last two months, is now nearly stopped, and the patient says that she feels very well. Till now the sound has been positive, but as the bleeding was checked it was made negative.

3rd November.—120 milliampères for 5 minutes.

5th " 120 " " 5 "

8th " 120 " " 5 "

10th " 120 " " 5 "

15th " 120 " " 5 "

17th " 120 " " 5 "

19th November—120 milliampères for 5 minutes.

22nd " 120 " " 5 "

24th " 120 " " 5 "

26th " 160 " " 5 "

Gaiffe's galvanometer was in use to-day.

29th November.—150 milliampères for 5 minutes.

Since last application there has been a slight bloody discharge, due possibly to a sudden breaking of the current. The sound was made positive.

1st December.—145 milliampères for 5 minutes.

The bleeding has stopped.

3rd December.—180 milliampères for 5 minutes.

6th " 225 " " 5 "

8th " 240 " " 5 "

Goes home to-morrow feeling well, and with the tumour smaller in every direction.

Dr Sinclair wrote on the 11th June 1889—"The tumour enlarged very much after leaving Edinburgh, then diminished again a little, though still large in size, and at present is large and tender to touch. The bleeding has stopped for some time. Mrs — is at present very unwell, and I am not certain whether she will recover or not; there seems to be localized peritonitis, and she also suffers from bronchial symptoms."

CASE XXIII.—Single, age 50, sent by Dr M'Kercher, Dalbeattie, in September 1887.

This lady had been an invalid for a number of years, and as far as she can remember the tumour was first noticed about 20 years ago. The prominent symptom which the new growth has given rise to has been pain. There have not been occasional attacks of pain, but she says that she has not been without it for many years, and she does not remember when she last had a comfortable night's rest. This constant pain has slowly but steadily undermined her

general health, and she has now for the last few years passed the whole of the winter in bed, being able to go about for only four months in the summer. There has, at no time, been any disturbance in the menstrual functions.

In September 1887 the appearance of this lady was lamentable. She looked ill and miserable. She could not walk without support, and had to be assisted into the house.

On examination of the abdomen a large tumour was seen, which on account of the breadth of the pelvic bones was of much greater size than the description would lead one to suppose. The growth was very tender, and it was not possible to examine it except with the greatest gentleness. It was found to be of a very irregular shape, and to be composed of three main portions. The largest part was situated in the left side, and caused that side to bulge considerably, giving somewhat the appearance of a tumour of the kidney. Between this mass and the umbilicus the tumour extended to two inches above the level of the navel, and on the right side it reached as high as that landmark. The uterine cavity measured four inches.

The treatment by electricity lasted for eight weeks, and during that time twenty-three negative applications were made, though unfortunately the exact strength of the current used is not known.

2nd September 1887.—40 milliampères for 5 minutes.

5th " 40 " " 5 "

The patient states to-day that she thinks that there is less pain.

7th September.—40 milliampères for 5 minutes.

9th " 40 " " 5 "

Is decidedly better, and the tumour can now be handled quite freely without causing pain.

12th September.—50 milliampères for 5 minutes.

16th " 50 " " 5 "

There has been a discharge of blood from the uterus for some days.

19th September.—50 milliampères for 5 minutes.

21st " 60 " " 5 "

The improvement continues, and the tumour is rapidly decreasing in size.

23rd September.—80 milliampères for 5 minutes.

26th " 60 " " 7½ "

The patient said to-day that she had been feeling so ill before she left home, that she thinks she would have been dead by now, had she not come to Edinburgh.

28th September.—60 milliampères for 5 minutes.

30th " 60 " " 5 "

3rd October. —55 " " 5 "

5th " 80 " " 5 "

7th " 80 " " 5 "

The mass of tumour on the left side does not now extend outwards beyond a line drawn up from the anterior superior iliac spine, and the growth is at least a third smaller than it was at the beginning of last month. Yesterday the lady walked fully two miles and did not feel fatigued.

10th October.—80 milliampères for 5 minutes.

12th " 80 " " 5 "

14th " 60 " " 5 "

17th " 50 " " 5 "

19th " 55 " " 5 "

The tumour continues to decrease in size.

21st October.—70 milliampères for 5 minutes.

24th " 80 " " 5 "

26th " 80 " " 7½ "

The patient is a new woman, and has the appearance of being in good health and spirits; she walks well, sleeps better, and has improved in every way. That part of the tumour which was situated in the loin is now between the umbilicus and ilium; and the part on the right side extends

to barely a couple of inches above the pelvic brim, instead of being as high as the navel. The tumour is not as large as it was two months ago by fully one-half.

Extract from letter dated 29th June 1889—"I think my general health has much improved. I was able to keep up all last winter. I think that the swellings have not increased. I am still troubled with inaction and catarrh of the bowels, but I am stronger, and no fever now. I don't get so faint and sick as I did."

CASE XXIV.—Single, age 28, was sent by the late Dr Murray Gibson of Portobello to the Woman's Dispensary, Edinburgh, on the 5th of September 1887.

Eight years before she had been delivered of an illegitimate child after a natural labour. From that time there had been more or less constant pain in the back and in the left side, aggravated at the periods, which were not unduly prolonged. A profuse flow of mucous discharge has pulled her down, and latterly she has had to give up her work.

The cavity of the uterus was found to be enlarged to $3\frac{1}{2}$ inches, and on the left side and attached to the upper part of the womb was a hard, tender mass the size of a hen's egg.

The electrical current was passed from the abdomen to the sound in the cavity of the uterus on the 5th, 9th, 12th, 19th, and 30th September, and on the 10th October, the strength varying from about 40 to 80 milliampères. After the first sitting she felt a little better. After the third she went back to her work; and as she felt quite well by the end of September, and owing to some difficulty in getting leave for an hour or two to attend the Dispensary, she gave up coming, and I have not heard of her since. There was simply a very slight thickening at one side of the uterus when last seen.

CASE XXV.—Single, age 57, was sent to Edinburgh by Dr Gemmel of Dunoon in September 1887.

This case was one of those rare instances where a fibroid tumour of the uterus continued to grow and to give rise to increased disturbance for years after the menopause. The growth was first noticed at about the age of 49, and a year afterwards menstruation ceased and has not returned. For four years before the cessation of the menstrual flow there had been a very considerable increase in the amount of discharge every month, so that it is evident that the tumour had been growing for at least eleven years. Of late there has been decided increase in the severity of the pain, and for the last five weeks the lady had been unable to lie down in bed on account of the discomfort and breathlessness. An extract from Dr Gemmel's letter gives a very good idea of the precarious condition in which she was:—"Six years ago she was seized with sudden and severe pain in the left side, and for which she was treated by her Glasgow physician; and on the occasion of my being called, she complained of the same thing, accompanied, however, by some intestinal irritation. She is now back to her frail usual, and if nothing effective can be done, her health and strength will surely fail at no distant date."

The tumour was very large. It caused the right side to bulge greatly, and its upper limit could not be defined, as it extended high up beneath the ribs on both sides.

The treatment consisted of only nineteen applications, and had to be discontinued on account of the illness of the lady's mother. The patient, towards the latter end of the treatment, had to come an hour's journey by rail. Gaiffe's galvanometer was not used. The internal electrode was always made negative.

6th September.— 30 milliampères for 5 minutes.

<i>8th</i>	"	40	"	"	5	"
<i>27th</i>	"	100	"	"	5	"

Owing to the death of a sister, the treatment had to be discontinued for three weeks.

29th September.—105 milliampères for 5 minutes.

1st October. —100 " " 5 "

4th " 120 " " 5 "

Feels slightly more comfortable, and the tumour is a little looser.

6th October.—105 milliampères for 5 minutes.

8th " 120 " " 5 "

11th " 110 " " 5 "

13th " 120 " " 5 "

21st " 80 " " 5 "

The tumour is becoming smaller, and there is now a slight depression between it and the ribs.

24th October.—100 milliampères for 5 minutes.

28th " 100 " " 5 "

Is decidedly better, and can wear her stays for the first time in the last three years.

31st October. —80 milliampères for 5 minutes.

4th November.—80 " " 5 "

7th " 80 " " 5 "

11th " 80 " " 5 "

The tumour continues to decrease in size, and the patient can now lie in bed all night with comfort.

14th November.—80 milliampères for 5 minutes.

17th " 80 " " 5 "

The patient is very sorry that circumstances render it necessary that she should go home, as she is more comfortable, can eat and sleep well, and is able to walk somewhat better than she did.

Dr Gemmel writes on 11th June 1889 :—" I am very glad to report that Miss — has benefited greatly by the electrical treatment she received last year for the large uterine fibroid. The swelling very sensibly diminished, the pain almost disappeared, and the severe attacks from

which she suffered frequently departed, and life now seems to her worth living for. I have seen Miss —— to-day, and she expresses herself as now wonderfully well, and thankful indeed that she placed herself under your care."

CASE XXVI.—Single, age 36, was admitted into the Royal Infirmary in September 1887.

For the last six years menstruation has been very profuse, and the patient has not been able to do any work for two years. Latterly she has been seldom clear of bleeding for more than a week or ten days at a time, and during the interval there has been a great leucorrhœal discharge. It is not uncommon for the bleeding to continue for three or four weeks. Two years ago the tumour was first noticed, and some time afterwards the patient was admitted into Charing Cross Hospital under the care of Dr Watt Black. Here she remained for several months, and for a time was decidedly better than she had been. For the last year she has been seldom out of bed for more than a few hours at a time.

On admission into the Infirmary, the woman was found to be very weak, and able to do little. She had difficulty in getting upstairs, and a very short walk was all that she could manage. The tumour extended up under the ribs on the right side, and to fully 2 inches above the umbilicus on the left. A sound passed easily to a depth of 6 inches, and then, after some manipulation, nearly 2 inches farther. Gaiffe's galvanometer was not used until the twenty-fifth sitting.

6th September.—40 milliampères for 5 minutes.

The passage of the sound started a pretty brisk hæmorrhage.

8th September.—40 milliampères for 5 minutes.

There was not so much bleeding to-day when the sound was passed.

13th September.—40 milliampères for 5 minutes.

15th " 40 " " 5 "

20th " 80 " " 5 "

The period has been going on more or less for the last ten days. There was less discharge than usual.

22nd September.—80 milliampères for 5 minutes.

24th " 90 " " 5 "

27th " 80 " " 5 "

29th " 70 " " 5 "

1st October. —95 " " 5 "

4th " 90 " " 5 "

The patient is stronger, and can walk better ; she managed half a mile to-day.

6th October.—100 milliampères for 5 minutes.

15th " 100 " " 5 "

There has been again an abatement in the quantity of discharge, and, besides, there was an interval of eighteen days.

18th October. —100 milliampères for 5 minutes.

20th " 120 " " 5 "

25th " 120 " " 5 "

5th November.— 80 " " 5 "

There has been some hæmorrhage for the last three weeks, but the total loss has not been great

8th November.—120 milliampères for 5 minutes.

10th " 120 " " 5 "

15th " 100 " " 5 "

17th " 100 " " 5 "

19th " 100 " " 5 "

22nd " 100 " " 8 "

Was able to walk fully a mile.

24th November.—100 milliampères for 8 minutes.

3rd December. —150 " " 5 "

Gaiffe's galvanometer was used to-day. The period is over ; it was bad for two days, and then slight for four.

Less discharge than for at least a year, and there was an interval of four weeks. The general health and appearance are much improved.

6th December.—275 milliampères for 8 minutes.

<i>8th</i>	"	285	"	"	7	"
<i>10th</i>	"	190	"	"	7	"
<i>13th</i>	"	300	"	"	10	"
<i>15th</i>	"	210	"	"	10	"
<i>17th</i>	"	285	"	"	5	"
<i>20th</i>	"	210	"	"	10	"
<i>28th</i>	"	200	"	"	10	"

A moderately easy period has been passed, and the patient feels well and strong.

30th December. —200 milliampères for 10 minutes.

<i>5th January 1888.</i>	175	"	"	10	"
<i>7th</i>	"	175	"	"	10
<i>12th</i>	"	290	"	"	8
<i>19th</i>	"	260	"	"	8

The period has lasted five days, and the loss was not very great.

21st January.—235 milliampères for 10 minutes.

24 th	"	250	"	"	10	"
26 th	"	210	"	"	10	"
28 th	"	223	"	"	10	"
31 st	"	215	"	"	10	"
2 nd February.	—	175	"	"	10	"
4 th	"	180	"	"	10	"
7 th	"	240	"	"	10	"
9 th	"	215	"	"	10	"
11 th	"	210	"	"	10	"
21 st	"	195	"	"	10	"

There was less flow than for fully two years, and there was not any diminution in colour noticeable.

23rd February.—200 milliampères for 10 minutes.

<i>28th</i>	"	175	"	"	10	"
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The sound was made positive in forty-six out of the whole number of applications.

The tumour is very much smaller, and no one would recognise the patient of five months ago.

It was suspected at one time that there was a polypus inside the cavity, and the cervix was dilated; but, on account of the very irregular shape of the uterine cavity, nothing could be felt, and forceps could not be passed up to the fundus.

30th August.—Heard that the woman was very well, that the periods recur at intervals of five weeks, and that the quantity of blood is not great, and that it continues to diminish in amount.

Extract from letter, dated 13th March 1889:—"I was so well then (during a sister's illness); but this last two months I have been so ill with pain and a relaxed state of the bowels like slimy diarrhoea; also a discharge of a greenish colour; some call it whites. The monthly periods are not so bad—two days pretty bad, and two days not. I can manage with only keeping in bed one day now, and it never lasts longer than five days. The tumour keeps below the right ribs, as it was when I left Edinburgh; but I am sorry it grows higher in front towards the breast bone. I think myself that the treatment is still going on, and that the periods will get better as time goes on. The periods are also now regular once a month, which they were not before the treatment. Came any time before."

CASE XXVII.—Single, age 35, was brought by Dr Wm. Bruce in September 1887.

For nearly two years this patient's general health had been becoming rapidly deteriorated by excessive losses of blood at the monthly periods. Instead of lasting three days, as was natural to her, the flow continued for ten or twelve days. About the beginning of the year it was

noticed that there was a growth in the abdomen, which was diagnosed by Dr Bruce to be a fibroid tumour of the uterus, and confirmed later on by Dr Keith. Removal of the ovaries was recommended. In June the menstrual flow ceased; but, instead of improvement, there was even a more rapid loss of health and strength, as this was accompanied by great irritability of the stomach. In July and August the lady was taken to the seaside, and improved slightly in strength; for, instead of being unable to walk at all, she could manage 100 yards or so with difficulty.

In September she looked very ill and miserable; she was thin, the face was of a greenish shade, and the lips and eyelids were not even tinged with colour. The dyspeptic symptoms gave great trouble; medicines and care with diet having no result.

On examination it was found that the tumour reached upwards fully as high as the umbilicus. It filled the whole of the pelvis extending to within an inch of the outside; there was almost no vagina, and the cervix was drawn up in front out of reach of the finger, but could be felt through the thin abdominal wall. Two large arteries were felt running across from one side of the pelvis to the other.

As it was not possible to reach the cervix, the point of a needle had to be thrust into the tumour on every one of the eighteen applications which were made. The needle was connected to the negative pole of the battery. It is unfortunate that the galvanometer, which was used, was not very correct, and the figures must be taken as being only somewhat nearly correct.

11th September.—40 milliampères for 5 minutes.

13th " 40 " " 5 "

15th " 60 " " 5 "

The tumour is to-day certainly smaller.

17th September.—50 milliampères for 5 minutes.

There is a decided diminution in size even since the day before yesterday.

20th September.—80 milliampères for 5 minutes.

22nd " 45 " " 5 "

To-day the patient feels better ; can walk more easily, and has not been so sick. The tumour continues to diminish.

24th September.—40 milliampères for 5 minutes.

It was observed to-day that pulsation had ceased in the two arteries, which have been described as running across the upper part of the vagina. No puncture was ever made within $\frac{3}{4}$ of an inch of these vessels.

27th September.—70 milliampères for 5 minutes.

29th " 70 " " 5 "

The patient begins to have a much better colour.

1st October.—105 milliampères for 5 minutes.

4th " 90 " " 5 "

6th " 80 " " 5 "

8th " 80 " " 5 "

Yesterday the patient sailed round the Channel Fleet, which was lying at Queensferry. For at least a year, it would never have occurred either to her or to her friends that she could attempt such an excursion, far less that she could enjoy it.

11th October.—100 milliampères for 5 minutes.

13th " 120 " " 5 "

15th " 90 " " 5 "

18th " 90 " " 5 "

20th " 100 " " 5 "

The patient now feels stronger, and walked a couple of miles yesterday. There is a decided difference in the size of the tumour, and there is now room to pass the finger between the part of the growth in the pelvis and the symphysis pubis, and so reach the cervix. The tumour has lost about one-quarter of its bulk.

In the end of January the lady called to report progress.

She had had two natural periods, and was steadily gaining ground in every way ; and with the advent of the menstrual flow, all dyspeptic symptoms, which had given rise to so much disturbance, vanished as if by magic. She said that the tumour continued to decrease, and it did not show through her clothes, as it had formerly done. She could "do anything."

In September she was in perfect health.

19th January 1889.—It is now fifteen months since the treatment was concluded, and for a year she said that she had been absolutely perfectly well. She certainly looked the picture of health ; the lips were of a good colour ; the body was evidently well nourished ; there was no dyspepsia ; and the periods were said to last three days, and to recur every four weeks. She thinks that the tumour very slowly continues to decrease.

17th April.—In a letter from Dr Bruce, he speaks of the patient in the following terms :—" I saw Miss — the other evening, and she is keeping remarkably well—a proof, which cannot be controverted, of the success of the new treatment."

CASE XXVIII.—Single, age 41, came to Edinburgh in September 1887. She was sent by Dr Nivison of Castle-Douglas.

The tumour was first noticed sixteen months ago, and of late has been growing rapidly. There is not any menorrhagia nor pain, but the lady complains of constant discomfort and a feeling of lassitude.

The tumour extends up to the level of the umbilicus on the left side, and scarcely so high on the right. The cervix is far back, and the introduction of the sound is difficult.

13th September.—40 milliampères for 5 minutes.

15th " 40 " " 5 "

17th " 40 " " 5 "

20th September.—40 milliampères for 5 minutes.

22nd " 40 " " 5 "

The tumour is one inch below the umbilicus, and the patient is to go home and return later on.

19th November.—40 milliampères for 5 minutes.

The tumour is 2 inches below the umbilicus.

22nd November.—40 milliampères for 5 minutes.

24th " 40 " " 5 "

26th " 60 " " 5 "

29th " 75 " " 5 "

1st December.—125 " " 5 "

3rd " 95 " " 5 "

6th " 100 " " 5 "

15th " 100 " " 5 "

17th " 100 " " 5 "

20th " 115 " " 5 "

22nd " 100 " " 5 "

The tumour is the same size as it was last month, but the old feeling of tiredness is gone. The sound was made negative on every occasion.

10th June 1889.—"I am sorry to say that the tumour is increasing; indeed, I think it is much larger now than when I was under treatment in Edinburgh. The flow is also increasing; last time it continued for a fortnight; but I seldom have much pain, and my general health is pretty good."

We know now that in this case the treatment was not continued nearly long enough. This patient will return for a proper treatment later on.

CASE XXIX.—Married, age 31; came from Kansas, U.S.A., with the intention of having the ovaries removed or hysterectomy performed.

For the last eight years the patient says that she has not known what it was to feel well. There has been constant

pain in the sides and back, and the periods last from ten to fourteen days, and the amount of blood lost is said to be great and to be steadily increasing. For eight years she has been constantly under treatment, and in March 1887 a fibroid tumour was removed after dilatation of the cervix. In April, the cavity of the womb was curetted, and this operation was followed by flooding. No treatment has given even temporary relief.

The patient is a tall, thin woman, with absolutely colourless face. The uterus is about twice its natural size, and the cavity measures $3\frac{1}{2}$ inches.

The lady was very anxious to have an operation, as she had no faith in any less radical mode of treatment after her eight years' experience, and it was with difficulty that she was persuaded against it.

As the patient had come four thousand miles, and as she was never able to bear a strong current, forty-three applications were made, in half of which the exact strength of the current used is somewhat doubtful. The sound was always made positive.

14th September 1887.—40 milliampères for 5 minutes.

16th „ 40 „ „ 5 „

17th „ 40 „ „ 5 „

The patient was exhausted after the first application, but now feels better.

19th September.—60 milliampères for 5 minutes.

20th „ 40 „ „ 5 „

21st „ 40 „ „ 5 „

Does not feel at all better, and is in very low spirits.

23rd September.— 40 milliampères for 5 minutes.

4th October. —120 „ „ 5 „

The menstrual flow is over. It continued for nine days, and although the time was shorter the quantity of discharge was greater than it has been since April.

8th October.—60 milliampères for 5 minutes.

11th October.—80 milliampères for 5 minutes.

13th " 80 " " 5 "

15th " 100 " " 5 "

Thinks that she is perhaps a little better.

18th October.—80 milliampères for 5 minutes.

20th " 100 " " 5 "

31st " 100 " " 5 "

A second menstrual period is passed ; in no respect any better than the last.

2nd November.—100 milliampères for 5 minutes.

4th " 120 " " 5 "

7th " 100 " " 5 "

9th " 120 " " 5 "

11th " 120 " " 5 "

14th " 120 " " 5 "

16th " 100 " " 5 "

There has been a decided improvement in the last few days ; and the pain in the back has been more bearable.

28th November.—100 milliampères for 5 minutes. The period is again over ; it lasted eight days, and for the first half of the time was slight ; now she feels depressed, and has had increased pain. Gaiffe's galvanometer was used.

30th November.—90 milliampères for 5 minutes.

2nd December.—100 " " 5 "

5th " 100 " " 5 "

7th " 100 " " 5 "

9th " 110 " " 5 "

12th " 160 " " 5 "

14th " 135 " " 5 "

23rd " 75 " " 5 "

There has been decidedly less flow.

26th December.—75 milliampères for 5 minutes.

28th " 60 " " 5 "

30th " 50 " " 5 "

2nd Jan. 1888.—80 " " 5 "

4th January 1888.—60 milliampères for 5 minutes.

6th " 50 " " 5 "

9th " 65 " " 5 "

11th " 65 " " 5 "

22nd February.—100 " " 5 "

Has been in the country since the last sitting, and has gained 2 pounds in weight. As regards the period there is nothing to record.

24th February.—100 milliampères for 5 minutes.

27th " 100 " " 5 "

29th " 100 " " 5 "

17th April.—"You will be pleased to hear I have got over a period in eight days, and not much any day of the eight. It also was a week longer than usual of coming on. It is the very best I have had for several years."

18th June.—"I have been at home five weeks, and I am very glad to be able to say I am still keeping better. I have passed the third period since I stopped the electricity; each one only lasted eight days, a great improvement on what has been these last eight years. I still think it lasts a little too long, but trust I may yet derive a little more benefit from the treatment. The two last times I did not have much chance to improve: first we had a very stormy passage out (fourteen days crossing), then it has been intensely warm ever since we arrived. Mr — and all my friends are well pleased with the progress I have made. All tell me I am looking much better now than I have done for a number of years."

CASE XXX.—Married, age 32, was sent to Edinburgh, and came to the Woman's Dispensary on the 19th September 1887.

Two years ago, an attack of pain drew attention to a tumour in the abdomen. This mass is slowly increasing in size, and the patient suffers from inconvenience from

some pain, and from frequent calls to pass water. Although the patient appeared to be in very good health, and, as far as could be made out, did not suffer very greatly, yet something had to be attempted, as it was not possible, or at least not likely, that the tumour would not give trouble in the next twenty years.

On examination, a very hard tumour was felt, extending upwards to 1 inch above the umbilicus; to the right, to within $1\frac{1}{2}$ inch of the right iliac spine; and on the left, to within 1 inch of the iliac spine on the same side. The pelvis was tightly packed by the tumour, and the cervix was drawn up behind the pubes. The sound passed 5 inches forwards in front of the tumour growth.

19th September.—40 milliampères for 5 minutes.

21st " 80 " " 5 "

23rd " 40 " " 5 "

The tumour is smaller, and the cervix is lower down.

26th September.—40 milliampères for 5 minutes.

28th " 40 " " 5 "

30th " 60 " " 5 "

3rd October. —40 " " 5 "

The tumour is fully 2 inches below the umbilicus.

5th October.—40 milliampères for 5 minutes.

7th " 40 " " 5 "

12th " 40 " " 5 "

14th " 45 " " 5 "

17th " 40 " " 5 "

19th " 40 " " 5 "

Says that she is feeling much better.

21st October. — 50 milliampères for 5 minutes.

24th " 120 " " 5 "

26th " 60 " " 5 "

28th " 100 " " 5 "

31st " 120 " " 5 "

4th November.—120 " " 5 "

7th November.—100 milliampères for 5 minutes.

9th	„	100	„	„	5	„
11th	„	100	„	„	5	„
14th	„	100	„	„	5	„
16th	„	80	„	„	5	„
18th	„	90	„	„	5	„
21st	„	95	„	„	5	„
23rd	„	95	„	„	5	„
25th	„	120	„	„	5	„

Gaiffe's galvanometer was used to-day.

28th November.—115 milliampères for 5 minutes.

30th	„	150	„	„	5	„
2nd December.	—	150	„	„	5	„

The tumour was punctured, as the cavity lay so much in front of the mass of tumour, and the needle was made negative. The tumour is not within 3 inches of the umbilicus.

After going home the patient wrote to say that she had swelled considerably, but had “dissolved again in the course of a few days.” She promised to write again, but did not do so, and a letter of inquiry was returned marked “not known.”

CASE XXXI.—Married, age 44, was sent for to come to the Woman's Dispensary, Edinburgh, in September 1887.

This patient's history had, indeed, been a sad one. She said that she had been to every doctor in Edinburgh, and that no one had been able to do her any good. Although she had not been well for fourteen years, or, as her husband states, twenty-one years, she was not really very ill until she caught cold about seven years ago. At that time she was in the early months of pregnancy. She was in bed for some weeks, and aborted. Since then her business has apparently consisted in trying to get well—at least during those times that she was not in bed. She had been an in-

patient under the care of Professor Simpson and the late Dr Angus Macdonald ; and some two years ago, she was in the Special Ward for the treatment of ovarian disease. All of the usual remedies had been tried over and over again, and her recuperative power appeared to be so slight that operation could not be advised, more especially, as it seemed to be probable that it would be difficult, or perhaps impossible, to remove the ovaries. After three months' experience in the use of Dr Apostoli's method, and being confident that the general tonic effect of the treatment would more than counterbalance any disturbance the passage of a sound might cause, the woman was sent for, and came for treatment on the first day she was able to be out of bed, three weeks after she got the message.

Patient is a thin, dark, sallow woman. On examination of the abdomen, an irregular tumour was felt lying against the abdominal wall, and extending to 3 inches above the pubes. In the pelvis, the cervix was found to be situated far back, and a part of the growth pressed on the bladder. The sound passed to a depth of $4\frac{1}{4}$ inches. The patient states that she has been in constant pain for the last seven years, and for fifteen years there has been a steadily increasing quantity of blood lost at the periods. Before, and for the first few days of the menstrual flow, pain is very much aggravated, and prevents her from sleeping. Menstruation now lasts for fourteen days, and recurs after an interval of one week ; formerly, its duration was seven days, with a twenty-one days' interval. This was a very satisfactory case for the treatment, as there appeared to be a very general consensus of opinion that any operation would be attended by great danger to life.

21st September.—40 milliampères for 5 minutes.

23rd „ 50 „ „ 5 „

Says that she feels stronger already.

3rd October.—40 milliampères for 5 minutes.

The period came on ten days ago ; the loss of blood has been greater than usual, and the patient feels very ill.

5th October.—40 milliampères for 5 minutes.

The bleeding stopped after the last application.

12th October.—40 milliampères for 5 minutes.

14th " 70 " " 5 "

17th " 70 " " 5 "

24th " 80 " " 5 "

A second period since the treatment was begun is over. It lasted seven days, was not very severe, and there was an interval of two weeks instead of the usual seven days.

28th October.—120 milliampères for 5 minutes.

There has been some bleeding for two days.

31st October. — 120 milliampères for 5 minutes.

4th November.—120 " " 5 "

Feels better and stronger, and looks more cheerful.

18th November.—100 milliampères for 5 minutes.

Has been flowing for five days. Feels much better, is stronger, and can walk better, and has little pain.

25th November.—135 milliampères for 5 minutes.

To-day was the first time that the strength or current recorded is certainly correct. Has been "ill" again for five days, but is feeling wonderfully well.

28th November.—155 milliampères for 5 minutes.

5th December.—135 " " 5 "

There has been rather more pain.

9th December.—135 milliampères for 5 minutes.

The pain is relieved ; there has been some hæmorrhage for three days.

12th December.—100 milliampères for 5 minutes.

6th Jan 1888.—160 " " 5 "

Feels well, although there has been as great a loss of blood as she has ever had. The general health is undoubtedly much improved.

8th January.—160 milliampères for 5 minutes.

23rd January.—145 milliampères for 5 minutes.

30th " 110 " " 5 "

Flow six days. Does not feel strong.

3rd February.—130 milliampères for 5 minutes.

Is feeling better again. The weakness complained of at last visit was probably due to some little stomach derangement.

10th February.—135 milliampères for 5 minutes.

13th " 140 " " 5 "

27th " 275 " " 5 "

The period on this occasion lasted nine days ; there was much less flow and much less pain.

29th February.—220 milliampères for 5 minutes.

2nd March. —250 " " 5 "

5th " 230 " " 5 "

The patient says that she feels quite well to-day, and has not done so for ten years.

9th March.—245 milliampères for 5 minutes.

19th " 270 " " 5 "

There has been less loss during the menstrual period, which is just passed, than there has been for a long time. There was, however, more of the old pain for the first two days.

21st March.—220 milliampères for 5 minutes.

23rd " 225 " " 5 "

26th " 200 " " 5 "

28th " 210 " " 5 "

30th " 235 " " 5 "

31st " 210 " " 5 "

2nd April.—210 " " 5 "

The internal electrode was, in every one of the thirty-seven applications, attached to the positive pole of the battery.

Progress has been uninterrupted ; and to-day the patient broke down completely. She has experienced what it was

to be well, and was in terror lest the result of the treatment should not be permanent, and that there would be no one, as far as she knew, who would be able to give her relief. The following extract from a letter, dated 5th February 1889, will show that her alarm was groundless, at least in the meantime:—"My period now comes once a month, and lasts a week. I have pain a day or two before, and rather worse the first day of the period, but nothing to what it was before the electricity. My general health had been bad since the pain began. I have not felt so well for twelve years. After the treatment was stopped I gradually got stronger, and have never been laid up a day since you left Edinburgh. I am able to walk without pain or discomfort of any kind, and can't feel grateful enough to you for all your kindness."

CASE XXXII.—Married, age 29, came to the Woman's Dispensary, Edinburgh, in July 1887. ✓

The patient gave the following history:—She had been married five years, had never been pregnant, and had enjoyed good health until three years ago. At that time she was in bed for some weeks with "inflammation." For this she was treated in the country with hot-water injections and glycerine pads. Two years afterwards she moved into town, and then consulted one of the younger medical men in Edinburgh. Treatment by glycerine pads was continued for nine months, the patient attending twice a week. At the end of that time she was told that she was incurable without an operation, and as one result of the operation proposed would be that she would have no children, it is to be concluded that removal of the ovaries was alluded to. She then came to the Dispensary, complaining of constant severe pain in the left side, and of general debility. Menstruation regular, and as it had always been as regards quantity. Pain much worse at that time.

On examination, the cervix uteri was felt to be pointing forwards, and the fundus to be in the hollow of the sacrum. The retroversion was evidently caused by the weight of a fibroid tumour, the size of a billiard ball, which was attached to the posterior part of the fundus. The uterine cavity measured $3\frac{1}{4}$ inches, and there was little mobility due to surrounding swelling. As efforts to replace the organ were of no avail, treatment by electricity was begun on the 21st September, the negative electrode being placed inside the uterus, and a current of about 40 milliampères allowed to flow for 5 minutes. There was less pain after the first application; she felt able to do her housework after the second on the 23rd; the period was commencing on the 28th inst. when she had the fourth. The fifth was on the 10th October, after an extremely easy menstrual flow. The ninth sitting was on the 4th November, immediately after a second period, which had been somewhat painful. The tenth application was made on the 11th, the direction of the current being reversed in this and the subsequent applications.

28th November.—125 milliampères for 5 minutes.

The period is just over; scarcely any pain, and feels very well.

5th December.—100 milliampères for 5 minutes.

12th „ 85 „ „ 5 „

6th Jan. 1888.—130 „ „ 5 „

The uterus can now be turned forwards with the sound.

20th January.—130 milliampères for 5 minutes.

Constant desire to pass water for the last four days, and the period was not got over so easily.

23rd January.—115 milliampères for 5 minutes.

The bladder irritability is better to-day.

27th January.—95 milliampères for 5 minutes.

30th „ 100 „ „ 5 „

20th February.—135 „ „ 5 „

19th March.—130 milliampères for 5 minutes.

The easiest period she has had for more than three years ; rather more flow, and more natural (*sic*).

21st March.—170 milliampères for 5 minutes.

23rd " 180 " " 5 "

26th " 160 " " 5 "

28th " 170 " " 5 "

30th " 175 " " 5 "

4th April.—150 " " 5 "

6th " 150 " " 5 "

The period has been exactly as it used to be years ago. There were twenty-seven sittings—nine negative and eighteen positive—with the local result as follows :—Loss of tenderness, loss of fixation, marked reduction in the size of the tumour and also of the uterus generally.

In September the patient was very well ; there was simply a little pain at the time of the flow every month.

19th January 1889.—In perfect health ; no pain, and says that she feels "awful well," and there is no doubt but that she looked it.

CASE XXXIII.—Single, age 40, was sent by Dr Joseph Bell in September 1887.

As this lady had to earn her own living, and as her occupation required that she should stand most of the day, it was necessary that she should be strong and enjoy good health.

The tumour was first noticed sixteen months ago. At that time she was feeling weak and unfit for work, and was losing too much blood every month. The periods, which formerly lasted but three days, now continue for from seven to ten ; and instead of coming every three weeks, appear at irregular intervals. A long rest in the country has greatly improved the general health. At present she feels full and uncomfortable, and cannot go upstairs without a rest. She

fears that, as there has not been any improvement in the menstrual function, she will soon be unable to work.

The tumour was found to extend up to the umbilicus; the cervix was far back, and the sound could be passed with considerable difficulty to a depth of 3 inches.

Twenty-four negative applications were made, the great majority in the evening, as the patient was employed during the daytime.

At no time was the patient able to stand a strong current, though it was only towards the end of the treatment that it could be correctly measured.

24th September 1887.—40 milliampères for 5 minutes.

27th " 80 " " 5 "

29th " 120 " " 5 "

There is already a decided difference in the size of the tumour.

1st October.—100 milliampères for 5 minutes.

4th " 85 " " 5 "

Every day the tumour is noticed to be smaller, and is now fully 1 inch below the umbilicus.

6th October.—80 milliampères for 5 minutes.

Patient says that she feels smaller, and that her jacket is looser. She can now go upstairs without a rest, and without panting for breath.

8th October.—75 milliampères for 5 minutes.

Feels fuller to-day, and the tumour is within half an inch of the umbilicus.

10th October.—80 milliampères for 5 minutes.

The tumour is smaller again to-day.

18th October.—60 milliampères for 5 minutes.

Has had a remarkably easy period; very little pain, and less discharge.

20th October.—60 milliampères for 5 minutes.

22nd " 50 " " 5 "

There has been a good deal of pain for a day or two.

25th October.—55 milliampères for 5 minutes.

The pain has gone.

29th October.—60 milliampères for 5 minutes.

3rd November.—40 " " 5 "

6th " 35 " " 5 "

15th " 40 " " 5 "

There has been more loss than usual, but unaccompanied by pain, and now feels well and not so "puffy."

19th November.—40 milliampères for 5 minutes.

22nd " 40 " " 5 "

29th " 50 " " 5 "

13th December.—55 " " 5 "

The period is over, and again there has been more discharge than usual. Gaiffe's galvanometer was used for the first time during the last application.

15th December.—65 milliampères for 5 minutes.

10th Jan. 1888.—50 " " 5 "

14th " 50 " " 5 "

21st " 65 " " 8 "

September.—Has not been an hour off work since January. The flow now lasts four days.

19th January 1889.—The periods last four or five days, and recur at regular intervals of three weeks. She says that she has nothing to complain of, and is "perfectly well, cannot tell how well." She told me that a short time ago she had met Dr Bell, who said to her, "If you are half as well as you look, you would be a credit to any one." Sleeps splendidly now.

CASE XXXIV.—Married, age 44, was sent to the Woman's Dispensary, for the electrical treatment, by Dr M'Gibbon on the 28th September 1887, as he was afraid that she would not be able to survive the frequent and great losses of blood if something were not done.

The patient had been quite well until about three years

ago, when she began to notice that her periods were becoming unduly prolonged; that the quantity of blood lost was greater, and the interval between the flow was shorter. All those symptoms rapidly became worse, and, in addition, there was a profuse discharge of whites, so bad that she was never dry. She became anæmic, breathless, unable to walk, unable almost to do anything, in spite of ergot and careful attention to diet.

When first seen she looked very ill; lips and tongue without colour, face greenish-yellow, breathless, and exhausted; legs much swollen with œdema, and she had not been able to walk to the Dispensary.

Examination of the abdomen revealed the fundus of the uterus 2 inches above the pubes. In the pelvis the cervix was felt to be low down, deeply lacerated, with everted lips, and attached to the inner surface of the anterior lip was the tip of the tumour, which appeared to be incorporated with the anterior wall of the uterus. The cavity measured $3\frac{1}{2}$ inches.

The periods now last twelve days, and recur regularly every month.

The treatment was begun on the 28th September, and repeated on the 30th—the strength of the current being about 40 and 50 milliamperes, passed for 4 minutes. She felt better; there was less white discharge, and she was able to walk to the Dispensary, as it was downhill all the way from her house.

3rd October.—40 milliamperes for 4 minutes.

<i>5th</i>	„	60	„	„	4	„
<i>7th</i>	„	40	„	„	5	„
<i>10th</i>	„	50	„	„	5	„
<i>12th</i>	„	40	„	„	5	„
<i>14th</i>	„	80	„	„	5	„
<i>17th</i>	„	85	„	„	5	„
<i>19th</i>	„	50	„	„	5	„
<i>26th</i>	„	50	„	„	5	„

She is immensely improved, can walk home, and does not look such a ghastly object as she did a month ago. The first period since the treatment was begun is just over. Instead of twelve, it lasted four days ; and on three of those four, the discharge was comparatively slight. The leucorrhœa is stopped. The legs do not swell so much.

28th October. — 85 milliampères for 5 minutes.

<i>31st</i>	„	120	„	„	5	„
<i>2nd November.</i>	—	120	„	„	5	„
<i>4th</i>	„	120	„	„	5	„
<i>7th</i>	„	100	„	„	5	„
<i>9th</i>	„	100	„	„	5	„
<i>11th</i>	„	100	„	„	5	„
<i>14th</i>	„	100	„	„	5	„
<i>16th</i>	„	100	„	„	5	„
<i>18th</i>	„	100	„	„	5	„
<i>25th</i>	„	175	„	„	5	„

To-day was the first day on which the measurement was correct, the previous numbers are approximate only, though they are probably not very far wrong.

The period is again over ; it came on after a month's interval, and lasted five days. The amount of blood lost was rather more than on the last occasion. The growth, which had been seen as an excrescence on the inner surface of the anterior lip of the cervix, does not now project.

28th November.—155 milliampères for 5 minutes.

<i>30th</i>	„	175	„	„	5	„
<i>2nd December.</i>	—	155	„	„	5	„
<i>5th</i>	„	145	„	„	5	„
<i>12th</i>	„	110	„	„	5	„
<i>4th Jan. 1888.</i>	—	200	„	„	5	„

The period has again lasted five days, and in spite of there being more loss, the patient does not feel so pulled down and debilitated by it. There has been no return of

the white discharge. The legs are still somewhat swelled at night. In the morning there is scarcely any œdema.

The last application was made on the 6th January, and for some reason or other a current of only 80 milliamperes could be borne. Twenty-nine positive applications in all.

On the 4th April she came to say that she was steadily improving in health, though there was more blood lost every month than had been her habit before the illness. There was, however, not any leucorrhœa.

In September she was very well indeed, and was able to attend to her shop all day. She was not breathless, looked well, and the periods lasted eight days, with little quantity.

In January 1889, I was unable to find her, but was told by another old patient, who had seen her two or three weeks before, that she was quite well in every respect.

Having heard in May 1889 that this patient had undergone an operation, she was communicated with, and wrote to say that a tumour had been removed from the vagina, and that there had been persistent hæmorrhage after the operation, necessitating "plugging" seven times. She goes on to say that she was beginning to lose as much blood as she did before the electrical treatment, and ends her letter thus:—"I always say, if it had not been for the battery, I would never have lived."

This result is what experience has shown Dr Apostoli's treatment does for submucous tumour: it reduces the size, and makes them more or less pediculated. When treated by electricity, the tumour was part and parcel of the anterior wall of the uterus.

The tendency which the electrical treatment appears to have in causing, or at least in hastening, the expulsion of fibroid tumour situated near to the uterine cavity has been specially remarked on by Dr La Torre of Rome.

CASE XXXV.—Married, age 49, was sent by Dr Maxwell Ross, and was treated at the Woman's Dispensary, Edinburgh.

Her history was that she had had constant pain in the back for five years, and that this had been accompanied by very profuse loss every month, the periods lasting usually fourteen days.

On examination, the top of the uterus was felt 2 inches above the pubes. In the pelvis, the cervix was found to be large, lacerated, and situated low down. The sound passed to a depth of $3\frac{3}{4}$ inches.

This was evidently a case where the internal electrode would have to be attached to the positive pole of the battery, and this was done in every one of the twenty-eight applications which were made.

28th September.—40 milliampères for 3 minutes.

30th " 40 " " 5 "

5th October. —40 " " 4 "

7th " 40 " " 5 "

17th " 70 " " 5 "

The period has been going on for a week, and an attempt was made to stop it with the current. This it did most effectually.

21st October. — 55 milliampères for 5 minutes.

24th " 80 " " 5 "

28th " 80 " " 5 "

31st " 60 " " 5 "

4th November. — 60 " " 5 "

11th " 60 " " 5 "

14th " 80 " " 5 "

21st " 80 " " 5 "

2nd December. —110 " " 5 "

The strength of the current was measured to-day for the first time with accuracy. The period, after lasting twelve days, is over, and the total quantity is not more than was often lost in a single day.

5th December.—115 milliampères for 5 minutes.

9th „ 100 „ „ 5 „

12th „ 120 „ „ 5 „

19th „ 100 „ „ 5 „

4th Jan. 1888.—120 „ „ 5 „

8th „ 180 „ „ 5 „

29th „ 115 „ „ 5 „

Has just got over a very bad period, which has lasted for two weeks. There had been nothing seen for the previous six weeks.

2nd March.—220 milliampères for 5 minutes.

7th „ 180 „ „ 5 „

9th „ 160 „ „ 5 „

The patient has been steadily improving since the end of last month, and says that she feels better than she has done since the month of November.

14th March.—175 milliampères for 5 minutes.

21st „ 180 „ „ 5 „

There has been a very easy period.

26th March.—150 milliampères for 5 minutes.

30th „ 135 „ „ 5 „

What has been the exact result in this case will be shown by an extract from a letter written by Dr Ross, who was good enough to see the patient and report, on the 5th February 1889:—“I called on Mrs — yesterday. She informed me that for a short time after the Apostoli treatment stopped she felt better generally. Her system was quieter, and she was less nervous. The hæmorrhage is now much less than it was, but still comes at irregular intervals. In September last, she says she was seized with a shivering and a profuse discharge of blood, and slime came from the bowel. She also suffered from severe backache, and when she uses the vaginal douche, which she does frequently as it gives her relief, a clear but thick discharge comes away per anum ‘from the back,’ she says. She added

that she felt at times that she would like to have the battery treatment again, but is hopeful, as the hæmorrhage is diminishing, that she may now be recovering from her womb trouble. I did not examine her, and, in fact, up till yesterday had not seen her since you left Edinburgh."

CASE XXXVI.—Single, age 37, was sent into Edinburgh by Dr Bannerman of Hawick, and was treated at the Woman's Dispensary.

The patient did not know that there was anything the matter with her until August 1886. A few days before the period she was unable to empty her bladder, and the water had to be drawn off with a catheter. This has had to be repeated every month. The woman is a worker in a mill, and for a year had had to give up work for about one week out of every four. With the exception of this trouble with the water, the tumour, which was only discovered when the catheter was first passed, has given rise to little disturbance.

On examination of the abdomen, a hard, somewhat nodulated tumour was felt extending up to the umbilicus. The pelvis was filled by the mass to within 2 inches of the vaginal outlet, and the os was not to be felt, the vagina stretching away in front.

Treatment.—As the os uteri was not within reach, the centre of the mass in the pelvis was punctured to the depth of half an inch, and the current passed through the tumour on fourteen occasions. The figures given below are not absolutely correct.

28th September 1887.—40 milliampères for 5 minutes.

2nd October " 40 " " 5 "

Menstruation is over; there has not been retention, and the tumour does not reach to within 1 inch of the umbilicus.

5th October.—40 milliampères for 5 minutes.

7th October.—40 milliampères for 5 minutes.

12th „ 30 „ „ 5 „

14th „ 50 „ „ 5 „

17th „ 35 „ „ 5 „

19th „ 40 „ „ 5 „

24th „ 70 „ „ 5 „

The second period since the treatment was begun is over.
Again the catheter was not required.

26th October. — 60 milliampères for 5 minutes.

28th „ 70 „ „ 5 „

31st „ 100 „ „ 5 „

2nd November.—100 „ „ 5 „

4th „ 100 „ „ 7½ „

The patient now feels very well. The tumour is decidedly smaller in the pelvis ; it reaches almost up to the level of the umbilicus on the right side, and is fully 3 inches below that level on the left. The os uteri is now easily within reach.

On 10th March 1888 she wrote to another patient, telling her that she had not the slightest ailment ; that she had not required to have the water drawn off ; and that she had not required to ask leave of absence even for five minutes, and this although they had been working overtime.

11th July 1889.—Dr Bannerman wrote that this patient had never experienced any inconvenience since the electrical treatment.

CASE XXXVII.—Single, age 44, consulted Dr Keith four years ago, and was told that she had a fibroid tumour of the uterus ; but at that time her health was quite good.

The history of this case dates back to eight or ten years ago, as it was about that time that it was first noticed that the loss every month was increasing in quantity. It is only two years, however, since the loss became so great as to

affect the general health, and during those years the tumour has increased with comparatively great rapidity. The mass was originally situated entirely in the right side, but of late has increased so as to fill the left side also. The flow now continues for seven or eight days, and the patient is in bed for two or three of them. In addition to the loss, she finds that many things which she could do formerly, she either cannot do now or can accomplish only with an effort.

The treatment consisted in thirty-five applications, in the first seven of which the internal electrode was made positive, and in the remainder negative. Gaiffe's galvanometer was used after the fifteenth application. During the first half of the treatment the lady lived in Edinburgh, in the second half she came through from Glasgow twice a week, and by a convenient arrangement of trains, she was able to be back at home within three hours.

On examination of the abdomen, the tumour was found to reach to fully 1 inch above the umbilicus on both sides, and to be smooth and regular in outline. The cervix was situated immediately behind the pubes, and a sound entered, after curving first to the left and then very much back, to a depth of $6\frac{1}{2}$ inches.

29th September 1887.— 40 milliampères for 5 minutes.

<i>1st October.</i>	„	70	„	„	5	„
<i>4th</i>	„	50	„	„	5	„
<i>6th</i>	„	100	„	„	5	„
<i>8th</i>	„	100	„	„	5	„
<i>11th</i>	„	100	„	„	5	„

The period has begun to-day, a week too soon. The tumour does not reach up to the umbilicus on either side.

22nd October.—100 milliampères for 5 minutes.

This period has been the worst she has ever had.

25th October.—90 milliampères for 5 minutes.

The outline of the tumour is becoming broken up, and there are now several distinct lobules.

29th October. — 120 milliampères for 5 minutes.

1st November. — 120 " " 5 "

2nd " 120 " " 5 "

5th " 120 " " 5 "

Begins to feel a decided improvement in the general health.

9th November. — 120 milliampères for 5 minutes.

11th " 120 " " 5 "

12th " 120 " " 5 "

26th " 75 " " 5 "

The second period is over. It was again worse than usual, though not so severe as the previous one. Gaiffe's galvanometer was used to-day.

29th November. — 65 milliampères for 5 minutes.

1st December. — 110 " " 5 "

3rd " 75 " " 5 "

The tumour now is much lobulated, and is smaller on the left side.

6th December. — 80 milliampères for 10 minutes.

8th " 150 " " 10 "

10th " 130 " " 10 "

21st " 150 " " 5 "

This month the period lasted but four days, and there was less loss than the patient ever remembers to have had.

4th January 1888. — 150 milliampères for 5 minutes.

7th " 150 " " 10 "

19th " 175 " " 10 "

There has been more discharge, but much less than usual.

21st January. — 150 milliampères for 10 minutes.

25th " 170 " " 10 "

28th " 155 " " 10 "

1st February. — 190 " " 10 "

14th " 180 " " 10 "

A very slight period, lasting three days, is over, and the lady feels well and strong.

18th February.—175 milliampères for 10 minutes

22nd " 190 " " 10 "

25th " 185 " " 10 "

29th " 190 " " 10 "

There is now not much tumour to the left of the middle line, and on the right it reaches to within 1 inch of the umbilicus.

9th August.—An opportunity was given of examining the tumour, which was found to be more lobulated, but of much the same size as it was in February. The general health is fairly good, the periods are normal, there is a natural quantity of blood lost, and there is not any necessity to go to bed.

3rd May 1889.—The tumour is rather smaller than it was in August. The periods last for four days, and for two of these the lady keeps quiet in bed. The growth of the tumour has been arrested, the monthly losses have been lessened, and the general health has been improved.

CASE XXXVIII.—Single, age 37, from Glasgow.

For a number of years this lady has been more or less of an invalid, and has had to go abroad every winter. She ascribes her ill health to the circumstance that she suffers every month from prolonged and profuse menstrual discharge, the flow continuing for eight days, and to a feeling of wretchedness and depression at these times. Treatment of all kinds has been tried; but in spite of it all, each year sees her a little weaker, and with a greater loss at the periods.

On examination the cervix uteri is found to be situated far back in the pelvis, and the fundus to be lying against the abdominal wall above the pubes. A sound can be passed, with considerable difficulty, to a depth of four and a half inches. The pelvis is full of tumour, which can be felt some inches above the pubes all across the pelvis.

Thirty-six applications with the positive pole in the uterine cavity were made.

20th September 1887.—40 milliampères for 5 minutes.

3rd October „ 40 „ „ 5 „

The patient was very tired after the first application.

5th October.—40 milliampères for 5 minutes.

7th „ 40 „ „ 5 „

24th „ 40 „ „ 5 „

The period is over, the quantity of blood lost was much the same as usual, but the discomfort and feeling of depression was absent, and to-day the patient feels stronger than usual.

26th October.—40 milliampères for 5 minutes.

28th „ 60 „ „ 5 „

31st „ 40 „ „ 5 „

The lady says that she feels in every way much better, is stronger, and can walk farther and with more comfort.

2nd November.—80 milliampères for 5 minutes.

4th „ 120 „ „ 5 „

18th „ 40 „ „ 5 „

There has been a greater loss of blood than usual.

21st November.—50 milliampères for 5 minutes.

23rd „ 60 „ „ 5 „

25th „ 60 „ „ 5 „

28th „ 155 „ „ 5 „

Gaiffe's galvanometer was used to-day. The patient continues steadily to improve.

30th November.—140 milliampères for 5 minutes.

2nd December.—115 „ „ 5 „

5th „ 135 „ „ 5 „

7th „ 90 „ „ 5 „

9th „ 100 „ „ 5 „

21st „ 125 „ „ 5 „

The loss this month was less than it has been for some time.

23rd December.—125 milliamperes for 5 minutes.

26th " 115 " " 5 "

28th " 125 " " 5 "

30th " 175 " " 5 "

The patient now walks very much better, and is quite satisfied with the progress that she is making.

2nd January 1888.—125 milliamperes for 5 minutes.

4th " 150 " " 5 "

6th " 135 " " 5 "

10th " 150 " " 5 "

12th " 175 " " 5 "

14th " 175 " " 5 "

16th " 160 " " 5 "

23rd " 115 " " 5 "

This month there has been less discharge than for many years ; and to-day, instead of feeling ill and sore, the patient says that she feels about as well as she ever did in her life.

25th January.—130 milliamperes for 5 minutes.

27th " 140 " " 5 "

30th " 150 " " 5 "

October.—Has been quite well.

25th June 1889.—Periods natural and feels well. The tumour is now freely movable, scarcely to be felt in the pelvis, and the cervix is in front instead of being almost beyond reach.

CASE XXXIX.—Single, age 47, was seen with Dr Finlay of Trinity.

This patient has been ailing for some years ; she cannot walk as far as she used to be able to do, and when she stands there is a good deal of pain, especially in the left side. There is also menorrhagia, which is steadily becoming worse. The tumour was noticed fifteen months ago, and is now very decidedly larger than it was at that time. She is

a woman who will not take care of herself, and does what she likes as the fancy takes her.

The tumour is round and prominent, and extends from half way up to the umbilicus to low down in the pelvis. The cervix is small and situated far back.

7th October 1887.—100 milliampères for 5 minutes.

11th " 100 " " 5 "

13th " 175 " " 5 "

Feels more comfortable.

15th October.—150 milliampères for 5 minutes.

29th " 125 " " 5 "

The period has been much as usual, but accompanied by more pain.

1st November.—100 milliampères for 5 minutes.

3rd " 100 " " 5 "

12th Jan. 1888.—140 " " 5 "

The patient had been so well until the last few days that she did not think it necessary to come for treatment.

14th January.—125 milliampères for 5 minutes.

17th " 100 " " 5 "

19th " 170 " " 5 "

7th February.—130 " " 5 "

The period has been decidedly worse than usual; now she feels better.

9th February.—160 milliampères for 5 minutes.

11th " 170 " " 5 "

14th " 175 " " 5 "

1st March. —180 " " 5 "

3rd " 180 " " 5 "

6th " 175 " " 5 "

8th " 190 " " 5 "

10th " 190 " " 5 "

28th " 180 " " 5 "

30th " 180 " " 5 "

The sound was always made positive.

Having heard that we were leaving Edinburgh the patient became very anxious to have more treatment.

Dr Finlay wrote on the 11th June 1889:—"Miss —— had distinctly less bleeding for three months after the electrolysis, and also felt more comfortable and had less feeling of fulness from the tumour. Since then she says she has been much as before, and will not allow that she has derived permanent benefit from the treatment. In her case I can feel the tumour in the left iliac region from the outside on deep pressure and also from the vagina. I see Miss —— occasionally on account of eczema from which she suffers, and her general health appears to me to be wonderfully good."

CASE XL.—Married, age 31, came to the Woman's Dispensary on the 7th of October 1887.

Patient has been married for three years, and enjoyed fairly good health until six months ago, although for many years there has been some pain in the back, which has always been worse during menstruation. For two years there has been considerable feeling of weight and discomfort. Half a year ago the tumour was noticed, attention being called to it by a pain described as if a hand were inside the abdomen tearing at something.

Menstruation has been normal, except on one occasion, when, after having been examined by a number of students in the Infirmary, there was said to have been a flooding. She says she is very uncomfortable before the menstrual periods from swelling of the tumour. A very hard, prominent tumour extends up to the level of the umbilicus. There is no mobility of the mass, which is somewhat tender. In the pelvis, the tumour is felt also to be quite immovable, and a small cervix is reached with great difficulty, very high up on the right side. Any attempt to remove the ovaries would probably have been unsuccessful.

The patient, a tall, well-made woman, looked very miserable and ill.

At the first nine sittings the strength of the electrical current recorded is probably not exact.

7th October.—40 milliampères for 5 minutes.

10th „ 40 „ „ 5 „

14th „ 35 „ „ 5 „

17th „ 45 „ „ 5 „

On account of the difficulty in reaching the os, and consequently in passing the sound, it was thought best to puncture the centre of the mass in the pelvis to the depth of one-third of an inch. After the first application even, there was an improvement; the patient looked and said she felt better, and there was a decided diminution in the size of the tumour. The first four applications reduced the level of the tumour to 2 inches below the navel, made it more movable, and allowed of the fairly easy passage of a sound.

31st October. —40 milliampères for 5 minutes.

4th November.—50 „ „ 5 „

11th „ 50 „ „ 5 „

14th „ 70 „ „ 5 „

18th „ 50 „ „ 5 „

28th „ 65 „ „ 5 „

There have been two periods; before which the discomfort due to swelling of the tumour has been absent; the patient feels very well, and there is a vast difference in her appearance.

2nd December.— 75 milliampères for 5 minutes.

5th „ 70 „ „ 5 „

9th „ 125 „ „ 5 „

12th „ 135 „ „ 5 „

16th „ 115 „ „ 5 „

The tumour is much smaller, is more movable, and can be handled without producing discomfort.

6th January 1888.—140 milliampères for 5 minutes.

<i>8th</i>	"	160	"	"	5	"
<i>10th</i>	"	145	"	"	5	"
<i>13th</i>	"	135	"	"	5	"
<i>27th</i>	"	50	"	"	5	"

At the beginning of the year there was pain in the tumour for some days. This was relieved by a single application. The tumour had not become swelled, and there was not any apparent cause for the return of pain—neither tenderness nor fixing. The period was passed through quite easily, except for a "queer" feeling low down.

30th January.—120 milliampères for 5 minutes.

<i>3rd February</i> .—145	"	"	5	"
<i>6th</i> "	160	"	"	5
<i>24th</i> "	140	"	"	5
<i>27th</i> "	140	"	"	5
<i>29th</i> "	135	"	"	5
<i>2nd March</i> . —145	"	"	5	"

The relation of cervix to the tumour has improved, so that, since the 30th January, it has not been necessary to resort to puncture. The period in February was passed through easily; there was not any swelling, and but little pain.

5th March.—260 milliampères for 5 minutes.

<i>7th</i> "	190	"	"	5	"
<i>9th</i> "	200	"	"	5	"
<i>23rd</i> "	185	"	"	5	"
<i>26th</i> "	220	"	"	5	"
<i>28th</i> "	230	"	"	5	"
<i>30th</i> "	235	"	"	5	"
<i>2nd April</i> .—160	"	"	"	5	"
<i>4th</i> "	150	"	"	5	"
<i>6th</i> "	200	"	"	5	"

The treatment consisted in thirty-seven applications; in

twenty puncture was employed; and the puncture of one day was never detectable even when the next one was made two days afterwards. The result was a diminution of the tumour by at least one-half, and a complete change for the better in the general health of the patient.

In September the tumour was smaller than it had been in April, but there was considerable pain in the groins after the periods, and when this was bad she was very miserable.

June 1889.—Have heard that she has been a patient in the Infirmary, and that she has been sent home without anything having been done. This is not altogether surprising, as she was a difficult woman to manage.

CASE XLI.—Married, age about 37, was seen with Dr Burn Murdoch in October 1887.

Nine years before this time patient had been seen on account of a fibroid tumour of the uterus shortly after an attack of rheumatic fever, which had left the heart in a very weak condition. At that time, there were occasional hæmorrhages from the kidneys. Now the general health is very poor, and there is great abdominal discomfort, with pain in the back. Until the last period there has not been excess in the menstrual flow.

The lady looks ill and miserable, and on examining the abdomen, a very large hard tumour, extending up beneath the ribs on both sides, is seen. The tumour is not movable, and is very prominent, and gives rise to great difficulty in walking. The uterine cavity measures 8 inches. The treatment consisted in thirty applications,—twenty-three in which the internal electrode was positive, and seven in which it was negative. Gaiffe's galvanometer was not used until the ninth sitting.

10th October 1887.—40 milliampères for 5 minutes.

12th " 30 " " 5 "

14th " 40 " " 5 "

17th October 1887.—50 milliampères for 5 minutes.

18th November. —70 " " 5 "

The treatment has been stopped for the last month on account of an attack of rheumatism.

21st November.—65 milliampères for 5 minutes.

23rd " 70 " " 5 "

The patient says that she is beginning to feel stronger, and can sleep better ; she can also get about with more comfort.

25th November.—70 milliampères for 5 minutes.

28th " 75 " " 5 "

Gaiffe's galvanometer was used to-day.

30th November.—75 milliampères for 5 minutes.

9th December. —110 " " 5 "

A perfectly natural period is over, and the lady is in great spirits, as she feels so much better.

12th December.—165 milliampères for 5 minutes.

14th " 215 " " 5 "

16th " 170 " " 8 "

19th " 180 " " 10 "

21st " 210 " " 8 "

The patient can now take what she calls a good long walk. The left side of the tumour is becoming much smaller. This was the side, which has grown of late.

23rd December.—200 milliampères for 8 minutes.

26th " 210 " " 5 "

4th Jan. 1888.—210 " " 5 "

The period has been again quite natural.

6th January.—150 milliampères for 5 minutes.

9th " 140 " " 5 "

The sound has been made negative during the last two applications. The lady's husband measured her round the waist ten days ago, and again to-day, and finds that there is a diminution of $3\frac{1}{2}$ inches.

16th January.—210 milliampères for 5 minutes.

18th January.—250 milliampères for 5 minutes.

The sound was again made positive, as the patient had had a great deal of domestic worry, and was afraid that she might have a bad bleeding.

30th January.—175 milliampères for 5 minutes.

The period has been very slight, and lasted but three days. The tumour continues to decrease rapidly. The sound was negative.

1st February.—210 milliampères for 5 minutes.

3rd " 200 " " 5 "

The waist measurement shows one inch less in the past four weeks.

27th February.—90 milliampères for 5 minutes.

Another easy period, in spite of measles, with accompanying bother, having appeared in the household.

29th February.—130 milliampères for 5 minutes.

Feels splendidly well. Measures 32 inches round the waist instead of 37 on the last day of the year. On the right side, the tumour is quite free of the ribs, and on the left there is a great hollow. The cervix is almost out of reach, and the tumour appears to be smaller by at least a half.

27th March.—210 milliampères for 8 minutes.

31st " 110 " " 10 "

These two positive applications were made on account of a painful spot on the right side, and gave complete relief.

September.—Tumour continues to decrease in size; the periods are regular, and there is not any pain, except very occasionally. Is better in every way than for the last eight years.

19th January 1889.—The tumour is still said to be diminishing in size. At times there is a spot on the left side which causes pain, but in every other respect the general health is perfect, and she has been able to do as much as most women.

CASE XLII.—Married, age 24, came to the Woman's Dispensary, Edinburgh, on the 10th of October 1887.

Until she was married in August 1886 she had been a perfectly healthy girl. The uterine functions were normal and regular; the periods lasted three or four days, and recurred every four weeks. Very shortly after her marriage, she began to feel not so well as she had done, and to experience pain during coitus. Soon there were pains, at first at times, and latterly constant, in the back, right side, and down the right leg. The pain was so severe as to prevent her sleeping, and was always much worse at the commencement of a period. Six months after the marriage the menstrual flow lasted for three weeks, and was very abundant, and from that time she has rapidly gone down hill, and has got thin and anæmic. The periods now usually last for two weeks, and recur in seven, twelve, or fourteen days. For six months she has been in bed nearly all the time, and is quite unable to do her housework. The patient had never been pregnant.

On making a pelvic examination, the first thing noted was extreme tenderness, which rendered the examination somewhat difficult. The cervix was situated far back, and on placing the hand on the abdomen, a tumour of the uterus was felt, extending to within half an inch of the level of the anterior superior iliac spine. This tumour was situated principally in the right side and in front, and was immovably fixed, apparently by cellular swelling outside the growth, hence the dyspareunia.

Treatment.—The sound connected to the positive pole of the battery was passed into the cavity of the uterus, and currents of electricity of doubtful strength, but probably never exceeding fifty milliamperes, were passed through the tumour for five minutes on each occasion, on the 10th, 14th, 17th, and 21st October, and 4th, 11th, 14th, and 18th November. After the second application she felt better; after

the third there was increased pain in the back. Before the fifth there had been a period, very much the same as usual. Six applications improved her decidedly ; she had little pain in the back, and was able to be out of bed all day, and to do her housework. The second period after the commencement of the treatment came on after an interval of nineteen days, and lasted only four days.

28th November.—45 milliampères for 5 minutes.

2nd December.—50 " " 5 "

5th " 75 " " 5 "

9th " 65 " " 5 "

12th " 60 " " 5 "

16th " 65 " " 5 "

The menstrual flow again lasted but four days, but was accompanied by more pain.

4th January 1888.—80 milliampères for 5 minutes.

8th " 60 " " 5 "

13th " 60 " " 5 "

20th " 65 " " 5 "

23rd " 65 " " 5 "

27th " 110 " " 5 "

30th " 135 " " 5 "

The flow this month lasted four days, and was still painful.

3rd February.—65 milliampères for 5 minutes.

6th " 75 " " 5 "

20th " 65 " " 5 "

24th " 100 " " 5 "

27th " 100 " " 5 "

29th " 100 " " 5 "

The period at the middle of the month was not accompanied by any pain. The tumour is smaller and less tender. Towards the end of the month there was some return of the backache.

2nd March.— 75 milliampères for 5 minutes.

5th March.—190 milliampères for 5 minutes.

14th " 85 " " 5 "

19th " 110 " " 5 "

21st " 105 " " 5 "

28th " 130 " " 5 "

30th " 120 " " 5 "

There was not any pain with the menstrual flow this month, and the patient looks and feels very well, and much stronger.

2nd April.—125 milliampères for 5 minutes.

4th " 90 " " 5 "

6th " 95 " " 5 "

The tumour is fully 1 inch lower in the abdomen than it was six months ago; there is not much pain; there is not any menorrhagia, and the general health has much improved.

The treatment has consisted of thirty-seven applications, the positive pole being placed inside the uterine cavity.

On 21st January 1889, I found this patient in perfect health, "feeling nothing at all the matter." Since the beginning of June she has been quite well; the periods last three or four days, and recur every four weeks with unfailing regularity. There is not any pain in the back, side, or leg, and dyspareunia is a thing of the past.

No tumour could be felt in the abdomen; in the pelvis the cervix was found to have moved forwards to a natural situation; the body of the uterus felt a little big, there being barely a trace of the old tumour. There was complete mobility and no tenderness.

CASE XLIII.—Married, age 34, the mother of five children, was seen in consultation with Dr Woolston in October 1887.

The patient was a delicate little woman, whose general health had become much deteriorated by a greatly increased

quantity of blood lost at the menstrual periods, and the flow now continues for eight, instead of three days. In addition, she suffers from frequent headaches, and has very considerable difficulty in walking, and is altogether in very poor condition.

On examination it was found that the uterus was large, swollen, and retroverted. The cavity measured $3\frac{1}{2}$ inches, and the uterus could not be replaced with the sound unless undue force had been used. Situated in the left broad ligament, and connected to the left side of the uterus, was a mass about the size of a billiard ball. For some months a ring pessary had been worn, with great relief to the back.

The treatment consisted in twenty applications of electricity—the internal electrode being on every occasion connected to the positive pole of the battery. Gaiffe's galvanometer was used to measure the strength of the current in the last eight applications only.

11th October.—40 milliampères for 5 minutes.

13th " 40 " " 5 "

15th " 40 " " 5 "

18th " 60 " " 5 "

25th " 80 " " 5 "

The period is over, and there has been some improvement; it lasted five days, and there was less discharge. The lady feels stronger, and says that she can walk better, even although she is not wearing the pessary.

27th October.—80 milliampères for 5 minutes.

1st November.—120 " " 5 "

2nd " 100 " " 5 "

The patient feels stronger; the uterus is lighter, and can be replaced with the sound with care and without pain. The mass on the left side is smaller.

5th November.—100 milliampères for 5 minutes.

15th " 60 " " 5 "

The period came on a week before its time, and although it has been going on for six days, and is not yet stopped, yet the patient does not feel weak and pulled down as she used to do.

17th November.—70 milliampères for 5 minutes.

19th „ 70 „ „ 5 „

29th „ 160 „ „ 5 „

Feels stronger, and says that her head feels much clearer.

1st December.—155 milliampères for 5 minutes.

3rd „ 100 „ „ 5 „

Is feeling very well indeed. On the way home after the last application there was a good deal of pain felt in the lower part of the abdomen.

8th December.—75 milliampères for 5 minutes.

10th „ 110 „ „ 5 „

20th „ 115 „ „ 5 „

There is not any tumour to be felt on the left side. There has been much less loss this time.

3rd January 1888.—75 milliampères for 5 minutes.

7th „ 110 „ „ 5 „

Feels very well. The uterus is smaller, and can be easily turned forwards, and there is not a trace of the outgrowth which was formerly attached to the left side.

6th April.—Is very well indeed.

September.—The periods now last two or three days; there is not any pain, nor any headache, and, in spite of the fact that her five children and herself have had whooping-cough, she is now in excellent health.

Extract from letter received on 12th March 1889:—“I have had no return of any of the symptoms I had before I was under your care, and feel very grateful to you for making me so much better. The illness I have had lately was entirely owing to the whooping-cough, which I had last autumn, accompanied by bronchitis, and which reduced my strength so much that in January I had another threatening

of bronchitis, and was very weak. I am getting better now but may not venture out of doors yet."

CASE XLIV.—Single, age 37, came to the Royal Infirmary, Edinburgh, from Greenock in January 1887, and was admitted as an in-patient into the special ward for the treatment of ovarian disease.

The patient was a fair-haired woman who had to work for her living. The history was that, until the age of 29, she was quite well and regular in every way. About that age she began to lose more blood every month than had been habitual to her. At first, this did not cause alarm, but after a time, and when she found that she was not so strong as formerly, and that month by month she was slowly losing ground, she became anxious for treatment. As treatment, which she obtained in Greenock, did not do much good, she went to Glasgow and consulted Dr Robert Bell two years ago. An enlargement of the womb was then discovered, and appropriate remedies ordered and persevered with for a long time with little, if any, good result. She is now confined to bed for at least one week every month.

Examination at this time revealed a uterine tumour extending to 3 inches above the pubes, and entirely filling the pelvis. It was useless to tell a patient, so ill as this one was, that she must wait until the menopause for twelve or fifteen years, so she was advised to submit to removal of the ovaries. As this was one of the cases where it was apparent that there would be probably difficulty in getting them out, the patient was told that, should it be found to be impossible to do so, no attempt would be made, at that time, to take away the tumour itself.

On the 20th January 1887 the operation was performed by Dr Keith in the presence of Dr Hodsdon and the usual number of students. As had been expected, the right

ovary was found, after a prolonged search, incorporated with the tumour; the Fallopian tube was injured during the manipulation, and was removed. What appeared to be the left ovary was reached very far back, and also so situated that its removal would have necessitated injury to the tumour. Neither benefit nor injury followed the operation, and the patient went home in the same condition as she had come, except for the presence of a scar on the abdomen.

The patient returned in October of the same year, being anxious to try if electricity would do for her what surgery had failed to do. The tumour had grown rapidly, and now, instead of reaching only to 3 inches above the pubes, extends to the same distance above the umbilicus. The cavity measures $4\frac{1}{4}$ inches.

Unfortunately, a galvanometer of doubtful accuracy was used to measure the strength of the current for the first fourteen applications. Forty-five applications were made altogether, the current being passed from the sound inside the cavity of the womb towards the clay pad on the abdomen.

15th October.— 30 milliampères for 5 minutes.

17th " 40 " " 5 "

19th " 80 " " 5 "

21st " 100 " " 5 "

24th " 70 " " 5 "

The patient thinks that she feels a little stronger.

26th October. — 80 milliampères for 5 minutes.

4th November.—100 " " 5 "

The loss at the period has been more than usual; she was in bed for seven days; but there was none of the dysmenorrhœa which has been present for the last few years.

8th November.—100 milliampères for 5 minutes.

10th " 100 " " 5 "

15th November.—65 milliampères for 5 minutes.

17th " 60 " " 5 "

19th " 60 " " 5 "

22nd " 50 " " 5 "

24th " 50 " " 5 "

26th " 105 " " 5 "

Gaiffe's galvanometer was used to-day.

6th December.—100 milliampères for 5 minutes.

The second period is over; the loss of blood was much the same as last time, and there was again little pain.

8th December.—80 milliampères for 5 minutes.

10th " 80 " " 5 "

13th " 80 " " 5 "

Thinks that she is gaining a little strength.

15th December.—130 milliampères for 5 minutes.

17th " 100 " " 5 "

18th " 150 " " 5 "

20th " 150 " " 5 "

3rd Jan. 1888.—150 " " 5 "

The third period has been much the same as the two previous ones; but the patient feels stronger than she has been accustomed to do immediately afterwards.

5th January.—150 milliampères for 5 minutes.

7th " 150 " " 5 "

10th " 175 " " 5 "

12th " 175 " " 5 "

14th " 175 " " 5 "

17th " 150 " " 5 "

19th " 170 " " 5 "

21st " 165 " " 5 "

28th " 160 " " 5 "

In spite of a somewhat more profuse flow than usual the patient feels decidedly stronger.

31st January.—150 milliampères.

2nd February.—200 milliamperes for 5 minutes.

<i>4th</i>	„	150	„	„	5	„
<i>7th</i>	„	220	„	„	5	„
<i>9th</i>	„	210	„	„	5	„
<i>11th</i>	„	230	„	„	5	„
<i>16th</i>	„	220	„	„	5	„

The patient says that she feels better and stronger than she has done for six years.

18th February.—210 milliamperes for 5 minutes.

<i>25th</i>	„	180	„	„	5	„
<i>28th</i>	„	220	„	„	5	„
<i>1st March.</i>	—	220	„	„	5	„

At the last period, between the 18th and 25th ultimo, the patient required to be in bed two days instead of the usual seven, and the amount of blood lost was not more than half her usual. She is now able to walk better, feels stronger, and the tumour is about one-third smaller than it was. This patient was one of the few who took the trouble to write often and report how she was, after going home ; and the following are extracts from her letters.

24th May.—“ I was rather worse this time my period was on ; the time was the same, but the quantity was more than it was either of the last three times.”

22nd June.—“ I am sorry to say that my period this time was not any better, just the same as last time. I cannot say I feel any stronger than I felt when I left Edinburgh.”

23rd July.—“ I am glad to say that my period this time has been much better. I think there would be about half the quantity this time that there was either of the last few times, and it just continued six days. I think this time I would only have about five or six times more than it ought to be. I cannot say anything about the size of the tumour, but I think it must be much smaller, I feel so easy—not the swelled, crushed up feeling I had ; but if you would like to

see, I would go in to Edinburgh a day either after my next period or after next again."

The patient was not aware at this time that we had left Edinburgh for London.

20th August.—"I have been much the same this period as I was last, but I feel a difference in strength, the last three or four weeks I have been much stronger."

22nd October.—"I am sorry I cannot say that there has been any improvement since I wrote in August; last month and this one my periods have been much the same as the two previous; the quantity was about the same, but the time was one day longer (seven days). It is a year the middle of this month since I went to Edinburgh to have the electricity; I am greatly improved since then; then I had to be in bed six days, and up and down three or four; now I have just to keep my bed for two days, and three or four up and down."

15th December.—"I am much pleased to be able to send a good report this time. My period last month was much improved, and this month the quantity was even less than last month, and it just continued five days. I had not to be in bed this time at all, just on the sofa a good deal for four days. I think the quantity now will only be three or four times more than it ought to be. I have not been able to gather very much strength yet, I get weakened down so much every month; but now the bleeding is so very, very much less, I think I should begin to pick up. I will let you know in three months how I get on. I am afraid I am troubling you writing to you so often."

18th March 1889.—"I am glad to say I continue to improve. My periods are better than when I wrote last, and I am also feeling stronger, although I cannot go a whole day yet without lying down to rest for about two hours. What a difference there is on me since this time last year!

"I will write in six months and let you know how I am then. I think if I improve the next six months as I have been doing I should be pretty well."

CASE XLV.—Married, age 45, was seen with Dr Finlay in October 1887.

For a number of years this patient had suffered from menorrhagia, though it has only been serious for the last two. Sometimes the loss is said to be so bad as to amount to a flooding. A year ago some polypi were removed from the cervix, and since then there has been some slight improvement. In addition to the loss there is constant discomfort in the lower part of the abdomen and in the pelvis, accompanied by irritability of the bladder.

On examination, the tumour is found to be as large as a newly-born child's head, and to press very much on the bladder. The cervix is situated very far back in the pelvis, and the passage of a sound is a work of extreme difficulty. The depth of the uterine cavity is $3\frac{3}{4}$ inches.

Nine applications were made, the sound being positive. The treatment had to be discontinued on account of the death of the lady's husband, and was not resumed on account of our removal from Edinburgh.

18th October 1887.—40 milliampères for 5 minutes.

20th	"	40	"	"	5	"
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22nd	"	40	"	"	5	"
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27th	"	60	"	"	5	"
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29th	"	80	"	"	5	"
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10th November.	—	80	"	"	5	"
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The quantity of discharge has been much the same as usual, but there has been less pain.

12th November.—80 milliampères for 5 minutes.

15th	"	65	"	"	5	"
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17th	"	80	"	"	5	"
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Dr Finlay wrote on 11th June 1889,—“She says that she

noticed no difference in the amount of the discharge; she has, however, never had to send for me since then on "account of profuse hæmorrhage, as she used to have to do. She looks much better, and I am sure she is so."

CASE XLVI.—Married, age 29, was admitted into the Royal Infirmary, Edinburgh, in October 1887.

At the beginning of the present year this patient was delivered of a still-born child. There was no particular difficulty at the birth, and there was not supposed to be any reason why it should have been followed by a constant discharge of blood for three months. The bleeding became so severe whenever the erect posture was assumed, that the great part of those months was spent in bed. From that time until admission into the Infirmary, there has been very great menorrhagia every month, the flow lasting from ten to twelve days.

The woman is now blanched, and is able to do very little for herself, and says that she has been as many days in bed as out of it, since her baby was born.

On examination of the abdomen a uterine tumour is felt to extend to two inches above the pubes.

Before the treatment was commenced the quantity of uræa excreted by the kidneys in twenty-four hours was estimated, and was found to average about 240 grains. The day after the first application it dropped to 172 grains, and then gradually rose to 236 grains per diem.

15th October.—40 milliampères for 5 minutes.

18th " 60 " " 5 "

20th " 55 " " 5 "

25th " 120 " " 5 "

The period came on a week too soon; it did not continue for longer than half the usual time, and there was not so much loss, on the whole. She says that she feels stronger.

29th October.—60 milliampères for 5 minutes.

1st November.—60 milliampères for 5 minutes.

To-day the sound, which had previously been positive, was made negative.

3rd November.—120 milliampères for 5 minutes.

5th „ 120 „ „ 5 „

8th „ 120 „ „ 5 „

10th „ 120 „ „ 5 „

15th „ 120 „ „ 5 „

Improvement in the general appearance has been very marked, and the patient says that she feels better than she has done for the last eighteen months.

17th November.—120 milliampères for 5 minutes.

24th „ 120 „ „ 5 „

Menstruation has occurred at an interval of four weeks, and the loss has been less than there has been for five or six years. The patient says that she feels quite well. The tumour is smaller, but there is not a very marked difference in its size.

23rd February 1888.—The late patient is now perfectly well; she has a good colour and has got quite stout, and this in spite of the fact that she has had to nurse her husband for most of the time she has been at home, and has now brought him to the Infirmary. She says that the tumour, which formerly felt to her like a big egg, is now not to be felt at all.

CASE XLVII.—Married, aged 40, came to Edinburgh in October 1887. Rather more than two years ago, a tumour which at that time could be felt above the pubes was discovered. For several years before this was found, the patient had been treated for displacement, she says. There is great trouble with the bladder, as sometimes there is difficulty in passing water, at other times difficulty in retaining it, and occasionally it comes away involuntarily on coughing. Menstruation is regular, but painful, the pain

commencing for some days before the flow, which continues for seven days, and is becoming very profuse. Large clots are passed as a rule.

On examination, it is found that the tumour extends almost up to the umbilicus, and is said to swell enormously before the periods. The mass is felt to descend very low into the pelvis, there is no cervix, and the os can be felt with difficulty very high up in front.

At first it was found to be necessary to make punctures, though, later on, and when the growth had diminished in size, a sound could be passed into the uterine cavity. The current was always allowed to flow from the abdomen to the puncturing needle or sound.

24th October.—35 milliampères for 5 minutes.

26th " 30 " " 5 "

Has slept better.

28th October. —40 milliampères for 7 minutes.

1st November.—40 " " 5 "

3rd " 40 " " 5 "

5th " 35 " " 5 "

7th " 35 " " 5 "

9th " 40 " " 5 "

11th " 50 " " 7 "

14th " 60 " " 7 "

Is sleeping very much better, and the appetite is much improved.

23rd November.—60 milliampères for 5 minutes.

The period is over, and has been much as usual, except that there was little swelling of the tumour.

25th November.—60 milliampères for 5 minutes.

28th " 90 " " 5 "

Gaiffe's galvanometer was used to-day.

12th December.—100 milliampères for 5 minutes.

14th " 110 " " 5 "

16th " 110 " " 5 "

26th December.—115 milliampères for 5 minutes.

There is no longer any trouble with the bladder, and the lady is able to get about better and can get upstairs more easily.

28th December.—150 milliampères for 5 minutes.

7th Jan. 1888.—110 " " 5 "

9th " 100 " " 5 "

A puncture was not made to-day, the sound being passed into the uterine cavity instead. Says she feels as if she could fly.

11th January.—110 milliampères for 5 minutes.

24th " 150 " " 5 "

The applications are decidedly easier when a puncture is not made. The period has been much as usual.

26th January.—150 milliampères for 8 minutes.

21st " 170 " " 8 "

31st " 180 " " 8 "

2nd February.—180 " " 8 "

18th " 180 " " 8 "

There has been rather more discharge, but the patient feels very well.

21st February.—180 milliampères for 8 minutes.

23rd " 190 " " 10 "

25th " 180 " " 8 "

28th " 180 " " 10 "

1st March. —175 " " 10 "

3rd " 195 " " 10 "

6th " 200 " " 8 "

8th " 250 " " 10 "

17th " 150 " " 10 "

The period has been much as usual.

20th March.—200 milliampères for 10 minutes.

22nd " 200 " " 10 "

24th " 160 " " 10 "

27th " 180 " " 10 "

30th March.—170 milliampères for 10 minutes.

1st April. —110 " " 8 "

The lady is very well, and the tumour is about half the size it was before.

Dr Nicholls wrote on 30th April,—“Mrs — wishes me to write and let you know how much she has improved. The tumour is much less, and she can walk with comfort.”

25th June 1889.—“She has certainly derived permanent benefit from the electric treatment, but has been ill with bronchitis lately. The left fibroid tumour is doing well; but some time back there was a fresh formation in the right side, which I thought might require your treatment. You will be pleased to hear this is now better.”

CASE XLVIII.—Married, age 37, was brought to Edinburgh by her husband, who is a doctor, in October 1887.

For several years this patient has not been in very good health, and the monthly periods are lasting longer and the quantity of discharge is steadily increasing. Fifteen months ago, the tumour was first noticed, and it has grown with considerable rapidity, and now its weight is beginning to be a very serious matter, as it prevents her getting about. In the summer time the lady became pregnant, and it was thought advisable to get rid of the foetus. Life is beginning to be a burden, and the care of her house and of her children is a great source of fatigue.

The tumour is found to be of some considerable size. It extends upwards to fully 2 inches above the umbilicus, and passes well into both loins. The cavity is towards the right side, and a sound passes without difficulty to a depth of 9 inches.

Naturally, the husband was very anxious, as the tumour had evidently opened up both broad ligaments, and as the lady was not very strong. Although he knew, of course, that Apostoli's treatment was not of very old standing, yet

anything seemed to be better than the risk of hysterectomy.

The treatment consisted in nineteen sittings, the internal electrode being made negative on every occasion. The reason why there were not more was because the patient became anxious to get home for Christmas; and after getting home, she preferred to wait and see what would be the result before commencing again.

25th October. — 40 milliampères for 5 minutes.

27th „ 80 „ „ 5 „

29th „ 100 „ „ 5 „

1st November.—100 „ „ 5 „

Already there is an appreciable difference in the size of the tumour.

3rd November.—100 milliampères for 5 minutes.

5th „ 100 „ „ 5 „

12th „ 100 „ „ 7½ „

The period is over. There was less discharge than for some time, and the patient does not feel so exhausted as usual.

15th November.—100 milliampères for 5 minutes.

17th „ 100 „ „ 5 „

19th „ 100 „ „ 5 „

The tumour is slowly diminishing in size, and the patient feels stronger.

22nd November.—100 milliampères for 5 minutes.

24th „ 100 „ „ 5 „

26th „ 140 „ „ 5 „

Gaiffe's galvanometer was used to-day for the first time.

1st December.—120 milliampères for 5 minutes.

3rd „ 210 „ „ 5 „

There is a marked lessening in the size of the tumour.

10th December.—180 milliampères for 5 minutes.

A fairly easy period is over.

13th December.—225 milliampères for 5 minutes.

15th " 115 " " 8 "

17th " 230 " " 10 "

There is a decided improvement in every respect.

Extracts from husband's letters:—

24th January 1888.—"It is now a month since my wife returned from Edinburgh, and time for me to report progress. So far as size of tumour goes, I think that it is less than when you saw her last—not much, but decidedly on the left side. One period has passed, fairly moderate, but followed, as before, by a pretty steady discharge of a chocolate colour. She has complained much of the left iliac pain,—not constantly, but very severe for hours at a time; if anything, less often within the last ten days. Her strength is very far from satisfactory; in fact, she has been able to be out very seldom."

27th October 1888.—"It is now six months since last I wrote to you about my wife's case, and I am anxious to let you know how things have gone. You may remember that then she was having periodic attacks of pelvic pain with raised temperature and a constant brownish discharge from the uterus, usually small in amount, with, at times, great uterine tenesmus and the discharge of large clots. This went on till the end of May, when there was to be felt on the right side a boarding condition of the abdominal wall up to the level of the umbilicus,—in fact, the tumour on that side seemed to be glued into the pelvis and covered with the lymph resulting from these attacks of cellulitis. On the left side the tumour seemed less. Her general condition was very bad. She was very anæmic, and as thin as a whipping-post, and you would have given very little for her chance of recovery. Early in June I removed her carefully to Stonehaven, her native air, and she seemed to pick up from that time on. She had only one attack soon after going there, and since then her recovery has been steady

and satisfactory. I simply trusted to rest and change as you suggested. May, June, and July, there was no period and no discharge of any kind; August, a mere show; September and October, a very moderate and *painless*, and, in fact, *perfectly natural period*. She stayed three and a half months in Stonehaven, and now, since she came home, she feels and looks perfectly well; excellent appetite, and no discomfort of any kind. She has evidently run the gauntlet of severe cellulitis to what is apparently a perfect cure, *i.e.*, she would not know she had or ever had a tumour. The physical examination of the abdomen reveals the tumour very much less in every direction—hardly to be felt on left, and the effused lymph absorbed entirely, so far as palpation can make out. She herself swears by electricity."

CASE XLIX. — Married, age 45, was sent by Dr Dunsmure.

This patient, who was terribly anæmic, had known of the presence of a tumour for seven or eight years. For eight years there have been severe bleedings,—so severe, indeed, that it has on several occasions seemed as if she would die from loss of blood. Her mother says that she has counted as many as one hundred and twenty napkins. The periods last for two weeks, and there is an interval of one week, sometimes two. She is, as might be expected, very weak, and is so breathless that she can scarcely walk. Some years ago a sloughing submucous tumour came away, and there was slight improvement for a short time afterwards.

The tumour is very large and prominent. It extends up under the ribs. The sound enters for at least 9 inches; curiosity ceased at this distance. For the treatment of a tumour bleeding as this one was doing, it was evident that the positive pole would have to be attached to the sound.

25th October 1887.— 35 milliampères for 5 minutes.

27th " 80 " " 5 "

29th October 1887.—100 milliampères for 5 minutes.

1st November. —100 " " 5 "

3rd " 100 " " 5 "

The tumour is slightly movable.

17th November.—80 milliampères for 5 minutes.

There has been a good quantity of blood lost at the period, though it lasted but seven days.

19th November.—80 milliampères for 5 minutes.

22nd " 80 " " 5 "

24th " 80 " " 5 "

29th " 100 " " 5 "

Gaiffe's galvanometer was used to-day.

1st December.—90 milliampères for 5 minutes.

13th " 140 " " 5 "

The period has been much the same as the last. The interval was, however, longer than usual.

15th December.—140 milliampères for 5 minutes.

17th " 150 " " 5 "

20th " 100 " " 8 "

22nd " 140 " " 8 "

24th " 170 " " 5 "

27th " 210 " " 8 "

29th " 230 " " 8 "

12th Jan. 1888.—210 " " 5 "

There has been less discharge than for a long time; and although the flow continued for eleven days, the bleeding ceased nearly every day for several hours.

14th January.—250 milliampères for 5 minutes.

17th " 200 " " 5 "

19th " 200 " " 5 "

21st " 200 " " 5 "

24th " 216 " " 5 "

26th " 160 " " 5 "

There is slight improvement, and the tumour does not now extend upwards under the ribs on the right side.

There was a severe hæmorrhage after this, and the treatment was, on account of other reasons, not resumed before we left Edinburgh.

In September there appeared to be some decided improvement; there was less discharge, and the lady was able to take her food better, and there was not any sickness.

19th January 1889.—The patient is a little better than she was a year ago, and the treatment has at least prevented her getting worse for the last twelve months. She intends, if possible, to come up to London, and by continuing the treatment in her own bed, the progress will be more rapid than when she had to drive more than four miles for each application.

May 1889.—This lady's mother says that she finds a very decided improvement both in the general health and in the quantity of blood lost. A sister was much surprised to find that she was able to walk from the cab into the house, as when she had seen her last, two years before, the patient had to be carried everywhere. The tumour has diminished in a wonderful manner since the treatment was stopped more than a year ago, and it is now not more than half the size it was. It is up to the ribs on the left side, and a hand's-breadth below them on the right, and is freely movable. The abdominal wall is quite fat, and the skin can be pinched up, instead of being tightly stretched over the tumour.

13th May.—130 milliampères for 5 minutes.

15th *„* 140 *„* *„* 5 *„*

17th *„* 130 *„* *„* 5 *„*

20th *„* 140 *„* *„* 5 *„*

The period is due to-day, though since the treatment last year it sometimes does not appear for seventeen, or even eighteen days.

22nd May.—135 milliampères for 5 minutes.

27th May.—130 milliampères for 5 minutes.

29th „ 140 „ „ 5 „

The period came on yesterday, eight days late.

31st May.—135 milliampères for 5 minutes.

3rd June.—140 „ „ 5 „

5th „ 120 „ „ 5 „

This has been the least bad period for a very long time, and the lady was confined for only six days.

7th June.—135 milliampères for 5 minutes.

10th „ 150 „ „ 5 „

12th „ 150 „ „ 5 „

14th „ 170 „ „ 5 „

The tumour is decreasing with great rapidity, and the patient walks about the house more easily.

17th June.—160 milliampères for 5 minutes.

19th „ 165 „ „ 5 „

The patient has been outside for a walk. Two years ago she had to be carried on account of breathlessness.

21st June.—200 milliampères for 5 minutes.

24th „ 150 „ „ 5 „

26th „ 205 „ „ 5 „

28th „ 230 „ „ 5 „

The period is commencing to-day. During the past week the lady has walked more than she has done for five years.

1st July.—230 milliampères for 5 minutes.

3rd „ 200 „ „ 5 „

5th „ 240 „ „ 5 „

9th „ 250 „ „ 5 „

The loss has been comparatively slight.

CASE L.—Single, age 36, was sent into the Royal Infirmary, Edinburgh, in October 1887, by Mr Imlach.

In January of the same year this patient was operated on at the Samaritan Free Hospital, for the purpose of curing

the symptoms due to the presence of a fibroid tumour of the uterus. The operation was evidently removal of the ovaries, and the name of the hospital where it was performed is a sufficient guarantee that it was properly done. From the woman's history, there can be no doubt but that the operation was most certainly justifiable at that time, though now, she might have been cured more certainly and more quickly without having the abdomen opened. It is probable that there was some difficulty experienced in reaching the ovaries, as the cicatrix was of extraordinary length for such an operation.

The patient made a good recovery, and there was not any bleeding for two months. It was not very bad at that time. The flow came on again in April and in May, but in June there was what is described to have been a severe flooding. Medicine was prescribed at the Samaritan Hospital, and the bleeding ceased after this had been taken for ten days. The flooding again returned in the beginning of August, and lasted for the whole of the month. This debilitated her so much that she was unable to follow her employment, that of a lady's maid. In September and October there has been more or less bleeding almost every day, and the woman is now very breathless and anæmic.

The tumour extends to midway between the pubes and umbilicus, is very irregular, and there is a mass pressing down on the bladder. The patient is not very sure whether the growth is smaller or not since the operation, and, as she is not any better, is naturally disappointed. There is great difficulty in getting a sound into the uterine cavity, but it can be passed to a depth of rather more than 4 inches.

25th October 1887.—60 milliampères for 5 minutes.

<i>27th</i>	„	80	„	„	5	„
<i>29th</i>	„	70	„	„	5	„
<i>1st November</i>		80	„	„	5	„
<i>3rd</i>	„	120	„	„	5	„

The patient thinks that she feels a little better.

8th November.—120 milliampères for 5 minutes.

10th " 80 " " 5 "

15th " 85 " " 5 "

There has not been any bleeding since yesterday, and she really feels stronger, and can walk better.

17th November.—85 milliampères for 5 minutes.

19th " 90 " " 5 "

The tumour is not pressing so much on the bladder to-day, and there is consequently less discomfort.

22nd November.—95 milliampères for 5 minutes.

24th " 85 " " 5 "

26th " 100 " " 5 "

Gaiffe's galvanometer was used to-day. There is steady improvement generally, and less bleeding.

29th November.—120 milliampères for 5 minutes.

1st December.—130 " " 5 "

3rd " 110 " " 5 "

6th " 100 " " 5 "

8th " 170 " " 5 "

10th " 135 " " 5 "

13th " 175 " " 5 "

15th " 200 " " 5 "

17th " 165 " " 5 "

20th " 175 " " 5 "

Improvement is steady, and the tumour is becoming smaller. Up till and including to-day the applications have been positive.

22nd December.—170 milliampères for 5 minutes.

24th " 140 " " 5 "

26th " 120 " " 5 "

The sound in the cavity has been attached to the negative pole of the battery at the last three sittings, but the bleeding has recommenced.

28th December.—145 milliampères for 5 minutes.

A return was made to-day to the positive applications, as the bleeding had increased.

30th December.—180 milliampères for 5 minutes.

5th Jany. 1888.—150 " " 5 "

7th " 180 " " 5 "

12th " 150 " " 5 "

14th " 175 " " 5 "

There is a very marked difference in the size of the tumour
The patient feels well.

17th January.—160 milliampères for 5 minutes.

19th " 220 " " 5 "

21st " 210 " " 5 "

24th " 230 " " 5 "

26th " 180 " " 5 "

28th " 200 " " 5 "

31st " 205 " " 5 "

2nd February.—200 " " 5 "

4th " 180 " " 5 "

7th " 185 " " 5 "

There is now little tumour ; the irregular and to a certain extent pediculated growths have almost entirely disappeared.

9th February.—200 milliampères for 5 minutes.

11th " 210 " " 5 "

16th " 200 " " 5 "

18th " 220 " " 5 "

21st " 210 " " 5 "

Says that she feels splendidly well. The cavity measures $3\frac{3}{4}$ inches.

23rd February.—190 milliampères for 5 minutes.

25th " 200 " " 5 "

28th " 200 " " 5 "

1st March. —185 " " 5 "

3rd " 220 " " 5 "

6th " 235 " " 5 "

Says that she now feels quite well.

In May she was in a situation, and was perfectly well.

19th March 1889.—There are still attacks of bleeding at times, though never very severe. The patient has been in a situation and able to do her work since she left Edinburgh. She is not anæmic, and the tumour is found to be smaller than it was a year ago.

6th June.—"I am much better than when I saw you last."

4th July.—There has not been any discharge for three months, and the patient looks and says that she feels perfectly well.

CASE LI.—Married, age 37, came to Edinburgh in October 1887 for the electrical treatment.

The illness has been of long standing—there having been profuse menorrhagia for many years, and the presence of a tumour was noted some eight or ten years ago. She was seen at her home in Newcastle some years ago, and at that time was very ill. There was phlegmasia dolens of both legs, and there were emboli in the lungs. She was at this time in bed for eight months. After this illness there was some improvement in the general health. The tumour is growing steadily. The present condition of the patient is, that she suffers much from the size of the tumour and from the pressure it gives rise to, and the lady is almost entirely unable to walk.

The abdomen is enormously distended by a tumour which must weigh at least thirty pounds; the ribs and sternum are raised all round, and the mass is quite immovable. The sound passes to a depth of 9 inches, and does not then reach to the top of the cavity.

This was a case where it would have been very advisable to treat the patient in her own bed, but we did not then have suitable apparatus for that purpose. She could not walk nor drive, so had to be brought in a Bath chair.

29th October 1887.—40 milliampères for 5 minutes.

31st " 35 " " 5 "

There has been pain in the back since the first application.

2nd November.—40 milliampères for 5 minutes.

4th " 40 " " 5 "

The patient feels stronger already.

7th November.—50 milliampères for 5 minutes.

9th " 80 " " 5 "

11th " 85 " " 5 "

The tumour is looser, and the patient did not feel tired after the last application.

14th November.—80 milliampères for 5 minutes.

16th " 80 " " 5 "

Is walking better, and can go upstairs more easily.

18th November.—80 milliampères for 5 minutes.

26th " 30 " " 5 "

There has been more flow than usual. Gaiffe's galvanometer was used for the first time.

28th November.—80 milliampères for 5 minutes.

30th " 100 " " 5 "

1st December. —110 " " 5 "

Is stronger, and walked a quarter of a mile to-day.

3rd December.—110 milliampères for 5 minutes.

5th " 110 " " 5 "

7th " 125 " " 5 "

9th " 150 " " 5 "

12th " 200 " " 8 "

14th " 210 " " 5 "

16th " 210 " " 10 "

The tumour is slowly decreasing in size.

26th December.—220 milliampères for 10 minutes.

Again a bad period. The tumour is to-day smaller than it has been for many years.

28th December.—175 milliampères for 10 minutes.

30th " 230 " " 10 "

2nd Jan. 1888.—250 milliampères for 10 minutes.

The lady's dresses are all too loose.

4th January.—180 milliampères for 10 minutes.

6th „ 180 „ „ 10 „

9th „ 250 „ „ 10 „

20th „ 185 „ „ 10 „

Another bad period, accompanied by pain. Though the general condition and appearance have much improved, the lady has lost seven pounds in weight since the treatment was begun. She is much pleased with her appearance.

23rd January.—200 milliampères for 10 minutes.

25th „ 220 „ „ 10 „

She had a dress taken in 2 inches.

26th January.—200 milliampères for 10 minutes.

Is to go home for a time and see how she gets on. The tumour is now so freely movable, that it is an annoyance when she turns round in bed. The sound was always made negative.

2nd February.—“ You will have heard from Dr Hume how pleased he was to find me so much better : so most of the friends I have seen think. They see a great change in my figure.”

In July she sent a friend with a large fibroid ; but as menstruation had ceased, and she had begun to improve, treatment was not advised.

25th July.—“ I am a *great* deal better and stronger since I was with you last winter, and have never felt the same inconvenience in breathing that I used to have. The tumour went lower down when with you, and has kept there ; but, as you know, it is a large one yet, and a great burden to me ; also I have just as much discharge as ever.”

The lady came back in October 1888, to try and have the tumour further reduced in size, and also with the hope of being cured of the necessity of having to go to bed for three days every month. The tumour had become smaller since

January, and the lady looked very well. She felt so well also that she proposed to stay with friends at Streatham, and come in three times a week for the treatment. Ordinary persons require to allow themselves seven minutes to walk to the station, but at first Mrs — had to give from fifteen to twenty minutes.

Half an inch of sound was exposed in the cavity of the uterus, and was made positive.

9th October.—100 milliampères for 5 minutes.

<i>11th</i>	„	125	„	„	5	„
<i>13th</i>	„	135	„	„	5	„
<i>15th</i>	„	135	„	„	5	„
<i>17th</i>	„	135	„	„	5	„
<i>19th</i>	„	140	„	„	5	„
<i>21st</i>	„	155	„	„	5	„
<i>24th</i>	„	155	„	„	5	„

Certainly the tumour is smaller.

2nd November.—135 milliampères for 5 minutes.

Not a good period, but looks well.

3rd November.—130 milliampères for 5 minutes.

<i>7th</i>	„	135	„	„	5	„
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Feels that she can walk more lightly.

10th November.—145 milliampères for 5 minutes.

<i>12th</i>	„	165	„	„	5	„
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The lady had a busy day to-day. She left home about half-past ten, arrived at Charles Street about half-past eleven; had the application, rested, and then met a party, composed chiefly of children, and had lunch. After lunch they went to see an afternoon performance of the “Armada” at Drury Lane, and did not get home until nearly seven o’clock.

14th November.—175 milliampères for 5 minutes.

<i>16th</i>	„	150	„	„	5	„
<i>19th</i>	„	150	„	„	5	„
<i>21st</i>	„	150	„	„	5	„

28th November.—150 milliampères for 5 minutes.

As much discharge as usual, but feels better and stronger.

1st December.—140 milliampères for 5 minutes.

3rd " 150 " " 5 "

5th " 135 " " 5 "

7th " 150 " " 5 "

10th " 150 " " 5 "

12th " 150 " " 5 "

Is very well, and can walk to the station in seven minutes like other people.

22nd February 1889.—The lady's husband wrote :—" I am happy to say she continues better, and is able to walk about and see her friends. She considers that she has profited very much by your treatment, and looks forward to still greater progress towards convalescence as the year advances."

27th June.—" I am *very* much better in health, and every one tells me that I have lost that suffering look they say I had. I can walk much farther and quicker, and am altogether nothing like such a burden to myself. The tumour is a good deal less than even when I saw you last (but still it is large). It is lower down, so does not interfere with my breathing."

CASE LII.—Married, age 51, no family.

The patient said, that for fully a year, she had had a constant and profuse discharge, which was usually more or less bloody. It had begun gradually ; at first the regular periods being prolonged, and there was a thick yellowish discharge in the intervals. Gradually the "red" and the "white" became merged together, and the patient was unable to tell whether there were any menstrual flow or not. The general health had naturally been seriously affected, and the lady was thin, nervous, and miserable.

Twelve months before, a diagnosis of malignant disease had been made.

The uterus was found to be large, soft, and to lie very much forwards, and the sound showed that the length of its cavity was 4 inches.

As there did not appear to be sufficient evidence to justify the diagnosis of malignant disease, the patient was advised to try what electricity could do for her relief. She did not bear the current well. The internal electrode of platinum was attached to the positive pole.

29th October 1887.—40 milliampères for 5 minutes.

1st November. —80 " " 5 "

3rd " 80 " " 5 "

5th " 120 " " 5 "

For the first time for a year there had not been any discharge for twenty-four hours.

8th November.—100 milliampères for 5 minutes.

The discharge has begun again, and the patient does not feel as well as she did a couple of days ago.

10th November.—100 milliampères for 5 minutes.

12th " 80 " " 5 "

15th " 80 " " 5 "

17th " 40 " " 5 "

The discharge is more viscid to-day.

19th November.—60 milliampères for 5 minutes.

22nd " 60 " " 5 "

29th " 90 " " 5 "

Gaiffe's galvanometer was used to-day. There is rather less discharge, and the lady feels somewhat stronger.

1st December.—70 milliampères for 5 minutes.

3rd " 80 " " 5 "

There is less discharge, and the patient is feeling decidedly better and has more strength.

8th December.— 75 milliampères for 5 minutes.

10th " 100 " " 5 "

The discharge continues to diminish in quantity, and as the patient feels that she is steadily gaining ground, she wishes to stop treatment, which has been, on account of her nervous state, rather a trial to her.

The subsequent history we have been unable to learn. We had neither taken her name nor address.

CASE LIII.—Married, age 32, came to Edinburgh in November 1887.

Patient was married a year ago, and about the same time a lump, which is steadily increasing in size, was noticed in the abdomen. Menstruation began at the age of 14, and has been always profuse and painful. Of late years there has been decided improvement in the amount of pain, but the quantity of discharge is increasing, and large clots are passed. It is only lately that the menorrhagia has begun to affect the general health.

On examination, the tumour is found to be prominent and to extend up to the umbilicus. The cavity is very wide, and the sound enters to a depth of $8\frac{1}{2}$ inches.

Eighteen negative applications were made.

1st November 1887.—60 milliampères for 5 minutes.

<i>3rd</i>	"	50	"	"	5	"
<i>5th</i>	"	70	"	"	5	"
<i>8th</i>	"	80	"	"	5	"
<i>10th</i>	"	70	"	"	5	"
<i>12th</i>	"	80	"	"	5	"
<i>15th</i>	"	80	"	"	5	"

There is little difference in the size of the tumour, but the patient thinks that she feels somewhat better.

17th November.—80 milliampères for 5 minutes.

<i>19th</i>	"	120	"	"	5	"
<i>26th</i>	"	150	"	"	5	"

There has been much less hæmorrhage this time, and only

two clots. The patient feels much better than usual. Gaiffe's galvanometer used.

29th November.—160 milliampères for 5 minutes.

1st December.—140 " " 5 "

3rd " 150 " " 5 "

6th " 70 " " 5 "

There has been some pain in the tumour, and the current was not well borne to-day.

8th December.—100 milliampères for 5 minutes.

The pain is gone.

10th December.—175 milliampères for 5 minutes.

13th " 175 " " 5 "

15th " 200 " " 5 "

Patient has to go home in the meantime. The pain is quite gone, and she feels very well. The tumour is smaller, but not markedly so.

CASE LIV.—Married, age 34, was seen with Dr Scott of Musselburgh in November 1887.

The lady has not felt well for a number of years, and has suffered much from menorrhagia, from constant pain in the back, and from difficulty in walking; symptoms severe enough to prevent her having much pleasure in her existence.

On examination it was found that the pelvis was filled with a fibroid tumour of the uterus. Twenty-six positive applications were made.

8th November.—40 milliampères for 5 minutes.

10th " 40 " " 5 "

12th " 80 " " 5 "

15th " 80 " " 5 "

17th " 80 " " 5 "

19th " 80 " " 5 "

22nd " 60 " " 5 "

24th " 80 " " 5 "

1st December.—80 " " 5 "

The period is over ; there was more discharge, and the pain was more aggravated than usual.

3rd December.—100 milliampères for 5 minutes.

<i>5th</i>	„	80	„	„	5	„
<i>8th</i>	„	85	„	„	5	„
<i>10th</i>	„	95	„	„	5	„
<i>13th</i>	„	100	„	„	5	„
<i>15th</i>	„	100	„	„	5	„
<i>17th</i>	„	110	„	„	5	„

There is now decidedly less pain in the back, and the lady can walk better.

20th December.—135 milliampères for 5 minutes.

<i>27th</i>	„	110	„	„	5	„
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The period is over ; there has been a marked improvement, both in the quantity of discharge and in the amount of pain.

29th December.—110 milliampères for 5 minutes.

<i>31st</i>	„	120	„	„	5	„
<i>3rd Jan. 1888.</i>		120	„	„	5	„
<i>5th</i>	„	125	„	„	5	„

There is almost no pain, and in every respect the patient feels that there is a great improvement.

7th January.—130 milliampères for 5 minutes.

<i>10th</i>	„	110	„	„	5	„
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The patient has been going about a great deal she says, and there has been more of the backache.

12th January.—130 milliampères for 5 minutes.

The patient is again much better.

14th January.—125 milliampères for 5 minutes.

On 5th February 1889 Dr Scott writes, "She is fairly well, the fibroid has remained quiescent, and there has been no hæmorrhage since you kindly treated her."

CASE LV.—Married, age 28, came to the Woman's Dispensary, Edinburgh, for the electrical treatment in November 1887.

This patient had never been strong, and had suffered from dysmenorrhœa all her menstrual life—the pain being worst on the third day. Some two years before, she had been admitted into the ward of one of the obstetric physicians of the Edinburgh Royal Infirmary, on account of floodings. While in the ward she was pressed to allow the removal of the ovaries ; but a sister, whose ovaries had been removed some years before, persuaded her to go home for a time. She was then admitted into the special ward for the treatment of ovarian disease in the Infirmary. The patient was much emaciated, and no palpable disease of the ovaries or uterus could be detected ; but as there was a copious discharge of blood from the bowel she was sent to the medical house ; after a few weeks she quickly recovered and was discharged. After that time I saw her once or twice. She kept fairly well, and month by month the menstrual loss became less, until June 1887, when she again began to lose too much. There began to be also a constant feeling of weight and pressure on the bladder, and the health began to fail. When I saw her in October there was a swelling attached to the right side of the uterus, falling forward and pressing on the bladder, the size of a small hen's egg. It was so exquisitely tender that one would have been inclined to think that it was an enlarged and inflamed ovary, had it not been possible to feel both those glands. On account of the general debility, and more especially from the great tenderness, I was loth at first to try electricity for fear that the simple passage of the sound might do harm ; but after using hot water and glycerine pads with absolutely no improvement, I thought it best to attempt cure by this means before advising operation. The pain on passing water was said to be excruciating, and often lasted for hours. From her appearance there could be no doubt that she was a great sufferer. The treatment was begun on the 9th November 1887. At that date the uterus

was large, and pushed upwards and towards the left by a tender mass on the right side connected with the fundus, about the size of a flattened out cricket ball. The upper margin was 4 inches above the pubes. The uterine cavity measured $3\frac{1}{2}$ inches. The sound was connected to the positive pole, and on the 9th, 11th, 14th, and 18th November a current of about 40 milliampères was allowed to flow for 3 minutes. The period came on after these four applications. There was more flow and more pain.

28th November.—40 milliampères for 4 minutes.

2nd December. —45 " " 4 "

1st February. —50 " " 4 "

6th " 50 " " 5 "

10th " 60 " " 5 "

13th " 45 " " 5 "

17th " 45 " " 5 "

20th " 40 " " 5 "

22nd " 50 " " 5 "

Although there has been and still is a great deal of pain, it is slowly becoming less. The tumour is smaller and more easily handled.

24th February.—65 milliampères for 5 minutes.

2nd March. —60 " " 5 "

For a few days before the period, which is just over, there was very decidedly less pain; but during the flow the pressure on the bladder was said to be "terrible."

5th March.—60 milliampères for 5 minutes.

7th " 70 " " 5 "

9th " 80 " " 5 "

12th " 75 " " 5 "

14th " 40 " " 5 "

For the first time for many months she was entirely free from pain all day yesterday. The tumour is not half the size it was.

19th March.—50 milliampères for 5 minutes.

21st " 40 " " 5 "

23rd " 100 " " 5 "

26th " 100 " " 5 "

28th " 100 " " 5 "

30th " 110 " " 5 "

31st " 85 " " 5 "

4th April.—55 " " 5 "

The period is over. There has hardly been any of the bladder pain which was so bad last time. A natural period as regards quantity.

5th April.—100 milliampères for 5 minutes.

6th " 110 " " 5 "

In all, thirty applications, the positive electrode being always in the uterine cavity.

There was little tumour remaining ; there was little pain ; there was not any menorrhagia ; and there was marked improvement in the general health and spirits.

In September we heard, through a sister, that the patient had left Edinburgh, but had been very much better, and had simply a little pain every month.

CASE LVI.—Married, age 42, came to the Woman's Dispensary, Edinburgh, on the 11th November 1887.

She had enjoyed the best of health until her sixth and last child was born, seven years before. The labour had been easy, nor had there been any difficulty on the five previous occasions. For those seven years she has been "ill altogether," and suffered from constant and severe pain in the back and left side, aggravated every month at the time of the periods. Two years ago she first noticed a lump in the abdomen, but in spite of this she had undergone a variety of treatment for displacement, no one apparently putting his hand on the abdomen until she was seen by Dr Richardson, who sent her to the dispensary.

Her greatest distress, at the present time, is caused by irritability of the bladder, so great that she is never comfortable for two minutes together. For months she has been up at nights never less often than five times, and during the day is unable to retain more than a tablespoonful of urine at one time. The act of micturition is also accompanied by a very considerable amount of pain. In addition to this most distressing symptom, there is constant pain in the back and sides, and difficulty in walking, due to a terrible feeling of weight and dragging in the pelvis. Latterly the loss of blood every month has been considerable. She is totally unable to take care of her husband, her children, or her house, and has become nervous, irritable, and low-spirited. Fifteen months after this date, when she was well, she told me that she used to become so melancholic before the periods that she felt afraid that she might some day do away with herself. The poor woman has also been unable to sit in a chair for a long time. She looked utterly miserable and depressed.

On examining the abdomen, a mass rising out of the pelvis and extending to within two inches of the umbilicus, was felt with the greatest ease, as the abdominal wall was much emaciated. The cervix was found to be somewhat in front of its natural position, and to be connected with the tumour which had been felt in the abdomen. Posteriorly, the pelvis was filled with another fibroid growth, which distended the posterior fornix. This explains the displacement theory—although the direction of the cervix, etc., showed that the body of the uterus did not lie backwards even before the sound had been passed. The uterine cavity measured rather more than 5 inches, and could be measured without any difficulty.

Treatment.—The mass posterior to the cervix was punctured to the depth of nearly half an inch with an insulated

steel needle the thickness of a No. 2 catheter (English scale). This was done on the 11th, 14th, and 21st November, and a current of electricity of probably from about 60 to 120 milliampères was passed from the abdomen for five minutes. The result of even the first of these applications was almost magical, for at her second visit on the 14th she looked marvellously better; she had lost a great deal of her worn and irritable expression; she had been able to sit on a chair without pain; she had been up but once every night, and could hold her water until the bladder contained a cupful during the day, and then empty it without pain or discomfort. Really the difference this one application made it is impossible to express, and hardly possible to believe, yet there appeared to be no difference in the physical condition. She menstruated after the second application with much greater comfort.

On the 25th and 28th of the month currents of 120 and 105 milliampères were passed as before, except that no puncture was made, the internal electrode being the sound inside the uterine cavity.

2nd December.—130 milliampères for 5 minutes.

5th	„	120	„	„	5	„
9th	„	110	„	„	5	„
16th	„	75	„	„	5	„

Puncture was again made to-day. Both in the abdomen and also in the pelvis it was found that there was a marked diminution in the size of the growths.

6th January 1888.—110 milliampères for 5 minutes.

13th	„	125	„	„	5	„
16th	„	155	„	„	5	„
20th	„	130	„	„	5	„
25th	„	155	„	„	5	„
27th	„	145	„	„	5	„

The improvement during the month has been entirely satisfactory. She now sleeps all night without waking.

On pressing deeply in the abdomen no tumour can now be felt, and the uterine cavity measures 3 inches.

6th February.—160 milliampères for 5 minutes.

<i>10th</i>	„	150	„	„	5	„
<i>13th</i>	„	150	„	„	5	„
<i>17th</i>	„	185	„	„	5	„
<i>20th</i>	„	155	„	„	5	„
<i>24th</i>	„	170	„	„	5	„

Feels always at her best on the day that she has treatment. The amount of blood lost at the period has been less.

2nd March.—80 milliampères for 5 minutes.

<i>5th</i>	„	220	„	„	5	„
<i>9th</i>	„	125	„	„	5	„
<i>12th</i>	„	130	„	„	5	„

For the last few days there has again been frequent desire to micturate, with discomfort, and accompanied by the presence of urates in the water.

19th March.—160 milliampères for 5 minutes.

<i>21st</i>	„	150	„	„	5	„
<i>2nd April.</i>	„	170	„	„	5	„

On account of the bladder irritation, the positive pole was placed in the uterus, and the urethra was slightly dilated with a bougie on one occasion.

4th April.—140 milliampères for 5 minutes.

<i>6th</i>	„	150	„	„	5	„
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A return was made to the negative pole in the uterus. The patient now feels almost quite well; there is very little pain, no bladder irritation, no sleeplessness; little difficulty in walking, and she can do and has been doing all her house-work for the last two months.

Thirty applications in all were made. In twenty-three the internal pole was the negative sound in the uterine cavity, in four the negative needle in the tumour, and in three the positive sound in the cavity.

The local result was, that the uterus had returned to its natural size, and that there was a pediculated fibroid mass in the pouch of Douglas, not half as large as it had been before.

Condition on the 19th January 1889, nine and a half months after the last application. In a word, she is quite well, she has no pain, no difficulty in sitting nor in walking, no trouble with the bladder, and can pass water as well as she ever did in her life. There is not any menorrhagia, and the melancholic condition has disappeared. Occasionally there is a little headache. She said to me, "I was just thinking to-day how well I am. You don't know what you have done for me; I am in a different world altogether, and can do everything for myself."

CASE LVII.—Married, was sent to Edinburgh by Dr Napier of Glasgow in November 1887.

The patient had been married for fourteen years, and had not had any family. She had enjoyed very good health until about fifteen months ago, when, on account of increased loss at the menstrual period, she was examined by Dr Napier, who felt the tumour. Though this was growing rapidly, and the menorrhagia, accompanied by pain, was increasing, the patient would not have any but ordinary treatment, until she became alarmed by an attack of peritonitis, which confined her to bed for three weeks. On her recovery she came through to Edinburgh. The tumour extended upwards to the level of the umbilicus.

Thirty negative applications were made in twelve weeks.

15th November 1887.—40 milliampères for 5 minutes.

17th	"	65	"	"	5	"
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19th	"	80	"	"	5	"
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The tumour has begun to diminish in size.

22nd November.—85 milliampères for 5 minutes.

24th	"	90	"	"	5	"
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26th November.—115 milliampères for 5 minutes.

The patient does not feel very comfortable to-day. Gaiffe's galvanometer was used.

29th November.—75 milliampères for 5 minutes.

6th December.—85 " " 5 "

The menstrual flow is over; there has been more discharge than usual and less pain.

8th December.—100 milliampères for 5 minutes.

10th " 100 " " 5 "

13th " 120 " " 5 "

15th " 135 " " 5 "

17th " 100 " " 5 "

There is some pain in the tumour to-day; not severe enough to prevent the patient coming for treatment.

20th December.—135 milliampères for 5 minutes.

The pain, which was complained of three days ago, was dissipated by the passage of the current.

22nd December.—140 milliampères for 5 minutes.

24th " 120 " " 5 "

3rd Jan. 1888.—110 " " 5 "

The patient has been home for Christmas, and while there had a very satisfactory period.

5th January.—115 milliampères for 5 minutes.

7th " 145 " " 5 "

10th " 125 " " 5 "

12th " 150 " " 5 "

The tumour is very much smaller, is quite movable from side to side, and the abdomen is now quite flat.

14th January.—100 milliampères for 5 minutes.

17th " 150 " " 5 "

19th " 135 " " 5 "

28th " 125 " " 5 "

There has been rather more discharge than at the last period. The patient feels well.

31st January.—135 milliampères for 5 minutes.

2nd February.—135 milliampères for 5 minutes.

4th „ 145 „ „ 5 „

7th „ 130 „ „ 5 „

9th „ 130 „ „ 5 „

The tumour is not half the size it was ; instead of filling the lower half of the abdomen, it can now be felt with some little difficulty as a loose, movable body.

September.—Heard that the patient was very well, and that the tumour had got smaller since she was last seen in February.

CASE LVIII.—Married, age 33, was sent into the Royal Infirmary, Edinburgh, by Dr Morgan of Sunderland in May 1886.

The patient had been suffering for the past five years from the effects of excessive losses of blood at the monthly periods. For the same length of time she had been aware of the presence of a tumour in the abdomen.

On examination, the tumour was found to extend to mid-way between the pubes and the umbilicus, and to be situated rather more on the left than on the right side. The pelvis was packed with the mass, which extended on both sides to the pelvic wall, and filled up the entire hollow of the sacrum. It was evident that the tumour itself could not be removed, so it was agreed to take away the ovaries, if possible. The left one was to be felt high up on the side of the tumour. On the right side there was a tender spot, but no trace of ovary could be found.

The operation was performed on the 24th May in the presence of Dr Morgan, Dr Price of Philadelphia, Dr Hodsdon, and others. There was a layer of 1 inch of fat on the abdominal wall. The omentum was found to be spread out over the tumour, and to be adherent to it, and with some difficulty the left ovary was got hold of. The incision was enlarged, and it was drawn well into view.

The ovary appeared to be fairly healthy, and the tube was dilated to about the size of one's thumb. The broad ligament was transfixed as close to the uterus as possible, tied, and the parts removed. The right ovary was found to be situated deeply in the pelvis enclosed in the layers of the broad ligament. By drawing up the tumour and then throwing the light into the pelvis by means of the reflector, it was seen where the ovary was. Running over it towards the bladder, which was drawn up and displaced to the right side, the ureter was detected. Under the circumstances it was thought best to make no attempt at removal. The patient went home in three weeks.

November 1887.—The patient has come back for the electrical treatment. At first, after the operation, there was a decided improvement, but for some months she has had severe losses of blood, lasting for a week, and recurring after another week's interval. She is now more anæmic and weak than she was before the operation in 1886. The tumour is both larger and harder, and reaches up to the level of the umbilicus. A sound passes $6\frac{1}{2}$ inches.

The treatment consisted in thirty-six positive applications.

15th November.—35 milliampères for 5 minutes.

17th " 40 " " 5 "

19th " 65 " " 5 "

24th " 65 " " 5 "

The period has been much as usual, except that it was one day shorter, and she was in bed for four days only.

26th November.—125 milliampères for 5 minutes.

Gaiffe's galvanometer was used to-day.

29th November.—110 milliampères for 5 minutes.

1st December.—125 " " 5 "

3rd " 150 " " 5 "

6th " 175 " " 5 "

13th " 165 " " 5 "

The period has not been any worse than the last one.

The interval was twelve days, a gain of five.

15th December.—220 milliampères for 5 minutes.

17th " 160 " " 5 "

20th " 200 " " 5 "

22nd " 200 " " 5 "

24th " 125 " " 5 "

28th " 160 " " 5 "

The patient's husband has been to see her, and says that he notices a great difference in her strength and appearance.

30th December.—160 milliampères for 5 minutes.

12th Jan. 1888.—200 " " 5 "

After an interval of eighteen days, the third period since the treatment was begun came, and was very much the same as the last two.

14th January.—155 milliampères for 5 minutes.

17th " 140 " " 5 "

19th " 165 " " 5 "

21st " 165 " " 5 "

24th " 170 " " 5 "

26th " 175 " " 5 "

28th " 175 " " 5 "

4th February.—170 " " 5 "

There was a marked improvement in the menstrual flow this time. The interval was two days shorter than the previous one; but the quantity of discharge was very much less, and the patient had to keep in bed for only one day. The tumour is more movable, and its upper line is an inch below what it was.

7th February.—130 milliampères for 5 minutes.

9th " 175 " " 5 "

11th " 215 " " 5 "

16th " 130 " " 5 "

18th " 120 " " 5 "

23rd " 110 " " 5 "

1st March.—140 milliampères for 5 minutes.

A perfectly natural period has been got over, during which the patient did not require to go to bed.

3rd March.—140 milliampères for 5 minutes.

6th „ 190 „ 5 „

The tumour is now 2 inches below the umbilicus and is more lobulated. The patient says that she feels well and strong.

On 11th June 1889 Dr Morgan wrote:—“She is looking a great deal better, and has lost the anæmic appearance which she had. She says that there has been no flooding for twelve months. She is quite regular in her periods, and the discharge is natural and painless; and this has been the case since about four months after the ceasing the treatment. The tumour is much the same as when I last examined her—a large globular mass, tender in parts on pressure, and as big as a five-months’ pregnant uterus. Mrs M. had just been changing her residence when I called, and I found her working. She says she has no more difficulty than she had seven years ago, when her trouble first commenced, and can work all day without distress.”

CASE LIX.—Married, age 46, came to Edinburgh in November 1887.

Eleven years ago this lady consulted Dr Keith on account of a bleeding fibroid tumour. Until three years ago, the bleeding became more and more profuse and very painful. About this time a mass of tumour was passed *per vias naturales*, and there has been some amelioration of the symptoms since then. The periods last ten, eleven, or twelve days, and the discharge is very great. They recur at regular intervals of four weeks, the patient thus being clear for between a fortnight and three weeks. There is constant pain in the right side.

The tumour is found to extend up to the umbilicus, and

is decidedly prominent. The cavity measures 5 inches. The patient is soft and anæmic.

22nd November.—95 milliampères for 5 minutes.

25th " 100 " " 5 "

28th " 125 " " 5 "

29th " 165 " " 5 "

13th December.—130 " " 5 "

The period has been rather better than usual.

15th December.—115 milliampères for 5 minutes.

17th " 120 " " 5 "

20th " 250 " " 5 "

22nd " 250 " " 5 "

24th " 200 " " 5 "

26th " 85 " " 5 "

7th Jan. 1888.—210 " " 5 "

A specially bad period is over.

10th January.—130 milliampères for 5 minutes.

12th " 175 " " 5 "

14th " 175 " " 5 "

17th " 175 " " 5 "

19th " 175 " " 5 "

Is at last beginning to feel a little better and stronger.

21st January.—160 milliampères for 5 minutes.

31st " 200 " " 5 "

The period has not been quite so bad as the last.

2nd February.—200 milliampères for 5 minutes.

4th " 200 " " 5 "

7th " 175 " " 5 "

9th " 150 " " 5 "

11th " 170 " " 5 "

23rd " 200 " " 5 "

The period lasted but three days; there was little discharge, and the patient feels well.

23rd February.—200 milliampères for 5 minutes.

25th " 150 " " 5 "

28th February.—150 milliampères for 5 minutes.

1st March. —160 " " 5 "

3rd " 150 " " 5 "

As there had been little diminution in the size of the tumour, the sound, instead of being made positive, as it had been up till now, was made negative.

6th March.—170 milliampères for 5 minutes.

13th " 130 " " 5 "

The period has been got over a week too soon. It was bad for only two days.

15th March.—150 milliampères for 5 minutes.

17th " 150 " " 5 "

20th " 150 " " 5 "

22nd " 165 " " 5 "

24th " 160 " " 5 "

26th " 160 " " 5 "

Since beginning the use of the negative pole inside the uterine cavity, there has been a marked lessening of the bulk of the tumour, and it is now not much more than half the size it was in November of last year.

CASE LX.—Married, age 51; came to the Woman's Dispensary, Edinburgh, on the 28th November 1887.

She has had three children and three mishaps, the last having taken place ten years ago. The death of one of her three sisters was caused by the presence of an abdominal tumour. Little information could be got about this tumour, except that it had not caused any hæmorrhage.

The patient herself is fat and anæmic. She says that two years ago she began to lose too much at her periods, but thought little of it until six months ago, when she felt that the increased loss of blood was beginning to tell seriously on her health. Now she feels that she can work no longer, and, if nothing can be done, that she must give up her situation of a Bible-woman. Some years ago the

periods lasted five days ; the usual length is now two weeks, and the last one continued for three weeks. In addition to the increasing debility, there is great feeling of heat and itching in the vagina.

On examination, a firm, smooth tumour, situated exactly in the centre of the lower part of the abdomen, was to be felt reaching up to within $1\frac{1}{2}$ inches of the umbilicus. The cervix was in its natural position, and the sound passed easily to a depth of 7 inches. There was nothing seen in the vagina to account for the irritation.

Treatment.—7 inches of the sound attached to the positive wire were exposed, and the instrument inserted into the uterine cavity.

28th November.—70 milliampères for 5 minutes.

2nd December.—90 " " 5 "

5th " 85 " " 5 "

9th " 85 " " 5 "

12th " 60 " " 5 "

16th " 100 " " 5 "

6th Jan. 1888.—140 " " 5 "

The irritation in the vagina has entirely disappeared, and there has not been any hæmorrhage from the uterus for eight weeks.

23rd January.—105 milliampères for 5 minutes.

27th " 100 " " 5 "

30th " 125 " " 5 "

The period came on on the 7th, and lasted fourteen days. To-day she says that she has not felt so well for about a year.

5th February.—100 milliampères for 5 minutes.

8th " 105 " " 5 "

10th " 120 " " 5 "

13th " 100 " " 5 "

To-day she feels fit for work, and said, "I can do up my fireside in a different way."

17th February.—165 milliampères for 5 minutes.

20th " 240 " " 5 "

Is now 8 inches less round the middle than she was three months ago. She can now button her boots, a thing she has not been able to do for eighteen months.

22nd February.—210 milliampères for 5 minutes.

24th " 195 " " 5 "

27th " 225 " " 5 "

29th " 210 " " 5 "

Felt so well that she did a washing yesterday, but is not any the better to-day for doing it.

2nd March.—225 milliampères for 5 minutes.

5th " 220 " " 5 "

7th " 210 " " 5 "

9th " 150 " " 5 "

As the period has been due for ten days, and as, in consequence, there is considerable feeling of fulness and discomfort, the wire from the negative pole of the battery was on this and all subsequent occasions attached to the sound in the cavity of the uterus.

12th March.—240 milliampères for 5 minutes.

14th " 235 " " 5 "

19th " 250 " " 5 "

A natural period, lasting four days, has given great relief.

21st March.—225 milliampères for 5 minutes.

23rd " 240 " " 5 "

28th " 225 " " 5 "

30th " 245 " " 5 "

31st " 240 " " 5 "

2nd April. —240 " " " 5 "

3rd " 250 " " 5 "

6th " 225 " " 5 "

Thirty-five applications in all—twenty-three positive and twelve negative. Patient feels quite well, and the tumour

is not larger than half the size it was before the treatment was begun. In September was quite well, and able to do anything as well as she ever could in her life.

CASE LXI.—Single, age 41, was sent to Edinburgh by Dr Bannerman from Hawick, and was treated at the Woman's Dispensary.

Eight years ago she had seen Dr Keith on account of a small fibroid tumour of the uterus which had been accidentally discovered. It was at that time giving rise to no symptoms, and she was advised to leave it alone, unless it began to give trouble. For some years the tumour did not affect her in the slightest degree; but lately it has been growing more rapidly, and the patient has become very breathless, partly due to the pressure upwards of the mass, but principally on account of anæmia. This anæmia is due to a very considerable augmentation in the quantity of blood lost while menstruating, the periods lasting eight or ten instead of four days, and to the drain of a constant leucorrhœal discharge.

On examination, a softish tumour of probably 14 or 16 lb. in weight was felt filling the abdomen and distending the flanks very considerably. On the right side it reached up to the ribs; on the left it was about one finger's breadth below their margin. The cavity measured 4 inches.

The treatment consisted as usual in the passage of the electrical current through the tumour. The negative electrode was always placed in the uterine cavity.

30th November 1887.—60 milliampères for 5 minutes.

5th December —90 " " 5 "

Has begun to take steel drops.

7th December.—65 milliampères for 5 minutes.

9th " 150 " " 5 "

The tumour is decidedly smaller, and the patient says that "she feels fine."

12th December.—140 milliampères for 5 minutes.

14th " 135 " " 5 "

16th " 140 " " 5 "

19th " 130 " " 5 "

22nd " 110 " " 5 "

6th Jan. 1888.—200 " " 5 "

The tumour is much smaller ; it does not reach to within three fingers' breadths of the costal margin on the left side. The menstrual loss has been much less, and she feels better.

8th January.—190 milliampères for 5 minutes.

10th " 210 " " 5 "

13th " 80 " " 5 "

For some reason, which was not evident, the application was badly borne to-day.

16th January.—155 milliampères for 5 minutes.

18th " 180 " " 5 "

20th " 205 " " 5 "

23rd " 150 " " 5 "

Is not so breathless, and has a little more colour. Has begun to take a few drops of liquor arsenicalis along with the iron.

25th January.—155 milliampères for 5 minutes.

27th " 110 " " 5 "

30th " 120 " " 5 "

1st February.—155 " " 5 "

3rd " 150 " " 5 "

6th " 150 " " 5 "

8th " 100 " " 5 "

10th " 100 " " 5 "

13th " 100 " " 5 "

17th " 165 " " 5 "

20th " 125 " " 5 "

22nd " 140 " " 5 "

There were twenty-nine applications of an average strength of 136 milliampères.

The breathing has been steadily improving, and there is now little shortness of breath. The patient feels and looks very well, and the tumour has diminished in size very much. It does not extend outwards on either side as far as the iliac spine, and its upper margin is barely above the umbilicus.

Dr Bannerman wrote on the 11th July 1888,—“With regard to Miss —, I do not think that there is any alteration in size, although it has certainly ceased growing since she left your care. Menstruation is regular, although the quantity is smaller and pale in colour. Her general health is below par.

CASE LXII.—Single, age 45 ; was sent to Edinburgh to have a tumour removed, which was supposed to be ovarian, in the beginning of December 1887.

The history of this case was obscure, and the tumour was noticed only a few weeks ago. For twelve years there has been a watery discharge, and there has been a great deal of abdominal pain for a year. This pain is becoming steadily worse. There is not any menorrhagia.

The patient was a tall woman, with a peculiar brownish complexion. She was much emaciated, and this symptom had been marked comparatively recently. On examining the abdomen, the skin was found to be tightly stretched over a very large prominent tumour, which extended up under the costal margins at both sides. The tumour itself was extremely soft, and must have weighed from twenty to thirty pounds. An ordinary Duncan's sound could be passed for its whole length into the cavity. The tumour was evidently uterine, and possibly malignant.

8th December.—60 milliampères for 5 minutes.

The passage of the sound started a very brisk hæmorrhage.

10th December.—150 milliampères for 5 minutes.

13th " 250 " " 5 "

17th " 260 " " 5 "

20th " 250 " " 5 "

At the first four applications the sound was made positive; to-day it was negative. The patient complains of pain in the back of a neuralgic character. This pain wakes her about four o'clock in the morning, and lasts for ten or twelve hours. It is not any better nor any worse after the applications. There is less watery discharge.

22nd December.—230 milliampères for 5 minutes.

24th " 250 " " 5 "

29th " 300 " " 8 "

The lady has had a slight feverish attack. The tumour is immensely smaller, and the breadth of the hand can be placed between it and the ribs on the right side.

31st December.—210 milliampères for 5 minutes.

3rd Jany. 1888.—225 " " 5 "

5th " 260 " " 5 "

7th " 275 " " 10 "

There has been less pain, and it does not begin so early in the morning, and does not last so long.

10th January.—275 milliampères for 10 minutes.

12th " 275 " " 7 "

14th " 300 " " 10 "

There is now little pain. The lady says that she feels stronger, and that she can walk with more ease and comfort.

17th January.—310 milliampères for 10 minutes.

19th " 300 " " 10 "

An increase in the pain to-day.

21st January.—290 milliampères for 10 minutes.

24th " 300 " " 8 "

26th " 290 " " 12 "

28th " 275 " " 12 "

31st " 290 " " 10 "

There is again less pain.

2nd February.—300 milliampères for 10 minutes.

<i>4th</i>	„	275	„	„	10	„
<i>7th</i>	„	300	„	„	10	„
<i>9th</i>	„	275	„	„	10	„
<i>11th</i>	„	275	„	„	10	„
<i>14th</i>	„	275	„	„	10	„
<i>16th</i>	„	275	„	„	10	„
<i>18th</i>	„	250	„	„	10	„

Until yesterday there had been a gradual lessening of the pain. To-day it is again severe.

23rd February.—250 milliampères for 10 minutes.

The sound was made positive.

25th February.—225 milliampères for 10 minutes.

The pain was decidedly better yesterday ; to-day it is as bad as ever.

25th February.—250 milliampères for 10 minutes.

Less pain.

28th February.—250 milliampères for 10 minutes.

The pain is again severe. The tumour is very much smaller, but the pain has prevented much, if any, improvement in the general condition. Quinine in large doses and other drugs gave no relief.

In September the lady was seen by the nurse, who found her at that time much improved, with the tumour continuing to diminish, with little pain, but still profuse leucorrhœa. When she was written to, as we had heard nothing of her for some months, the sister wrote to say that she had died in April 1889, but did not give any indication of what had been the cause of death.

CASE LXIII.—Married, aged 38, was sent by Dr Brumell, Morpeth, in December 1887.

The history was as follows:—About three years ago the patient began to lose too much blood at the periods, and

to have in addition intermenstrual discharges. This went on for a year without there being much pain or discomfort. Pain of a bearing down character then began to be felt, and was described as being terrible. At first it came only with the periods, but for some time it has been constant, and her friends say that she often suffered dreadfully. The bleedings, for the past year or eighteen months, have been most alarming; and during them the patient has had to lie absolutely quiet in bed, as the slightest movement would bring on a great rush of blood. For a long time she has been unable to walk, and for the last six months there has been great difficulty in keeping down food. For some months the discharge has been most offensive, and it has been difficult to remain in the same room with her. For a fortnight the catheter has been required, as the patient has been unable to pass water.

When the patient arrived in Edinburgh on the 7th of December, she appeared to be dying of blood poisoning. On entering the room the smell was most offensive. She was emaciated, she was vomiting, and her general appearance was very bad. She looked as if she would not live more than a few weeks. On examining the abdomen, a large, prominent tumour extending to 2 inches above the umbilicus was felt. It was not possible to make a vaginal examination, as a sloughing mass of tumour filled the passage and extended for fully a couple of inches outside. The mass of tumour had evidently distended the cervix to its fullest extent. It was dying, and was poisoning the patient. The operation of enucleation did not present much hope, if any, of a satisfactory result, more especially as the patient had a small pelvis; but as the lady was certain to die soon if nothing were done, it was thought fair to experiment on her with electricity.

9th December.—60 milliampères for 5 minutes.

The central part of the mass, situated outside the vagina,

was punctured to the depth of half an inch, and the needle made negative.

11th December.—275 milliampères for 5 minutes.

13th " 190 " " 5 "

15th " 250 " " 8 "

There is already a great improvement; the patient can now pass her water; there is less smell, and the tumour has receded into the vagina.

21st December.—200 milliampères for 8 minutes.

There has been a menstrual period, with less pain and less flow than usual.

23rd December.—250 milliampères for 8 minutes.

25th " 260 " " 15 "

27th " 250 " " 10 "

Is feeling greatly relieved, and the tumour is smaller below.

28th December.—240 milliampères for 10 minutes.

30th " 230 " " 12 "

The effect of the puncture and the passage of the electrical current seems to have been to concentrate the sloughing at one spot, and to render healthy the surrounding parts of the tumour, which were previously in a dying condition. A piece of slough came away to-day. The general state of the patient is much improved, and she has lost the pyæmic appearance which she had two or three weeks ago.

1st January 1888.—250 milliampères for 15 minutes.

3rd " 240 " " 15 "

7th " 250 " " 10 "

The period has lasted for one day only. There has not been any vomiting nor feeling of sickness for fully a week, and the patient says that she feels much stronger, though still unable to walk more than a few yards.

10th January.—260 milliampères for 10 minutes.

12th " 240 " " 10 "

14th " 260 " " 10 "

17th January.—240 milliampères for 10 minutes.

19th " 240 " " 10 "

21st " 245 " " 12 "

There has been a return of the bearing-down pain, and some small pieces of slough have come away.

24th January.—255 milliampères for 10 minutes.

28th " 240 " " 10 "

A slight period is again over. The tumour is smaller and flatter above, and is a couple of inches within the vagina.

31st January.—235 milliampères for 10 minutes.

2nd February.—230 " " 10 "

7th " 235 " " 10 "

Gave chloroform two days ago and removed a large slough, which has given rise to considerable smelling discharge. To-day there is scarcely any smell.

9th February.—230 milliampères for 10 minutes.

11th " 230 " " 10 "

14th " 225 " " 10 "

16th " 225 " " 10 "

Several sloughs the size of the finger have come away. The patient feels well.

18th February.—225 milliampères for 10 minutes.

21st " 225 " " 10 "

23rd " 225 " " 10 "

25th " 225 " " 10 "

28th " 230 " " 10 "

1st March. —225 " " 10 "

The period came on, with great pain and retention.

9th March.—Ether; several sloughs were removed. It was never possible to attempt the removal of sloughs, except while the patient was anæsthetized, as the vagina was so tender that it was always even difficult to get the needle into the tumour.

29th March.—225 milliampères for 30 minutes.

31st March.—210 milliampères for 20 minutes.

2nd April.— 260 " " 20 "

4th " 260 " " 20 "

6th " 260 " " 15 "

The patient is now immensely better in every way. There has been less pain, less menstrual discharge; no intermenstrual discharge; no blood poisoning; lessening in size of the tumour, and great improvement in the health and strength. Instead of causing the tumour to slough, it has almost stopped this process. Certainly without electricity the patient would have been dead months ago.

The lady came up to town in the end of May, and said that during the last two months she had been very well, and there had not been a period.

1st June.—200 milliampères for 5 minutes.

4th " 200 " " 10 "

8th " 200 " " 10 "

11th " 200 " " 10 "

Is very well, and is able to be out in the park every day. Some large sloughs have come away.

13th June.—220 milliampères for 5 minutes.

15th " 225 " " 10 "

16th " 210 " " 10 "

18th " 170 " " 10 "

20th " 170 " " 10 "

22nd " 170 " " 10 "

23rd " 150 " " 10 "

24th.—A large slough was removed.

29th June.—150 milliampères for 10 minutes.

The platinum-pointed sound was pushed well into the mass.

1st July.—150 milliampères for 10 minutes.

2nd " 150 " " 10 "

4th " 250 " " 10 "

6th " 270 " " 10 "

The water had to be drawn off yesterday, as the urethra had become blocked by the descent of the tumour. It has gone up again to-day.

7th July.—200 milliampères for 10 minutes.

11th „ 200 „ „ 10 „

The period has lasted but two days. The sound was pushed to a depth of 6 inches into the tumour.

16th July.—150 milliampères for 10 minutes.

19th „ 125 „ „ 10 „

20th „ 125 „ „ 10 „

21st „ 125 „ „ 10 „

24th „ Removed a mass of dry, firm slough.

1st August.—100 milliampères for 5 minutes.

13th „ 100 „ „ 5 „

16th „ 100 „ „ 5 „

20th „ 100 „ „ 10 „

23rd „ 100 „ „ 10 „

25th „ Again removed a mass of slough.

2nd September.—100 milliampères for 10 minutes.

4th „ 100 „ „ 10 „

5th „ 100 „ „ 10 „

7th „ 150 „ „ 10 „

9th „ 100 „ „ 10 „

10th „ 100 „ „ 10 „

12th „ 100 „ „ 10 „

17th „ 100 „ „ 10 „

18th „ 100 „ „ 10 „

20th „ 125 „ „ 10 „

21st „ 100 „ „ 10 „

22nd „ 100 „ „ 10 „

24th „ 100 „ „ 10 „

26th „ 100 „ „ 10 „

After great bearing-down pain a mass of tumour, the size of a foetal head, was extruded from the vagina, and was removed under chloroform.

12th October.—100 milliampères for 10 minutes.

13th	„	100	„	„	10	„
15th	„	100	„	„	10	„
16th	„	100	„	„	10	„
18th	„	100	„	„	10	„
19th	„	100	„	„	10	„
20th	„	100	„	„	10	„
22nd	„	100	„	„	10	„
23rd	„	100	„	„	10	„
24th	„	100	„	„	10	„

The tumour has again come low down, but does not project beyond the vagina. It has now the appearance of an ordinary healthy submucous fibroid, and it is worthy of note that the electrical treatment has stopped the sloughing and putridity of the growth, and instead of causing blood poisoning, has been the means of curing it.

26th October. —100 milliampères for 10 minutes.

29th	„	100	„	„	10	„
30th	„	100	„	„	10	„
31st	„	100	„	„	10	„
2nd November.	„	100	„	„	10	„
3rd	„	100	„	„	10	„
5th	„	100	„	„	10	„
9th	„	100	„	„	10	„
10th	„	100	„	„	10	„
13th	„	100	„	„	10	„
14th	„	100	„	„	10	„
15th	„	100	„	„	10	„
23rd	„	100	„	„	10	„
24th	„	100	„	„	10	„
26th	„	100	„	„	10	„
28th	„	100	„	„	10	„
30th	„	100	„	„	10	„
1st December.	„	100	„	„	10	„
3rd	„	100	„	„	10	„

5th December.—100 milliampères for 10 minutes.

Three attempts to remove the tumour entirely have been made since the sloughing ceased, but on account of the narrow pelvis and the great vascularity of the growth this was not accomplished.

The patient is at present at home in the country, and is to return when the tumour begins to give rise to any trouble. There were not more than two or three periods during the whole course of the treatment, but since she has been at home they have been coming regular and of normal quantity, and are not accompanied by pain.

CASE LXIV.—Single, age 34.

December 1887.—The patient has known of a swelling in the abdomen for the past two and a half years, which has in itself given her little inconvenience, and there has not been any menorrhagia. For some months, she has been much troubled by sickness, and says that she vomits all the food she takes in the forenoon.

On examination a tumour is felt, which extends up to the level of the umbilicus, and which is almost entirely confined to the left side of the abdomen. It is also felt in the pelvis, and continuous with the uterus. The uterine cavity is not enlarged.

13th December.—115 milliampères for 5 minutes.

15th „ 115 „ „ 5 „

17th „ 115 „ „ 5 „

20th „ 130 „ „ 5 „

The four applications were made with the sound negative. The patient was not heard of for some little time, and when she returned she said that she had not been feeling well. She was feverish, and there was an increase of swelling in the pelvis, though the abdominal swelling had much decreased in size. As she was not comfortable at home she was admitted into the Royal Infirmary. For some weeks the

temperature kept up, usually from 100° to 102° , with pulse 110 to 120. She was kept quiet in bed and gradually improved, and was able to leave hospital in good health and with scarcely a trace of tumour to be found.

CASE LXV.—Single, age 39, was brought by Dr Struthers of Leith in the beginning of January 1888.

This patient says that for nearly twelve years she has lost more blood during her menstrual periods than she had done for the few years before that time ; but it was not until four and a half years ago that the bleeding came to be really excessive and severe enough to render it necessary for her to keep in her bed for a day or two every month. Some six months after this, a tumour was first noticed in the abdomen. For some years, there has been somewhat severe pain complained of, for the first few days of the menstrual flow. For the last two years all her symptoms have been much aggravated ; the tumour has increased with great rapidity ; the loss of blood every month has become very great, lasting for fourteen days, and so severe, that the patient has to lie in bed for at least one week out of every four, or in other words, for three months out of every year. The pain has become worse, and there is at all times, a most profuse white discharge. The general health has suffered greatly ; there is marked anæmia, there is debility, there is breathlessness, and the feet and legs are swollen, even after lying in bed. The patient considers that she is more pulled down by the white than by the red discharge. No measurements were taken, but before treatment a 30-inch pair of stays could not be put on.

On examination the patient is seen to be a dark sallow woman, and markedly anæmic. The abdomen is filled and distended by a soft tumour of the uterus, which has raised up the ribs on both sides with the sternum. The uterine cavity was very large, a sound being passed to a depth of

ten inches, and even then it did not meet with any obstruction.

The tumour was evidently a soft fibroid tumour of the uterus, but there were not any cysts to be felt.

The negative pole of the battery was at every sitting connected to the internal electrode.

4th January 1888.—100 milliampères for 5 minutes.

7th " 150 " " 5 "

10th " 150 " " 5 "

12th " 200 " " 5 "

The tumour is scarcely so tightly fixed above and is slightly movable.

14th January.—235 milliampères for 5 minutes.

17th " 200 " " 5 "

The effect of the treatment is beginning to be felt in increased ease and comfort in walking.

19th January.—250 milliampères for 5 minutes.

21st " 350 " " 5 "

She told us to-day that she had been able to put on a dress which was too tight to be worn, in the summer of last year.

24th January.—200 milliampères for 5 minutes.

26th " 250 " " 5 "

9th February.—220 " " 5 "

The first period since the commencement of the treatment is over, and, although the quantity of blood lost was much the same as usual, it was not found necessary to stay in bed for longer than two days, instead of the usual seven.

9th February.—300 milliampères for 5 minutes.

11th " 260 " " 5 "

14th " 250 " " 5 "

16th " 300 " " 5 "

18th " 225 " " 5 "

The improvement, which was observed almost from the first, continues. The patient walks much more easily, and

finds the most difference when ascending a hill. The tumour is undoubtedly smaller; there is a decided pit at the epigastrium, and the fingers can be pushed between the tumour and the ribs, although the mass is not below and clear of them yet.

21st February.—255 milliampères for 5 minutes.

23rd „ 300 „ „ 5 „

25th „ 230 „ „ 5 „

8th March. —250 „ „ 5 „

During this, the second period, the loss has been greater than usual, and the patient has had to keep her bed for four days.

10th March.—250 milliampères for 5 minutes.

Now she feels much more comfortable and stronger, and went out for a walk for pleasure yesterday, and can hardly believe that she did such a thing. She is now nearly free from one distressing symptom—she can sit with little discomfort.

13th March.—210 milliampères for 5 minutes.

15th „ 170 „ „ 5 „

17th „ 180 „ „ 5 „

20th „ 250 „ „ 5 „

22nd „ 225 „ „ 5 „

24th „ 210 „ „ 5 „

In every way there is decided improvement; the patient eats and sleeps well; she walks more easily, has less pain, less leucorrhœa, and the tumour is smaller.

There were twenty-seven applications of an average strength of 228 milliampères.

In September the tumour was smaller. The patient was better in every way, and was confined to bed for three and a half days instead of seven or eight every month, and stated that she did not lose more during the whole of the last monthly flow than she often did in one day, a year ago.

21st January 1889.—The leucorrhœa has entirely ceased

for the last six weeks. The legs swell a little towards night. The periods last seven days instead of fourteen, and the quantity of blood lost is not more than she used to have when twenty years of age, and she does not require to stay in bed. The tumour is smaller, the patient thinks, by one-half, though it appears to be scarcely so much, perhaps somewhere between one-third and one-half, and instead of its upper limit being indefinable on account of its being hidden by the chest wall, the whole breadth of the hand can be placed between the ribs and the tumour. The patient says that she noticed that the mass is smaller after each period than it was after the one before. Since the tumour became so much smaller, and consequently so much more movable, there has been considerable dragging pain in both groins. This is, however, fortunately relieved by fixing the growth in one position by means of a tight pair of stays. Instead of being unable to fasten a 30-inch pair, she can now wear a 26-inch, and even then can push her hand between her clothes and the tumour.

CASE LXVI.—Married, age 48.

The tumour was first noticed in 1885, and has much broken down the health of this patient. She had never been robust, and has been a martyr to dyspepsia for many years.

On examining the abdomen, a mass extending out of the pelvis and reaching to within 3 inches of the umbilicus was felt. From the vagina it was found that the pelvis was filled by this tumour. The cervix was fixed, and the uterine cavity measured 5 inches. The tumour is situated entirely in the anterior wall, and as the posterior wall is thin, and the sound therefore will be close to the rectum, there is almost certain to be pain when the electrical current is passed.

9th January 1888.—50 milliampères for 5 minutes.

There was a good deal of pain, as had been anticipated. The sound was made negative throughout the treatment.

11th January.— 80 milliamperes for 5 minutes.

13th " 100 " " 5 "

16th " 90 " " 5 "

18th " 100 " " 5 "

20th " 100 " " 5 "

23rd " 100 " " 5 "

3rd February.— 70 " " 5 "

There has been a somewhat greater flow than usual, and the lady feels less swollen and uncomfortable than she has done for a long time.

6th February.— 60 milliamperes for 5 minutes.

8th " 100 " " 5 "

10th " 100 " " 5 "

13th " 100 " " 5 "

15th " 150 " " 5 "

17th " 100 " " 5 "

20th " 170 " " 5 "

22nd " 130 " " 5 "

Is feeling better than she has done for some time.

2nd March.—150 milliamperes for 5 minutes.

5th " 150 " " 5 "

7th " 70 " " 5 "

9th " 125 " " 5 "

12th " 80 " " 5 "

14th " 170 " " 5 "

16th " 120 " " 5 "

21st " 180 " " 5 "

23rd " 170 " " 5 "

31st " 170 " " 5 "

2nd April. —175 " " 5 "

April 1889.—There has been a slow but steady improvement in the general health.

CASE LXVII.—Married, age 42, was sent by Dr MacLeod of Hawick in January 1888.

For the last seven years there has been a steady increase in the amount of blood lost at the monthly periods. The flow was continuous for ten days, and the patient has become very nervous and sleeps very badly. There is also almost constant pain, which at times is said to be fearful.

On examination, a tumour is felt to extend to three fingers' breadths above the pubes, and in the pelvis the cervix is felt to be large and to be situated far back. The sound passes to a depth of 5 inches.

The treatment consisted in twenty-eight applications, in all of which the internal electrode was made positive. The average strength of the currents was 133 milliampères.

13th January 1888.—100 milliampères for 5 minutes.

16th " 100 " " 5 "

The patient was much upset by the first application, but is better again to-day.

18th January—100 milliampères for 5 minutes.

20th " 115 " " 5 "

23rd " 120 " " 5 "

The lady is very sleepless; she often gets up during the night and walks about her room for an hour at a time.

25th January.—150 milliampères for 5 minutes.

1st February.—100 " " 5 "

The period has not lasted so long as usual, and there has been much less discharge.

3rd February.—115 milliampères for 5 minutes.

6th " 125 " " 5 "

8th " 130 " " 5 "

10th " 130 " " 5 "

13th " 130 " " 5 "

17th " 120 " " 5 "

20th " 120 " " 5 "

27th " 150 " " 5 "

There has been rather more discharge than usual.

29th February.—140 milliampères for 5 minutes.

2nd March.—145 " " 5 "

5th " 160 " " 5 "

Severe pain in the left side is complained of to-day. There has been more or less for a long time, but it had been gradually getting better since the treatment was begun.

7th March.—155 milliampères for 5 minutes.

9th " 130 " " 5 "

12th " 150 " " 5 "

The pain in the side is very much better.

14th March.—165 milliampères for 5 minutes.

16th " 130 " " 5 "

19th " 150 " " 5 "

22nd " 180 " " 5 "

28th " 150 " " 5 "

The period has been in every respect greatly improved ; it lasted a shorter time, there was less discharge, and much less pain.

30th March.—160 milliampères for 5 minutes.

2nd April.—110 " " 8 "

Extract from letter, dated 17th March 1889 :—" I am very well and have kept well all the time ; of course I get tired at times, and feel my side a little, but I expect this is all right. I feel very thankful to you for your clever treatment of me. Had you been in Edinburgh I would have called to see you and hear what you thought of my case. Should I get ill again I will just come and see you. I hope I am doing right, walking and doing any other thing I like."

CASE LXVIII.—Married, age 40, came from London to Edinburgh in January 1888.

For some years past, when this lady was in Scotland, she has consulted Dr Keith on account of a fibroid tumour of the uterus, giving rise to symptoms which prevent her

enjoying life as she might and ought to do. At the same time those symptoms have never been of sufficient severity to make an operation justifiable. There is difficulty in walking, with pain in the left side and left leg. She can manage a mile or so with tolerable ease. At the commencement of the treatment the lady suggested that she would consider herself cured if she were enabled by its means to walk twelve miles and get up into a high dogcart.

The tumour in January extended to a little above the level of the umbilicus on the right side, and scarcely so high up on the left. The cervix was awkwardly situated; it was so far back as to be almost out of reach.

The treatment consisted in twenty-four applications; during the first four the sound was made positive, in the remainder it was negative. Owing to the position of the tumour the applications were always painful, though there was great improvement in this respect after the mass became smaller and more movable, and when the cervix had come into its natural position.

14th January 1888.—100 milliampères for 5 minutes.

<i>16th</i>	"	90	"	"	5	"
<i>18th</i>	"	150	"	"	5	"
<i>20th</i>	"	150	"	"	5	"
<i>23rd</i>	"	100	"	"	5	"
<i>25th</i>	"	140	"	"	5	"
<i>27th</i>	"	150	"	"	5	"
<i>1st February</i>		100	"	"	5	"
<i>8th</i>	"	120	"	"	5	"

There has been rather less flow during the period which is over. There is now much less pain in the leg, and the patient can walk better. This improvement she notices most when going up and down stairs.

10th February.—125 milliampères for 5 minutes.

The cervix is now in its normal position, and the application caused much less pain.

20th February.—110 milliampères for 5 minutes.

22nd	„	110	„	5	„
24th	„	115	„	5	„
27th	„	130	„	5	„
29th	„	150	„	5	„
10th March		150	„	5	„
12th	„	170	„	5	„
14th	„	150	„	5	„
16th	„	170	„	5	„
17th	„	175	„	5	„
19th	„	180	„	5	„
21st	„	170	„	5	„
23rd	„	170	„	5	„

Says that she feels so much better.

28th April.—Has been able to walk four miles, and can now get up on to a drag.

April 1889.—Is now very well.

2nd July.—The lady called to-day ; she was looking very well, said that she could do anything, and could not express how much better she feels.

CASE LXIX.—Married, age 46, came up one forenoon to the Infirmary in December 1888.

Twelve years ago she had a small fibroid tumour of the uterus. Year by year the tumour has increased in size, until it is a thing of probably between 50 and 60 lb. in weight. For a few years there was menorrhagia ; but this symptom ceased years ago without treatment. There is sometimes a little difficulty in passing water. In all other respects there is not any trouble, except from the weight of the large mass. The only sister of the patient, who is now 53 years of age, has a small fibroid tumour, which is still bleeding. I was told that a couple of years ago an attempt was made to give relief by operation, and that after two hours' work nothing was accom-

plished—neither removal of even a piece of ovary, tube nor tumour!

The abdomen was enormously distended by a soft, fluctuating tumour, the skin being tightly stretched over it. There was not any tumour to be felt in the pelvis, and the cervix, which was quite small, could be reached with difficulty. The sound passed a long way into the centre of the mass.

We were very anxious to try the effect of the electrical current on a fibro-cystic tumour, and although this would have been a very favourable case for operation, in spite of the size, we determined to try what could be done for her relief by the battery, and the patient was warned that there might not be any result. The treatment was carried out at the Woman's Dispensary, Edinburgh.

16th Jan. 1888.—75 milliampères for 5 minutes.

20th " 110 " " 5 "

23rd " 210 " " 4 "

13th February.—100 " " 5 "

17th " 150 " " 5 "

The negative electrode was internal. The tumour is smaller, softer, and the skin is not so tense. The patient is able to button four buttons of her dress, which would not meet before.

22nd February.—100 milliampères for 5 minutes.

24th " 200 " " 5 "

27th " 250 " " 5 "

29th " 350 " " 5 "

2nd March. —350 " " 5 "

5th " 350 " " 5 "

9th " 150 " " 5 "

14th " 300 " " 5 "

16th " 300 " " 5 "

19th " 350 " " 5 "

21st " 290 " " 8 "

23rd March.—290 milliampères for 10 minutes.

26th	„	250	„	„	10	„
28th	„	290	„	„	10	„
30th	„	300	„	„	10	„
31st	„	275	„	„	10	„
2nd April.	—	300	„	„	10	„
4th	„	220	„	„	10	„

It will be noted that the strength of the current used in this case exceeded that of any other. Indeed, with the same battery and with the same apparatus it was possible to pass through this patient a current 25 per cent. stronger than could be got through any other patient. This is to be accounted for by the thinned and tense condition of the skin and the cystic nature of the tumour, it being practically a salt solution, and offering little resistance to the passage of the electrical current.

The result of the treatment, which had, however, to be discontinued sooner than it would otherwise have been by our departure for London, was not very satisfactory. The patient felt a little lighter, and the dress, four buttons of which would not fasten, was now quite loose. The ensiform cartilage also did not stick up so prominently as it had done. The tumour did not bulge so much at the sides, and the skin was looser.

In September there was little change, except that the tumour was very much to one side.

In January 1889 the mass, judging by the general appearance of the dress of the patient, was the same size as it had been nine months before; so that at the end of a year there had been some diminution instead of decided increase as usual. The general health was good, and the woman seemed to walk more lightly. Whether prolonged treatment would have reduced the size in any marked degree it is, of course, impossible to say; but had it been possible, I should much like to have tried.

CASE LXX.—Married, age 44; four children, the youngest four years of age.

Before the birth of her last child menstruation had always been regular, lasting usually six or seven days. For the four years since the child was born there has been great and increasing quantities of blood lost. She considers that the loss has been slight if it continues for ten days, and sometimes it goes on for three, and on one occasion for six weeks. The cavity of the womb was curretted by the late Dr Angus Macdonald without benefit. There has been in addition a profuse watery discharge since June 1887. There is constant backache and very frequent headache, especially after the periods.

On examination in January 1888 the tumour was found to extend up into the abdomen as far as midway between the pubes and umbilicus, and the depth of the cavity was $4\frac{3}{4}$ inches. Patient is very anæmic, and unable to do almost anything.

The treatment consisted in thirty-two applications, during all of which the sound was attached to the positive pole of the battery.

18th January 1888.—100 milliampères for 5 minutes.

20th " 135 " " 5 "

23rd " 140 " " 5 "

Patient thinks that her back is not quite so painful.

25th January. —150 milliampères for 10 minutes.

27th " 200 " " 8 "

21st February.—110 " " 5 "

The period has lasted for three weeks, though for the first ten days there was very little discharge. On the whole, the quantity has not been greater than the average.

23rd February.—140 milliampères for 5 minutes.

25th " 140 " " 5 "

27th " 125 " " 5 "

Is bleeding again ; but there is less headache and pain in the back than usual.

1st March.—130 milliampères for 5 minutes.

2nd „ 130 „ „ 5 „

3rd „ 130 „ „ 5 „

5th „ 150 „ „ 5 „

The bleeding has continued since the last note was made. There has not been much loss, however, and the patient is feeling better and stronger in every way, and her friends have remarked on her improved appearance. She can now go upstairs with comfort instead of with a struggle, accompanied by an attack of breathlessness.

6th March.—150 milliampères for 5 minutes.

7th „ 150 „ „ 5 „

8th „ 150 „ „ 5 „

Bleeding, which has been going on since the 27th of last month, has now ceased.

9th March.—140 milliampères for 5 minutes.

10th „ 120 „ „ 5 „

The passage of the sound does not now give rise to pain as it used to do.

12th March.—120 milliampères for 5 minutes.

13th „ 120 „ „ 5 „

14th „ 125 „ „ 5 „

15th „ 170 „ „ 5 „

16th „ 175 „ „ 5 „

17th „ 150 „ „ 5 „

There has been a little discoloured discharge nearly every day.

19th March.—160 milliampères for 5 minutes.

20th „ 130 „ „ 5 „

21st „ 160 „ „ 5 „

The patient walked further to-day than she has been able to do for a long time. There is less leucorrhœal discharge.

22nd March.—150 milliampères for 5 minutes.

24th " 150 " " 5 "

26th " 160 " " 5 "

28th " 160 " " 5 "

30th " 165 " " 10 "

It will be noted that twenty-three applications were made during the month of March.

The following are extracts from various letters received :—

8th April 1888.—“I kept well for a month, and the bleeding came on, on Sunday the 5th April, just a little every day till Thursday, when it got worse, and has done so every day. To-day is the worst day I have had ; indeed I am losing quite as much yesterday and to-day as I used to do. I did not go to bed till yesterday. I have a good deal of pain to-day. Should I take any Hazaline? Do you think that it will be necessary for me to have more electric treatment?”

29th May 1888.—“The previous time I wrote I had to be in bed only four days, two of which were pretty bad. I kept a month better, and then a brownish-red discharge began, just a little every day for about six days, and now it has quite stopped. I had neither to go to bed nor remain in the house, but walked about as usual. I am feeling a great deal stronger than I did, and am much surprised that I have got over my period this time so easily. Or could it be possible for me to be in the family way? I have no premonition of anything as yet, but with the losing so very little this time I have a dread of it.”

3rd October 1888.—“I am sorry to have to tell you that I have had a bad period this time. I have been very well for the last few months, a month and six weeks being between the periods, although the time they lasted was from ten days to a fortnight. This time I was better for two months, and then the bleeding came on very gradually. I went about for three or four days ; then I had to keep on

the sofa ; and, latterly, had to rest in bed for four days. I thought I was almost better, and got up, when the bleeding returned pretty bad, and has continued ; one day a good deal better and another day a good deal worse. I am rather downhearted, as I thought that I was cured."

17th December 1888.—"I have had another rather bad period. It was nearly eight weeks between the last ; but during the interval, after getting better of the last period (I was a fortnight unwell), I was quite well for a week, when the bleeding came back and lasted a week ; but I did not require to rest in bed. The bleeding then returned, a little every week, for three or four hours, mostly every day, for three or four weeks, and about a fortnight before I became unwell this time it had quite disappeared. The bleeding came on more rapidly on the 5th December. I was able to be out of bed till the 10th, the bleeding then being worse than I have had it since I had your treatment. I got up on the 13th, but had to return to bed, as I had a great deal of pain and the bleeding was pretty bad. I am still in bed, and the bleeding is nearly gone."

19th January 1889.—On examination, it was found that the uterus appeared to be of normal size. On the whole the patient said that she is much better and the bleeding is much less, but it often comes on without warning and at irregular times.

CASE LXXI.—Married, age 46, was sent to Edinburgh by Dr Mackie, Brechin, in January 1888.

It is ten years ago since the tumour was first noticed, and it has gradually given rise to more and more discomfort and feeling of fulness and weight in the pelvis. The "periods" are profuse, and have been accompanied for a long time by sickness, and, in addition, she is seldom free from such attacks for a week at a time.

On examination, the cervix was felt to be large, the

cavity of the uterus measured five inches, the sound passing behind the mass of tumour, which reaches up to the level of the umbilicus.

The treatment consisted in twenty-three applications, the current being allowed to flow from the abdomen to the sound in the cavity. At no time was the passage of the current well borne; at first it was decidedly painful, and even towards the end of the treatment it was not possible to employ a strong current.

21st January 1888.—50 milliampères for 5 minutes.

23rd " 50 " " 5 "

25th " 45 " " 5 "

7th February 1888.—40 " " 5 "

There has been rather more discharge than usual, but unaccompanied by an attack of sickness. The application to-day was more easily borne.

9th February.—70 milliampères for 5 minutes.

11th " 70 " " 5 "

14th " 100 " " 5 "

16th " 50 " " 5 "

18th " 100 " " 5 "

21st " 55 " " 5 "

The tumour is smaller, and the patient says that she feels more comfortable.

23rd February.—75 milliampères for 5 minutes.

3rd March. —80 " " 5 "

6th " 90 " " 5 "

8th " 85 " " 5 "

10th " 70 " " 5 "

13th " 85 " " 5 "

15th " 75 " " 5 "

17th " 80 " " 5 "

Feels better and lighter, and has not had an attack of sickness since the treatment was begun.

20th March.—80 milliampères for 5 minutes.

27th March.—80 milliampères for 5 minutes.

29th " 80 " " 5 "

31st " 80 " " 5 "

2nd April.—80 " " 5 "

The patient said to-day that at the commencement of the treatment she would have been much pleased to leave Edinburgh, but that now she sees what a pity that would have been. The tumour can be scarcely felt above the pubes.

8th June.—"Dr Mackie thought the tumour much reduced a month ago, and I am better in the way of not being so often sick or having quite so many internal bothers. The thing that disappointed me was, and is, that I am not a bit stronger generally, nor able to do more or walk farther. The headaches, too, are just as bad."

28th June 1889.—"When I wrote last summer, three months after seeing you in Edinburgh, I was feeling always weak and tired, but since that I have got much better. When tired I still have twinges in the old spot, and long railway journeys rather knock me up, but I had a very good winter (never had to send for Dr Mackie from autumn to spring), and am certainly quite different from what I was when you saw me last."

CASE LXXII.—Single, age 42.

For 12 years there has been profuse menorrhagia; but the patient says that she picks up very quickly between the periods. She says, that she thinks that she does not exaggerate, when she states, that three pints of blood are often lost. On the second night of the flow, the bed has to be made up with towels and extra sheets, to prevent its being soaked with blood. The period lasts six days, and now there is not any pain.

On examination, the fundus uteri is found to be lying far back in the hollow of the sacrum. There is no cervix, and the os looks forwards. The cavity measures five inches.

28th January 1888.—50 milliampères for 5 minutes.

On moving the sound in the cavity, there was a feeling as if a soft polypus were present. Chloroform was given on the 31st, and a clump of very small mucous polypi were scraped from the fundus.

13th February.—70 milliampères for 5 minutes.

The period has been scarcely so bad as usual.

15th February.—85 milliampères for 7 minutes.

17th " 100 " " 5 "

20th " 100 " " 5 "

The uterus has now left its position of retroversion, and the sound passes forwards. The upper part of the tumour, which was at first to be felt lying in the hollow of the sacrum, is almost touching the anterior abdominal wall.

28th February.—100 milliampères for 5 minutes.

24th " 110 " " 5 "

8th March. —120 " " 5 "

The period has been as bad as ever.

10th March.—130 milliampères for 5 minutes.

12th " 90 " " 5 "

13th " 150 " " 5 "

14th " 110 " " 5 "

15th " 110 " " 5 "

17th " 140 " " 5 "

19th " 160 " " 5 "

21st " 170 " " 5 "

23rd " 210 " " 5 "

It was arranged that the treatment was to be continued in London, but, owing to the death of a sister, it has not been gone on with. There has not been improvement.

CASE LXXIII.—Single, age 40.

This lady had a large soft fibroid extending well under the ribs on either side. The tumour was first noticed six years before, when it was already of some size. She had

neither pain nor hæmorrhage, and treatment was undertaken simply with the view of reducing the size of the tumour. The uterine cavity was $3\frac{1}{2}$ inches.

18th February 1888.— 55 milliampères for 5 minutes.

21st " 100 " " 5 "

23rd " 130 " " 5 "

25th " 125 " " 5 "

27th " 180 " " 5 "

29th " 185 " " 5 "

2nd March 1888. —200 " " 5 "

The tumour is free of the ribs. On the left side a mass has come from underneath the ribs, which has much the appearance of a large spleen. It turned out to be an out-growth from the tumour.

5th March.—230 milliampères for 5 minutes.

7th " 225 " " 5 "

13th " 190 " " 5 "

There has been more flow than usual.

15th March.—210 milliampères for 5 minutes.

17th " 210 " " 5 "

19th " 200 " " 5 "

21st " 210 " " 5 "

23rd " 250 " " 5 "

26th " 260 " " 5 "

28th " 250 " " 5 "

30th " 110 " " 5 "

The tumour can now almost be pushed to the left side of the middle line. This caused a little pain, and it was proposed that the application should not be made, more especially as the lady said that she had felt some pain for a day or two in the left side. She made light of this, however, and as the application was to be the last in Edinburgh, it was given. It was made only half the usual strength. She had in all eighteen negative applications, and she intended to come south and continue the treatment if necessary. Sixteen

days after coming to London I had a letter from a medical friend in Edinburgh, who had been asked to see her. She had gone about a good deal ; the weather was bitterly cold, and she had got a chill. She had severe pain over the region of the spleen, with fever. This continued for four days, and was followed by vomiting and diarrhœa. She then began to improve, was sitting up in bed and talking of going south as soon as she was able. The night before I heard of her, she was seized with two floodings during the night, so severe that she was for some time pulseless after the second attack. The hæmorrhage then ceased, but there was a sudden return of it next day, and she died during it. One cannot help thinking that plugging the cervix or vagina, which in her case was short and small, might have saved her.

CASE LXXIV.—Married, age 27, came to the Woman's Dispensary, Edinburgh, on the 1st February 1888.

Patient had been married for two years, and had not been pregnant. A year ago she began to have some difficulty in passing water at times, and four months afterwards the water had to be drawn off with a catheter just as the menstrual flow was commencing. Since that time the catheter has been required to be used on several occasions. Menstruation has been for some years profuse, and the usual time the flow is on is twelve days. In the Royal Infirmary, where the woman was a patient for some weeks, Barnes' bags were used, and she was told that they did her good ; she, however, did not feel any benefit.

The patient was a small, delicate looking woman, and on examination it was found that the uterus, enlarged to the extent of almost filling the pelvis, was retroverted ; the cervix had been completely drawn up into the mass, and the os could be reached with difficulty immediately behind the upper margin of the pubes. On account of its relation

to the bone it was not possible to bend a sound so as to allow of its entrance into the interior of the womb. It was therefore necessary to puncture in the centre of the mass.

1st February.—40 milliampères for 5 minutes.

3rd " 25 " " 5 "

The puncture was repeated a second time. On both occasions the patient complained of great pain. On the 27th of the month she came back. She had passed through a menstrual period more easily than usual. It had lasted six instead of twelve days; there had been less discharge, and there had not been any stoppage of the water. A marked difference in the local condition was felt; there had been partial rotation of the uterus; there was some appearances of a cervix, and the os, which was now midway between its old position behind the pubes and the ordinary one, could be easily entered by the sound, which passed to a depth of $4\frac{1}{4}$ inches.

27th February.—75 milliampères for 5 minutes.

29th " 50 " " 5 "

5th March.—70 " " 5 "

9th " 40 " " 5 "

19th " 100 " " 5 "

It was not necessary to puncture on any of these occasions. The patient did not feel any better, and had had to take off the water once.

Seven applications, five negative with sound in the cavity, two negative punctures, the average strength being 57 milliampères. This patient was entirely lost sight of.

CASE LXXV.—Age 49.

In the end of 1885, or beginning of 1886, a submucous fibroid the size of the fist was removed. This tumour had caused excessive hæmorrhage, and the periods became normal after its removal. Pain was, however, said to be more or

less constant, and in the beginning of 1888 fourteen applications of electricity were made, the sound being negative.

7th February.— 45 milliampères for 5 minutes.

3rd March 55 " " 5 "

6th " 65 " " 5 "

8th " 100 " " 5 "

10th " 100 " " 5 "

12th " 80 " " 5 "

15th " 125 " " 5 "

17th " 120 " " 5 "

20th " 100 " " 5 "

22nd " 130 " " 5 "

24th " 120 " " 5 "

27th " 125 " " 5 "

29th " 135 " " 5 "

31st " 85 " " 5 "

The average strength was almost 100 milliampères.

The result was some diminution in the amount of discomfort.

CASE LXXVI.—Age 35, came to the Woman's Dispensary on the 10th of February 1888.

A tumour had been noticed in the abdomen eleven years ago. Increase of menstruation for last eight years. The periods, which formerly lasted three or four days, are now prolonged to fourteen and sixteen. Has been in the Infirmary under the care of Professor Simpson and the late Dr Angus Macdonald, and says that she has consulted a great number of doctors. Injections of ergot have been tried, and have failed to arrest the bleeding.

A large tumour extending up underneath the ribs on both sides was felt. The os was situated far back, and the sound passed 8 inches into the uterine cavity.

A current of 70 milliampères was passed from the abdomen to the sound for 5 minutes.

This patient did not come back, and I heard nothing more of her. The visit was somewhat of a begging nature.

CASE LXXVII.—Married, age 48, was sent by Dr Connel of Peebles.

Until the age of 35 the general health was very good, and the periods recurred with unfailing regularity every four weeks. Since that time there has been a decided increase, the quantity of blood lost steadily increasing, until now it is about four times as much as it used to be, and instead of recurring every four weeks, the flow usually puts in its appearance every two, and never at a longer interval than three weeks. Headaches are often very severe, and the lady is frequently confined to bed, and says that she feels a loss of brain power. A visit to Swalbach did good for some time, but towards the end of 1887 she completely broke down.

The tumour is not prominent, and extends to within 2 inches of the umbilicus. The cavity measures $4\frac{3}{4}$ inches.

23rd February 1888.—100 milliampères for 5 minutes.

25th	"	115	"	"	5	"
27th	"	140	"	"	5	"
29th	"	160	"	"	5	"
1st March	1888.	—165	"	"	5	"
2nd	"	180	"	"	5	"
12th	"	110	"	"	5	"

The period is over; the quantity has been the same as usual, but the patient feels better.

13th March.—160 milliampères for 5 minutes.

14th	"	180	"	"	5	"
15th	"	180	"	"	5	"
16th	"	175	"	"	5	"
17th	"	185	"	"	5	"
19th	"	180	"	"	5	"
20th	"	190	"	"	5	"

Usually at this time the lady feels ill, but as yet she is very comfortable.

21st March.—210 milliampères for 5 minutes.

23rd " 160 " " 5 "

24th " 175 " " 5 "

26th " 150 " " 5 "

27th " 160 " " 5 "

The treatment was discontinued, and is to be begun again in London in a month or so. Before it was restarted we had come to the conclusion that it was a mistake to make the applications as quickly as had been done in this case, viz., twelve in fifteen days.

21st April.—100 milliampères for 5 minutes.

23rd " 115 " " 5 "

25th " 150 " " 5 "

27th " 100 " " 5 "

30th " 100 " " 5 "

2nd May.—85 " " 5 "

4th " 125 " " 5 "

14th " 115 " " 5 "

The patient is sleeping much better and looks better.

16th May.—115 milliampères for 5 minutes.

18th " 100 " " 5 "

23rd " 115 " " 5 "

25th " 125 " " 5 "

28th " 125 " " 5 "

30th " 125 " " 5 "

11th June.—110 " " 5 "

The sound was always attached to the positive pole of the battery. The average strength was 140 milliampères.

The period has been, on the whole, better, and the lady's son thinks that she is much improved.

The after history has not been satisfactory. The only difference that we can think of to account for this is that

some of the applications were made with little or no interval between them.

CASE LXXVIII.—Married, age 51, was sent through from Glasgow by Dr Moore, and attended the Woman's Dispensary, Edinburgh.

Menstruation began at the age of fourteen, and was accompanied by somewhat severe pain until marriage, at the age of 37. Four children were born, and the general health was good until three years ago. About this time the flow every month began to be prolonged, and soon, instead of returning every month, it sometimes made its appearance every fortnight, lasting for ten instead of six days. Dysmenorrhœa which had been absent for eleven years returned. A year after these symptoms appeared, a swelling was felt in the abdomen. This swelling is slowly increasing in size, and has given rise to constant pain and to a great deal of suffering.

On examination, the swelling is found to extend to six inches above the pubes and to distend the abdomen a little. In the pelvis it is found to press on the bladder and to fill the whole pelvic cavity. The sound passes $4\frac{1}{2}$ inches.

In the treatment of this case negative applications were made.

29th February 1888.—65 milliampères for 5 minutes.

2nd March „ —100 „ „ 5 „

5th „ 140 „ „ 5 „

7th „ 125 „ „ 5 „

Both above and in the pelvis there is a marked difference, even from day to day.

9th March.—135 milliampères for 5 minutes.

14th „ 140 „ „ 5 „

Patient remarked that she had so much less pain.

16th March.—125 milliampères for 5 minutes.

26th „ 125 „ „ 5 „

The period lasted one day longer than usual, but there was much less blood lost, and less pain. The tumour is smaller in the pelvis, and extends to three instead of to six inches above the pubes.

28th March.—160 milliampères for 5 minutes.

30th " 135 " " 5 "

31st " 145 " " 5 "

There is still some pain at one spot in the left side.

2nd April.—135 milliampères for 5 minutes.

3rd " 160 " " 5 "

5th " 210 " " 5 "

6th " 200 " " 5 "

In all, fifteen applications, with an average strength of 140 milliampères.

The pain in the left side has gradually become less, and is now quite absent. The patient is in much better health and spirits; she has lost her look of depression, and the tumour is about one-third the size it was five weeks ago. The way in which this tumour decreased from day to day was very remarkable.

Dr Moore wrote on the 20th June 1889,—“I have just had an interview with Mrs —, and I am glad to say she has had no return of hæmorrhage since you operated. I had no opportunity of examining the remains of the fibroid; but she says that she thinks it is all gone. You remember the poor woman was fast sinking from hæmorrhage when you kindly took her in charge. In her own words, she was ‘never dry.’”

CASE LXXIX.—Married, age 37, came into Edinburgh in the beginning of March 1888.

An abdominal swelling was first noticed about five years ago, and although there have been occasional attacks of pain in it, there was really little trouble until a few months ago. The patient has found that of late her general health

has been failing, and that the quantity of loss at the periods has been increased, and there has been great pain. The most annoying symptom is, however, a difficulty in passing water; and on one occasion there was complete stoppage, and relief had to be given by emptying the bladder with a catheter.

On examination, a very prominent tumour, reaching up to the level of the umbilicus, is found. There is not any cervix, and the opening into the uterus is situated high up on the left side, and almost out of reach of the finger.

The treatment consisted, unfortunately, in only ten negative applications.

7th March 1888.—75 milliampères for 5 minutes.

9th " 125 " " 5 "

The patient felt very tired yesterday after the first application. There is a marked diminution in the size of the tumour after only one sitting.

12th March.—125 milliampères for 5 minutes.

14th " 115 " " 5 "

Already the patient says that her dress feels much looser, that she can walk better, and has now not any discomfort with the bladder. The tumour is immensely smaller, and the os uteri is an inch lower down.

16th March.—100 milliampères for 5 minutes.

19th " 150 " " 5 "

Every day the tumour is found to be smaller.

28th March.—150 milliampères for 5 minutes.

The period has been quite easy, and the patient is much surprised that there was not any trouble or discomfort of any kind.

30th March.—150 milliampères for 5 minutes.

31st " 160 " " 5 "

2nd April.—130 " " 5 "

The tumour is to-day about one-third the size it was less than four weeks ago.

The average strength of the ten applications was rather more than 120 milliamperes.

CASE LXXX.—Aged 34. In this patient there had been great difficulty in her last two confinements on account of a tumour filling up the cavity of the sacrum. She was seen several times at intervals of a few months before the treatment was commenced. There was steady increase in the size of the tumour, which extended half-way up to the umbilicus when the first application was made. The mass comes off from the back of the uterus, which is easily felt above the pubes, being entirely drawn into the abdomen. The posterior lip of the cervix is quite lost in the tumour. The left ovary is easily felt; it is always tender and irritable.

The treatment consisted in thirty applications. Negative puncture was almost always used. As the tumour diminished the sound could be passed into the cavity of the uterus, and some of the applications were made that way, towards the end of the treatment. In this case there was more pain experienced by the negative puncture than we had ever met with, and some of the punctures were followed by profuse watery discharge, which continued for several days. In spite of the pain, the patient asked for the puncture, as she always felt so much more relieved by it.

12th March 1887.—55 milliamperes for 5 minutes.

14th " 100 " " 5 "

16th " 80 " " 5 "

19th " 90 " " 5 "

21st " 100 " " 5 "

23rd " 135 " " 5 "

The tumour is smaller.

12th April.—110 milliamperes for 5 minutes.

Has had an easy period.

14th April.—65 milliamperes for 5 minutes.

17th April.—60 milliampères for 5 minutes.

19th „ 60 „ „ 5 „

21st.—These last punctures have been somewhat painful. The left ovary is much more free, and the body of the uterus more distinct from the mass behind — altogether smaller. A great deal of watery discharge. As there is still some pain, no application was made to-day.

23rd April.— 60 milliampères for 5 minutes.

2nd May. — 60 „ „ 5 „

7th „ 50 „ „ 10 „

9th „ 155 „ „ 5 „

To-day sound passed into cavity of uterus. There has been profuse watery discharge, which has given great relief.

11th May.— 55 milliampères for 5 minutes.

14th „ 140 „ „ 5 „

16th „ 70 „ „ 5 „

26th „ 70 „ „ 5 „

28th „ 30 „ „ 5 „

There is a distinct cervix to-day, and all bladder trouble has ceased. Feels by her dresses how much smaller the tumour is. The last puncture was again painful, and only 30 milliampères could be borne. Great watery discharge followed. The rest of the applications were now made easily in the cavity of the uterus.

2nd June.—110 milliampères for 10 minutes.

4th „ 120 „ „ 10 „

6th „ 150 „ „ 10 „

8th „ 170 „ „ 10 „

11th „ 130 „ „ 10 „

13th „ 160 „ „ 10 „

21st „ 130 „ „ 10 „

23rd „ 140 „ „ 10 „

25th „ 135 „ „ 10 „

27th „ 135 „ „ 10 „

The last period was good and painless. There has been

marked diminution in the size of the tumour. The patient returns home feeling well. The tumour is now central, and one-fourth the original size. Nothing remains but a thin flattened mass in the roof of the pelvis. Now it is impossible to tell what the tumour is. It might easily be mistaken for a simple cellular swelling.

29th June 1889.—This lady writes,—“I am really very well, and able for any ordinary amount of fatigue. The periods continue quite normal, *so* different to what they used to be. In fact, I really am very well.”

CASE LXXXI.—Married, age 40 ; came home from India for the electrical treatment in the beginning of 1888.

This lady had never been at all robust, but she had been able to enjoy life until a few years ago. A fibroid tumour of the uterus had been responsible for her bad health in late years, and she is very anxious to be relieved of her pain and discomfort, and to get strong again.

The chief symptom is pain, situated principally in the lower part of the back. There is also a general feeling of discomfort and fulness, much worse during the periods, which are greatly in excess, and which also appear too often. The lady looked ill ; she was thin and wan, and on examining the abdomen a very prominent tumour was seen and felt. The mass extended upwards to $1\frac{1}{2}$ inch above the umbilicus. The abdominal wall was thin, and was tightly stretched over the tumour. On passing the finger into the vagina the growth is felt almost at once, and is found to be tightly packed into the pelvis. The cervix is obliterated, and the os is situated as far back as possible, and towards the right side.

23rd March 1888.—60 milliamperes for 5 minutes.

As was to be expected from the position of the uterine canal, the application was not well borne.

26th March.—55 milliamperes for 5 minutes.

28th March.—60 milliampères for 5 minutes.

The sound passed much more easily.

25th April.—75 milliampères for 5 minutes.

The treatment which had been begun in Edinburgh was recommenced, after a month's interval, in London. There is now quite a well-marked cervix.

27th April.—70 milliampères for 5 minutes.

The tumour is decidedly smaller.

10th May.—65 milliampères for 5 minutes.

The period has been got through much more easily than usual; the long interval of rest from treatment being accounted for by an attack of dysentery.

12th May.—65 milliampères for 5 minutes.

15th " 60 " " 5 "

17th " 85 " " 5 "

19th " 45 " " 5 "

Until to-day the sound has been connected to the negative pole of the battery; but on account of there being more pain than usual, it was made positive, and gave great relief.

8th June.—50 milliampères for 5 minutes.

A return was made to the negative sound. The tumour decreases steadily, and the abdominal wall is taking on fat. The period was much as the last.

11th June.—45 milliampères for 5 minutes.

13th " 70 " " 5 "

15th " 50 " " 5 "

30th " 40 " " 5 "

A very easy period, with little flow.

2nd July.—65 milliampères for 5 minutes.

4th " 75 " " 5 "

Said that she felt very tired yesterday evening, but allowed to have been shopping for four or five hours.

6th July. — 75 milliampères for 5 minutes.

11th " 80 " " 5 "

26th July. — 55 milliampères for 5 minutes.

28th „ 75 „ „ 5 „

30th „ 85 „ „ 5 „

1st August.— 85 „ „ 5 „

3rd „ 100 „ „ 5 „

6th „ 80 „ „ 5 „

21st „ 105 „ „ 5 „

The period has been again easy.

23rd August.— 75 milliampères for 5 minutes.

25th „ 120 „ „ 5 „

27th „ 135 „ „ 5 „

29th „ 135 „ „ 5 „

The sound was made positive during the last four applications. The lady is very well, and the tumour is decidedly less than half the size it was. The average strength of the thirty applications has been 75 milliampères.

May 1889.—The general health has been very good, and the lady has been able to do anything she wanted to for the last nine months. She has entirely lost her old haggard look, and has now a clear, fresh complexion. The tumour is rather smaller than it was in August of last year, and the wall is quite fat, and is quite loose.

CASE LXXXII.—Single, age 36, was sent by Dr Priestley.

The history of this patient was, that for a number of years she had not known what it was to feel well, even for a day. She was always more or less ill, but this she would have been able to put up with, had it not been that, during the time of the menstrual flow, she suffered terribly from pain, from headache, from sickness, and from menorrhagia. For those attacks of pain and sickness, which recurred at intervals of three weeks, morphia had been taken in increasing doses for some years.

Treatment of all kinds had been tried without relief. It

had been suggested that she should have an operation, but this, both she and her friends would not consent to.

On examination, a fibroid tumour of the uterus was found to entirely fill the pelvis. The exact condition was made out with some little difficulty, on account of excessive tenderness in every direction. The passage of the sound was not easy from the same cause. Treatment by electricity was agreed to, and the lady came to town twice a week for the applications. She had a railway journey of one and a half hours each way.

9th April.—50 milliampères for 5 minutes.

11th " 50 " " 5 "

The passage of the sound causes so much pain that the applications were badly borne. She was very tired after the first one.

13th April.—70 milliampères for 5 minutes.

16th " 65 " " 5 "

18th " 65 " " 5 "

20th " 65 " " 5 "

1st May 50 " " 5 "

The period has been quite as distressing as usual, and the usual doses of morphia were taken.

5th May.—60 milliampères for 5 minutes.

8th " 80 " " 5 "

12th " 60 " " 5 "

15th " 90 " " 5 "

29th " 40 " " 5 "

There has been more flow, but accompanied by less pain and headache, and no morphia has been taken for three weeks. This is said to be the longest time she has gone without the drug for some years.

2nd June.—50 milliampères for 5 minutes.

4th " 65 " " 5 "

7th " 75 " " 5 "

Says that she is feeling decidedly better, and, in fact, almost quite comfortable. The tumour is much smaller.

13th June.—75 milliampères for 5 minutes.

16th „ 70 „ „ 5 „

30th „ 60 „ „ 5 „

There has been a wonderfully easy period, and now the patient feels well. She thinks that her progress is wonderful.

3rd July.—75 milliampères for 5 minutes.

7th „ 80 „ „ 5 „

10th „ 75 „ „ 5 „

14th „ 70 „ „ 5 „

17th „ 70 „ „ 5 „

28th „ 50 „ „ 5 „

There was much less pain, and no morphia was required.

4th August.—50 milliampères for 5 minutes.

11th „ 50 „ „ 5 „

There is now scarcely any trace of tumour ; and although the strength of the current has never been great, the treatment will be discontinued in the meantime.

May 1889.—On examination, the pelvic contents appear to be normal. There is still some pain and occasional headache, but the improvement is very great, and morphia is not required.

CASE LXXXIII.—Married, age 48, came to Edinburgh in the beginning of March 1888.

The history of this lady's illness dates back to the year 1874 ; at least this was when she first consulted a doctor about an increasing monthly loss. In 1876 she was under the care of Dr Murray of Newcastle, and in 1877 she went to Edinburgh to see Dr Keith. Owing, however, to his being away from home, the patient saw Dr Matthews Duncan. At that time the symptoms appear to have been hæmorrhage, leucorrhœa, and pain. She was sent to Germany for some time, and when she again arrived

in Edinburgh it was found that a submucous tumour was presenting. It was sloughing, and was removed, and the lady survived a severe attack of blood-poisoning. Dr Duncan told her that it was not at all unlikely that she would have another of these tumours. She kept well for two years, and then all the old symptoms returned, and gradually got very bad, and the lady became too ill to travel. In 1882 Mr Teale of Leeds removed another tumour after dilation of the os, and as she had not improved, she was curretted once in 1883. Since that time she has been steadily going down hill, and nothing had done her good except visits to Woodhall Spa.

Now she suffers from excessive losses of blood every month, and is always in bed for four or five days, and there is, and has been for many years, a constant white discharge from the uterus.

The general condition is very bad, and the lady is very anæmic. For years the patient has been unable to sit or to lie on the right side.

On examination in March 1888, it was found that there was a fibroid tumour of the uterus, extending up to the level of the umbilicus, and that the os uteri was somewhat open. As it was evident that the presence of a submucous tumour was more than likely, the os was dilated, and while there was some roughness of the lining surface to be felt, nothing of the nature of a tumour was found.

9th April 1888.—115 milliampères for 5 minutes.

11th " 90 " " 7 "

13th " 120 " " 7 "

14th " 120 " " 5 "

The lady was able to walk to Clarges Street after the application.

16th April.—130 milliampères for 5 minutes.

26th " 125 " " 5 "

There has been decidedly less bloody discharge than usual.

28th April.—115 milliampères for 5 minutes.

30th „ 120 „ „ 5 „

7th May. —140 „ „ 7 „

There has been another attack of bleeding, and the applications are to be made in future while the lady is in her own bed.

9th May.—150 milliampères for 5 minutes.

11th „ 150 „ „ 5 „

22nd „ 110 „ „ 5 „

There has been a smaller loss than usual.

24th May.—170 milliampères for 5 minutes.

26th „ 200 „ „ 5 „

28th „ 175 „ „ 5 „

30th „ 110 „ „ 5 „

There is some decided improvement in the general appearance, and the patient says that she feels better.

1st June.—175 milliampères for 5 minutes.

2nd „ 175 „ „ 5 „

4th „ 200 „ „ 5 „

6th „ 175 „ „ 5 „

8th „ 175 „ „ 5 „

The period is on ; but the applications are to be continued through it.

11th June.—175 milliampères for 5 minutes.

13th „ 160 „ „ 5 „

Patient says that she feels better than she did after the last period was over. There was rather more discharge.

15th June.—150 milliampères for 5 minutes.

16th „ 160 „ „ 5 „

18th „ 150 „ „ 8 „

20th „ 150 „ „ 8 „

22nd „ 150 „ „ 8 „

23rd „ 140 „ „ 8 „

The tumour is smaller, and the patient looks better, and says that she feels better in every way.

After going home there was at first little if any improvement, but on the 23rd November we had better news:—"I really have had a better time, I am very thankful to say, and if only a few of these would come, I should be making way."

19th December.—"It really seems as if the improvement had begun. The last time was the best I have had yet; much less pain; and though I began nearly a week before time, I was not so restless and uneasy either at the time or on the mend. I still have a great deal of whites, especially the last few days, when I have been out in the Bath chair. I begin to think, at this time of year, the shaking I get counteracts the good from the fresh air. I do feel very thankful for this improvement, and pray it may continue."

The next period was a bad one, and the patient came back to town in the beginning of February, and on asking if she felt better than she did before the treatment, she replied that she would not have come back had she not felt better. The tumour was found to be 2 inches below the umbilicus, and projecting through the os, which was dilated to the size of a shilling, was an intra-uterine fibroid.

The cervix was dilated, and on the 16th February the tumour was removed piecemeal. It was attached to the fundus on the right side, corresponding to the spot where there was constant pain. Within a few days the white discharge, which had not been absent for years, entirely ceased, and before going home the lady could sit up to her meals.

July.—The patient is steadily improving.

CASE LXXXIV.—Married, age 29, was seen with Dr Matthews Duncan.

The patient is a fragile, delicate woman, and has been much pulled down in the last few years by too frequent and too profuse losses of blood at the periods. It is not neces-

sary to say that all treatment short of operation has been tried.

On examination, it was found that the pelvis was filled by a tumour, which reached up into the abdomen. The cervix was small and lying on the pelvic floor. Examination was difficult on account of great tenderness.

It was determined to begin with a weak strength of current, and to make the applications at the lady's own house ; and on every occasion the sound was made positive.

14th April 1888.—30 milliampères for 5 minutes.

16th	„	30	„	„	5	„
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18th	„	45	„	„	5	„
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20th	„	40	„	„	5	„
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23rd	„	35	„	„	8	„
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25th	„	35	„	„	10	„
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27th	„	30	„	„	10	„
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7th May 1888.	—40	„	„	10	„	
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The period has been much as usual.

9th May.—100 milliampères for 5 minutes.

11th	„	70	„	„	5	„
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14th	„	90	„	„	5	„
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16th	„	90	„	„	5	„
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There is not much appreciable difference, except that the lady feels better than usual on the day after each application.

19th May.—80 milliampères for 5 minutes.

21st	„	110	„	„	5	„
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1st June.	—65	„	„	5	„	
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The period only lasted five days.

4th June.—80 milliampères for 5 minutes.

6th	„	75	„	„	5	„
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8th	„	90	„	„	5	„
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19th	„	50	„	„	5	„
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There has been rather a profuse discharge, but in spite of it the lady feels better.

21st June.— 55 milliampères for 5 minutes.

22nd „ 95 „ „ 5 „

25th „ 90 „ „ 5 „

27th „ 100 „ „ 5 „

6th July.— 80 „ „ 5 „

9th „ 80 „ „ 5 „

11th „ 90 „ „ 5 „

18th „ 90 „ „ 5 „

The smallest period she has had for a very long time, and the lady is in great spirits and feels well.

20th July.—70 milliampères for 5 minutes.

30th „ 65 „ „ 5 „

1st August.—50 „ „ 5 „

3rd „ 50 „ „ 5 „

6th „ 50 „ „ 5 „

The average strength of the thirty-two applications was between 65 and 70 milliampères.

Feels very well. Locally there had not been very much change, though there has been some diminution in the size of the tumour. The lady was good enough to keep a record of the periods after the treatment for nearly a year.

Period commenced on the 5th August and did not stop till the 19th. After an interval of twelve days, the flow returned and continued for five or six days. Interval of four weeks followed by flow for six days, and again a flow of four days after eight days' interval. Then there was nothing for five weeks but one day, and the period was much better and only lasted five days. Clear from 3rd December to 6th January 1889; then for five weeks and a day. Since February the flow appears regularly at intervals of three weeks and four days, and is not more than it used to be before the beginning of the illness.

Extract from letter dated 7th June 1889:—"Will it be convenient if I come to see you some time to-morrow morning, and if so, what hour would suit you best? I

want you to see how much better I am, thanks to your wonderful treatment."

CASE LXXXV.—Married, age 45, was seen in April 1888 in consultation with Dr Butt.

A number of years ago it was first noticed that the quantity of blood lost every month began to increase, and in the summer of 1882 the lady was sent to Kreutznach. This visit was repeated in the two succeeding years. In 1886 to 1887 visits were paid to Woodhall Spa. However, neither Kreutznach nor Woodhall succeeded in diminishing the loss, although they may have prevented its becoming worse. The hæmorrhage is so excessive that the patient is frequently confined to bed for two weeks at a time, and she often is so weak and drained that she feels as if she would die. Large clots are passed, and pailfuls (*sic*) of blood. There is pain in the tumour on movement, and she can walk a very little distance at a time.

The patient is very anæmic and breathless, and the tumour, which is not particularly prominent, extends up to the umbilicus. The uterine cavity is large from side to side, and measures 7 inches in depth.

The lady was very anxious to try the electrical treatment, more especially as a friend was at the time under Dr Apostoli in Paris, and had much improved. The course of treatment extended from the 30th April until the 6th August, and consisted in thirty-two applications, the internal electrode being on every occasion attached to the positive pole of the battery.

30th April 1888.—70 milliampères for 5 minutes.

9th May „ —110 „ „ 5 „

The first application was made in Charles Street, and as it was followed by profuse bleeding for ten days, all subsequent applications were made at the lady's own house.

11th May.—110 milliampères for 5 minutes.

14th May.—110 milliampères for 5 minutes.

16th „ 115 „ „ 5 „

Is beginning to feel stronger.

18th May.—110 milliampères for 5 minutes.

21st „ 145 „ „ 5 „

There is a little bleeding to-day.

23rd May.—150 milliampères for 5 minutes.

When the patient gets up there is a little red discharge from the uterus.

25th May.—160 milliampères for 5 minutes.

28th „ 140 „ „ 5 „

The bleeding has now entirely ceased, and the tumour is smaller.

30th May.—180 milliampères for 5 minutes.

Is feeling much stronger, and has been out in a Bath chair.

2nd June.—150 milliampères for 5 minutes.

4th „ 190 „ „ 5 „

6th „ 160 „ „ 5 „

8th „ 195 „ „ 5 „

Still feels stronger. There has been a slight red discharge both yesterday and to-day.

11th June.—150 milliampères for 5 minutes.

18th „ 150 „ „ 5 „

The first proper period for six weeks is over. The flow continued for six days, and was by no means excessive. Feels well.

20th June.—150 milliampères for 5 minutes.

22nd „ 180 „ „ 5 „

25th „ 180 „ „ 5 „

27th „ 160 „ „ 5 „

The patient feels very well, in spite of the fact that one of her relations who lives with her is seriously ill.

29th June.—150 milliampères for 5 minutes.

2nd July.—150 „ „ 5 „

Was at the Danish Exhibition for seven hours on Saturday, and at church the day after, without being over-fatigued.

18th July.—100 milliampères for 5 minutes.

Patient went to the country for the period. She caught cold, and there was a great deal of pain in the womb. The amount of blood lost was not nearly so great as before.

20th July.—110 milliampères for 5 minutes.

23rd „ 170 „ „ 5 „

25th „ 125 „ „ 5 „

27th „ 125 „ „ 5 „

30th „ 120 „ „ 5 „

The patient walked farther yesterday than she has done for a very long time.

1st August.—150 milliampères for 5 minutes.

Yesterday was in the Academy for an hour and a half, standing the whole of the time, and got home without feeling tired, and without any of the old pain in the womb, which used to be so bad when she stood.

3rd August.—150 milliampères for 5 minutes.

5th „ 140 „ „ 5 „

Though there does not appear to be much difference in the size of the tumour, the depth of the cavity is now 5 instead of 7 inches. The patient says that she is better than she has been for a number of years.

March 1888.—Unfortunately it was necessary for this lady to live in Brighton, although we warned her before she went that there would be almost certainly an increase in the amount of hæmorrhage. The result which had been anticipated happened, and the lady came back not nearly so well as she had been. The last period was, however, much better, and confined her to bed for but two days.

28th May.—“I have been waiting to tell you how I got over my next bad time, and I have not had one at all! and am feeling so wonderfully well that I do not believe that you would know me.”

CASE LXXXVI. — Single, age 32, was sent by Dr Matthews Duncan in May 1888.

Six years ago a tumour was first noticed in the abdomen, and the patient has been under medical treatment since that time. She has paid two visits to Kreutznach and one to Woodhall Spa, and thinks that the "cures" at those places perhaps did her a little good.

She complains of debility with its accompanying distresses. This is due, in great measure, to a constant watery discharge, so profuse as to make the constant wearing of a napkin necessary. There is also a greatly increased loss at the monthly periods, and she is in bed at that time for four days. There are also occasional attacks of pain in the tumour, which, as a rule, swells greatly before menstruation.

Three or four years ago an operation was performed for the cure of the disease. The nature of the operation neither the patient nor her mother can tell. After it, the patient was very ill, apparently from septic absorption.

The patient is very bloodless, and looks weak and ill. She says that for some years the legs have been swollen, and that the swelling is not away when she gets up in the morning.

On examination of the abdomen, there is seen to be quite a considerable amount of œdema beneath the skin. The tumour is very soft, and extends to within one finger's breadth of the ribs. The cervix is far back in the pelvis, and the cavity of the uterus measures eight inches.

The treatment was begun in May, but after seven applications, the patient became very home-sick and returned to Ireland. In August she came back, and thirty-nine additional applications were made. The sound was always attached to the positive pole.

3rd May.—100 milliampères for 5 minutes.

5th " 150 " " 5 "

There was some pain in the afternoon of the 3rd.

7th May.—175 milliampères for 5 minutes.

The patient says that she feels better, and that there is less of the discharge.

9th May.—250 milliampères for 5 minutes.

11th „ 240 „ „ 5 „

The leucorrhœal discharge is as bad as ever.

14th May.—240 milliampères for 5 minutes.

22nd „ 130 „ „ 5 „

There has been a better period than usual.

August.—Since going home the patient says that she has been very ill. Now she looks better than when she left town in May, and the tumour is smaller.

11th August.—100 milliampères for 5 minutes.

13th „ 125 „ „ 5 „

15th „ 115 „ „ 5 „

17th „ 105 „ „ 5 „

18th „ 100 „ „ 5 „

21st „ 120 „ „ 5 „

23rd „ 170 „ „ 5 „

25th „ 155 „ „ 5 „

27th „ 175 „ „ 5 „

3rd September.—180 „ „ 5 „

This period has not been a bad one, and the patient says that she feels stronger.

5th September.—170 milliampères for 5 minutes.

7th „ 150 „ „ 5 „

8th „ 120 „ „ 5 „

13th „ 140 „ „ 5 „

There has been rather more loss during this period, and the interval was shorter.

15th September.—140 milliampères for 5 minutes.

17th „ 140 „ „ 5 „

19th „ 130 „ „ 5 „

21st „ 145 „ „ 5 „

28th September.—225 milliampères for 5 minutes.

1st October.	—200	"	"	5	"
3rd	"	160	"	"	5
5th	"	150	"	"	5
8th	"	140	"	"	5
11th	"	160	"	"	5
13th	"	150	"	"	5
15th	"	135	"	"	5
17th	"	160	"	"	5
22nd	"	145	"	"	5

The interval between the periods has been longer, and there has not been a greater discharge than last time.

24th October.—155 milliampères for 5 minutes.

26th	"	160	"	"	5
30th	"	165	"	"	5
1st November.	—160	"	"	5	"
3rd	"	160	"	"	5
5th	"	180	"	"	5
7th	"	130	"	"	5
10th	"	135	"	"	5
12th	"	160	"	"	5
19th	"	160	"	"	5

There has been rather less flow, and the patient's friends say that they notice a great change for the better.

21st November.—160 milliampères for 5 minutes.

The tumour is now barely up to the umbilicus, and the patient is, in every way, better—less discharge, stronger, and the legs do not swell so much. Extract from letter, dated 15th Jany. 1889,—“I suppose you expected to hear from me before this, and I would have written, but there was not much improvement. I am charmed to tell you now she is much better. She is just over her period, and has not been half as bad as the last time; but the watery discharge continues much the same; for all that she feels stronger.

“All our friends here are quite delighted to see such an

improvement in her. The tumour has got much smaller, and her feet do not swell as much as they did when we were in London."

Dr Ford of Waterford wrote in June to say that the lady was losing ground, and sent her to London again in July. She looked fairly well, with red lips; and on examination it was found that the tumour had not increased in size, but was fully as small as it had been in November of last year. There was, however, very marked œdema of the legs and also of the abdominal wall. The urine was found to contain about one-twelfth albumen on boiling and adding nitric acid.

CASE LXXXVII.—Single, age 45, was seen with Sir Spencer Wells in the beginning of March 1888.

The tumour had been a trouble and annoyance for many years, and of late had become of such a size, that the lady could not sit with any comfort, and the general health was becoming broken down. The patient was so anxious to gain some relief that she started off to Edinburgh without sending word, and arrived there the day after we had left for London.

On examination, the tumour was found to entirely fill the abdomen, reaching up to the ribs. It was particularly hard, and there were several pediculated masses on the surface. The cervix was not to be felt from the vagina, the whole of the pelvis being filled by the lower part of the tumour.

8th May 1888.—25 milliampères for 5 minutes.

10th " 45 " " 5 "

14th " 100 " " 5 "

16th " 110 " " 5 "

There was considerable pain in the evening after the last application.

28th May.—90 milliampères for 5 minutes.

The period has been much as usual. The tumour is more movable.

30th May.—125 milliampères for 5 minutes.

2nd June.—140 " " 5 "

4th " 150 " " 5 "

6th " 160 " " 5 "

After this application there was a feverish attack, due probably to the use of strong negative doses in a delicate subject.

23rd July.—85 milliampères for 5 minutes.

The lady is to go out of town for the autumn, and expresses herself as feeling much more comfortable. Dr Harper, who usually attends her, thinks that the tumour is smaller by one-quarter. On each of the ten applications the tumour had to be punctured, and the needle was made negative.

CASE LXXXVIII.—Single, age 43.

For four years or so the patient has been aware that she had a tumour. It varies greatly in size, being very much swollen before the periods. Sometimes only, there is a flooding, but there is great discomfort and uneasiness, and the lady cannot walk far—indeed for a long time she has not walked beyond her garden.

The tumour, after the period is over, extends up to the navel. The cervix is small, and is situated far back. In front and pressing on the bladder is a mass of tumour. The sound passes backwards, then to the left, and finally sharply forwards to a depth of three inches.

10th May 1888.—70 milliampères for 5 minutes.

12th " 70 " " 5 "

14th " 75 " " 5 "

16th " 70 " " 5 "

18th " 55 " " 5 "

21st " 80 " " 5 "

As the period was coming on to-day, a change was made

from the negative to the positive sound. The patient is more comfortable than usual at this time.

28th May.—35 milliampères for 5 minutes.

A fairly good period. The patient is sleeping better, and she says that the tumour is smaller than it has been for a long time.

30th May.—55 milliampères for 5 minutes.

1st June. —50 " " 5 "

4th " 65 " " 5 "

Is feeling very well, and the tumour continues to decrease in size.

6th June.—50 milliampères for 5 minutes.

8th " 50 " " 5 "

11th " 50 " " 5 "

13th " 55 " " 5 "

The tumour is decidedly swollen to-day.

15th June.—55 milliampères for 5 minutes.

18th " 50 " " 5 "

20th " 50 " " 5 "

22nd " 55 " " 5 "

Feels uncomfortably swelled.

25th June.—55 milliampères for 5 minutes.

A very slight menstrual period has been followed by great comfort and diminution in the size of the tumour.

30th June.—50 milliampères for 5 minutes.

2nd July.—90 " " 5 "

Even on deep pressure the tumour cannot be felt from the abdomen.

4th July.—75 milliampères for 5 minutes.

6th " 65 " " 5 "

9th " 70 " " 5 "

11th " 70 " " 5 "

13th " 65 " " 5 "

16th " 60 " " 5 "

18th " 65 " " 5 "

20th July.—65 milliampères for 5 minutes.

23rd „ 65 „ „ 5 „

In every way is much better.

5th July 1889.—“ I have not written to you since December for I have had no time, and have had a terrible time of suffering and anxiety and nursing, which ended last month. My youngest sister died after many months of suffering. I have nursed her night and day. Since the beginning of January till 7th June I have been only four nights in bed! I am sure I should never have got through this last six months had it not been for your treatment last summer.”

CASE LXXXIX.—Married, age 45, was seen in consultation with Dr Easton in May 1888.

The history dated back to eleven years ago, as it was about that time that attention was drawn to the presence of an abdominal tumour, by occasional attacks of pain. Now, the lady says that she has not been free from pain for some years, and she cannot express how much the abdominal discomfort and feeling of weight oppress her at all times. Indeed, she is so miserable that she often wishes that death might put an end to her suffering, for she has not any pleasure in living. She sleeps badly. She has always cold feet. At the periods all her pains and discomforts are greatly increased, and she loses more than she used to do, though there is really never much hæmorrhage. At these times she is confined to bed for three or four days, and is never able to get up in the mornings, though naturally she is a very active woman. Some three or four years ago, she had a bad attack of phlegmasia dolens, and has never entirely lost the swelling of the leg. At the age of 42 a well-known abdominal surgeon was consulted. His opinion seems to have been very much against the probability of recovery, if an attempt had been made to remove the tumour.

The lady had tried everything that offered any hope of relief; she had spent two years at Kreutznach and the Riviera, and came home rather worse than better; she had also undergone a very painful course of treatment in a sort of vapour electrical bath, also without relief, and she thinks with decided increase in symptoms. She looks ill and worn, and there is great disfigurement.

On examination the tumour is found to be enormous; it is very hard and prominent, and extends up underneath the ribs, evidently for a long way, as the chest wall is very much raised. It is not possible to get even the tip of the finger between the tumour and the ribs or sternum. No measurements were taken until after the treatment was ended in the beginning of August, and at that time the lady found that she measured 35 inches. As she is slightly made, she ought to be probably about 22 or 23. The cervix was large, lacerated, and situated in the hollow of the sacrum.

The treatment was commenced with really little hope of benefit on the part of the patient and her friends, and consisted of the passage of the continuous current on thirty occasions. During eight of these operations the sound was made positive.

15th May 1888.—100 milliampères for 5 minutes.

17th " 100 " " 5 "

19th " 75 " " 5 "

21st " 90 " " 5 "

4th June. — 75 " " 5 "

There has been more flow and more distress than usual, during the period which is passed, and to-day the tumour seems to be very prominent at the upper part.

6th June.— 85 milliampères for 5 minutes.

8th " 100 " " 5 "

The tumour is perhaps a little less hard than it was.

11th June.—100 milliampères for 5 minutes.

13th June.—110 milliampères for 5 minutes.

As it is nearly the time of the period, the sound was made positive. The tumour is not quite so tightly fixed under the ribs.

15th June.—100 milliampères for 5 minutes.

19th „ 100 „ „ 5 „

21st „ 110 „ „ 5 „

25th „ 110 „ „ 5 „

The application was made to-day at the lady's house, as the period is not quite over. Though the discharge has been free, she feels better than she usually does about this time.

27th June.—135 milliampères for 5 minutes.

A marked lessening in the size of the tumour is noted to-day, and the patient feels decidedly more comfortable.

29th June.—135 milliampères for 5 minutes.

2nd July.—100 „ „ 5 „

4th „ 100 „ „ 5 „

7th „ 105 „ „ 5 „

9th „ 125 „ „ 5 „

11th „ 100 „ „ 5 „

13th „ 125 „ „ 5 „

There is less heartburn, and on the left side there is a distinct depression between the chest wall and the tumour. The patient is able to sleep better.

16th July.—135 milliampères for 5 minutes.

18th „ 125 „ „ 5 „

The period has just begun. The tumour has never been so small, and there is a depression between it and the sternum, as well as on both sides.

23rd July.—125 milliampères for 5 minutes.

The period has been much as it used to be before the treatment was begun.

25th July.—120 milliampères for 5 minutes.

27th „ 110 „ „ 5 „

30th July.—110 milliampères for 5 minutes.

1st August.—110 " " 5 "

3rd " 125 " " 5 "

6th " 115 " " 5 "

The tumour is quite free of the ribs, and does not seem to be half the size it formerly was.

Extract from letter, dated 28th September.—“Just a few lines to tell you I have returned from North Wales, and am feeling much better and stronger than when you saw me last, early in August. I have had two severe periods, which weakened me for the time; but I have been very free from pain, and can sleep so much better. My friends here say I am looking so different, and I feel I have gained so much in nerve lately. I can also walk better, and the veins have not been so troublesome.”

7th December.—“I cannot express all the gratitude I feel for my improved health. I am glad to tell you that I am slightly smaller since I saw you, and find I am 29 inches only round the waist,—in August I measured 35 inches, so I am really now not at all remarkable in figure, and much more comfortable.”

July 1889.—The lady is not so well as she was in December last, and has still a great deal of discomfort during the periods. The tumour is also larger than it was at that time. In every way she is better than she was eighteen months ago, but we propose to further reduce the size of the mass by some treatment.

CASE XC.—Single, age 36; was sent by Dr Lett, of Wakefield, in May 1888.

For ten years there has been an excessive loss of blood at the periods, and eight years ago the tumour was first noticed. The periods last six days usually; for two of these the loss is very great, and the patient is confined to bed for two or three. Sixty or seventy diapers are always

required. As the flow ceases there is great sickness accompanied by pain, and for this she has required to have hypodermic injections of morphia for two or three days every month. Between the periods there is an almost constant and profuse leucorrhœal discharge, and the lady is seldom dry for even a few hours together.

As far as strength goes, she can walk well, but even on level ground she cannot go far, as severe palpitation is set up.

The patient is seen to be terribly anæmic, and on examining the abdomen the tumour, which is not specially prominent, is found to extend up to well under the ribs and sternum. The sound passes fully 6 inches.

Dr Lett writes that the tumour has been growing more rapidly of late. Everything in the shape of drugs has been tried without any permanent effect, with the exception of the morphia, which is required for the sickness.

The treatment consisted in thirty positive applications.

18th May.—40 milliamperes for 5 minutes.

12th June.—80 " " 5 "

A severe cold has prevented anything being done for the last three weeks. In the meantime, the period has been got over rather more easily than usual.

14th June.—85 milliamperes for 5 minutes.

16th " 95 " " 5 "

19th " 85 " " 5 "

The patient thinks that she begins to feel a little better and stronger.

21st June.—110 milliamperes for 5 minutes.

23rd " 135 " " 5 "

25th " 110 " " 5 "

27th " 125 " " 5 "

11th July.—85 " " 5 "

The period this month has been better in every way—

less hæmorrhage, pain, and sickness ; and it was five days later than it should have been.

13th July.—100 milliampères for 5 minutes.

17th „ 75 „ „ 5 „

There was an attack of diarrhœa yesterday, and to-day the tumour is tender to the touch.

19th July.—110 milliampères for 5 minutes.

21st „ 135 „ „ 5 „

There is seldom any palpitation while walking on level ground now.

23rd July. —135 milliampères for 5 minutes.

25th „ 120 „ „ 5 „

27th „ 80 „ „ 5 „

4th August.—95 „ „ 5 „

There has been as much flow as last time, but unaccompanied by sickness and palpitation. The patient feels stronger, and has a little colour.

6th August.—90 milliampères for 5 minutes.

11th „ 115 „ „ 5 „

13th „ 85 „ „ 5 „

15th „ 110 „ „ 5 „

17th „ 120 „ „ 5 „

21st „ 120 „ „ 5 „

The lady is very well, and goes to the seaside for a month, so as to have a change before the summer is over.

27th September.—90 milliampères for 5 minutes.

There was so little pain at the last period that only one morphia pill had to be taken. The quantity of discharge was rather more than half what it used to be before the treatment.

29th September.—100 milliampères for 5 minutes.

1st October. — 80 „ „ 5 „

3rd „ 75 „ „ 5 „

5th „ 100 „ „ 5 „

8th „ 90 „ „ 5 „

The patient says that she feels quite well, and able to do anything.

Extract from letter dated 28th August 1888 :—"I think I have a very good report to give of myself on the whole. I began as usual two days too soon, and the hæmorrhage seems to be the stubborn point with me. The first two days I thought I was going to be wonderfully better in that respect, but it went on longer, and consequently I don't think I had any less than the time before. In every other respect I am very much better. No morphia injected (I think I have only been without it about three times in eight years). No sickness ; certainly decreasing in size, indeed 'getting a figure,' and, of course, less weakness afterwards. I think I have got nearly as much faith in electricity now as you have."

24th September 1888.—"I have nothing but good to report."

21st November 1888.—"I have not any rapid progress to report, but on the whole it is fairly satisfactory, I think. The last period I had a little more in quantity than the time before. Last time I had about fifty-six diapers, the time before about forty-three ; but that is the worst point in my case. The pain keeps marvellously better, and I have not had any morphia injected. Each time I had two or three little pills with morphia, which was quite enough to check the pain I had. It does not continue as it did either, only as a rule lasting a few hours—about twenty-four after I have begun. Dr Lett measured me after I had got over the worst, and he found me 4 inches less than I was. Everything but the hæmorrhage seem to be going on satisfactorily ; that, of course, is still more than it should be. I feel very well in between."

On 10th December Dr Lett wrote :—"Her periods are much better—fairly free from pain and nausea—but the hæmorrhage is still excessive. Internal remedies have been all tried, and failed."

On the 15th February 1889 we had the following account:—"Miss ——'s last few periods have been marked by nausea, continuing from the second day for six or seven days; also neuralgic headache, the effect apparently of anæmia. I think the hæmorrhage last time was not in the aggregate so profuse as in the old days before you saw her; but last time it was very profuse indeed during twelve hours. I suppose the total number of 'changes' is one-quarter less, but the constitutional effect is not less. Pain is now quite trifling.

"The last period but one was peculiar. After a fair beginning, she felt nearly well about the fourth day, and got up and about—all the time with nausea and a feeling of 'not getting well nicely;' occasionally passing a small elongated clot, with nearly white discharge between. When I saw her she was decidedly ill, and was sent to bed. Next day there were pain and tenderness over the tumour, especially at one circumscribed spot, above and in front, where I found fluctuation (this has gone). Temperature, $102^{\circ}2$; pulse, 124; and vomiting. Very like metritis. She was not perfectly free from occasional pink discharge for a fortnight after the beginning of menstruation, and the next (the last) period began five weeks after the other. One week late for the first time in her experience."

The patient was seen again on the 16th February, and it was decided to wait for at least one other period before doing anything more. The tumour did not extend up to the ribs at any point.

9th March 1889.—"I believe in electricity!! Here is my report. I came from Eastbourne feeling splendid, and looking a new creature. My period came on on Monday morning; pain soon subdued; no sickness; and only thirty-six diapers in all; and four days only it lasted. It went yesterday morning. I have stayed in bed, for I have feared to spoil the record. I do believe now I

shall go on to perfection. My body is perfectly soft and natural."

8th May.—Since the last note there has been but one period after an interval of seven weeks. There was not any pain, and the loss was comparatively little, not more than twenty diapers being required, and the lady was going about the whole of the time. She says that she is perfectly well, and that the tumour is becoming smaller.

CASE XCI.—Single, age 40, was first seen in May 1888.

The history dated back to two years ago, when the lady finds that she had noted down that she was losing more blood at the monthly periods than was habitual with her, and that instead of lasting seven days the flow continued for nine. Eight months ago the tumour was first noticed, and during the last two months it has been growing with great rapidity. Lately there has been a painful tired feeling across the back, and discomfort in the right leg and hips. For a week or so before the appearance of the menstrual flow, the patient is much troubled by flatulence and discomfort after eating. It is not, however, so much on account of the present symptoms that the patient is anxious to have some treatment, but is owing chiefly to having seen the great suffering, which these fibroid tumours of the uterus may cause, in the person of an older sister, who has quite lately undergone a six months' course of electrical treatment, apparently after Apostoli's method. This sister is improving; but as the treatment and the menopause came about the same time, it is probable that the latter has as much to do with the improvement as the former.

The tumour reaches up to the margin of the ribs all round, and is decidedly prominent.

25th May 1888.—100 milliampères for 5 minutes.

28th " 110 " " 5 "

30th " 120 " " 5 "

2nd June.—120 milliampères for 5 minutes.

4th " 130 " " 5 "

6th " 150 " " 5 "

The tumour appears to be rather smaller, and there is scarcely so much dyspepsia as usual about this time.

16th June.—125 milliampères for 5 minutes.

There has been more flow than usual, and accompanied by more pain; the usual headache has not been so bad.

18th June.—130 milliampères for 5 minutes.

20th " 110 " " 5 "

The tumour is now quite free of the ribs. To-day the internal sound was made negative instead of positive, as it has been before.

22nd June.—140 milliampères for 5 minutes.

2nd July.—100 " " 5 "

There has been more than the average amount of bleeding.

11th July.—90 milliampères for 5 minutes.

13th " 110 " " 5 "

16th " 135 " " 5 "

18th " 110 " " 5 "

The tumour is smaller, and the patient is more comfortable.

20th July.—125 milliampères for 5 minutes.

23rd " 120 " " 5 "

25th " 120 " " 5 "

27th " 110 " " 5 "

13th Aug.—85 " " 5 "

In every way the period has been better, and the patient feels well.

15th August.—105 milliampères for 5 minutes.

18th " 105 " " 5 "

22nd " 100 " " 5 "

28th " 125 " " 5 "

The period has been much the same as the last.

30th August. —125 milliampères for 5 minutes.

1st September.—125 " " 5 "

3rd " 145 " " 5 "

5th " 125 " " 5 "

7th " 125 " " 5 "

16th " 125 " " 5 "

The tumour extends to barely 2 inches above the umbilicus, and does not reach more than 3 inches to the left of the middle line.

March 1889.—At first the patient was in every way much better, but for the last two months there has been much more discomfort, with a return of the old symptoms. The tumour is larger than when seen some months ago, and reaches to fully 3 inches above the umbilicus.

5th March.—60 milliampères for 5 minutes.

7th " 100 " " 5 "

9th " 90 " " 5 "

11th " 100 " " 5 "

13th " 100 " " 5 "

15th " 110 " " 5 "

18th " 120 " " 5 "

2nd April.—100 " " 5 "

The period has been very much as usual.

4th April.—105 milliampères for 5 minutes.

6th " 105 " " 5 "

8th " 105 " " 7 "

10th " 110 " " 7 "

12th " 125 " " 7 "

In the meantime the treatment is to be discontinued, but will probably be recommenced later on.

CASE XCII.—Married, age 59, was seen with Dr Robson Roose.

This lady has suffered for many years from constipation. She has tried every known drug and every known method

of treatment, and nothing has ever been of the slightest service, and the bowels are now moved with great difficulty by the help of very copious injections. Dr Allan of Brighton was the first to suggest that the original cause of the constipation might have been the presence of an uterine fibroid, which had never apparently given rise to any trouble. Dr Roose concurred, and the lady was willing to try the experiment and have the tumour reduced in size. It was determined to make fifteen negative applications, and to wait and see if there were any improvement before continuing with the treatment.

The tumour itself was of stony hardness, and was situated in the left side, extending up to 2 inches above the level of the anterior iliac spine. It was absolutely immovable, and appeared to be almost continuous with the iliac bone. From the vagina, also, not any movement could be felt.

6th June 1888.— 50 milliampères for 5 minutes.

<i>8th</i>	"	65	"	"	5	"
<i>11th</i>	"	75	"	"	5	"
<i>13th</i>	"	75	"	"	5	"
<i>15th</i>	"	100	"	"	5	"
<i>18th</i>	"	100	"	"	5	"
<i>20th</i>	"	115	"	"	5	"
<i>22nd</i>	"	135	"	"	5	"
<i>23rd</i>	"	135	"	"	5	"
<i>25th</i>	"	115	"	"	5	"
<i>27th</i>	"	130	"	"	5	"
<i>29th</i>	"	135	"	"	5	"
<i>30th</i>	"	135	"	"	5	"
<i>2nd July.</i>	—	150	"	"	5	"
<i>3rd</i>	"	150	"	"	5	"

The tumour is now up to the level of the anterior iliac spine, and is not quite so fixed.

November.—Although the constipation has not improved,

both the lady and her doctor wish to repeat the course of treatment, as there has been a marked improvement in the condition of the tumour. It is now quite separate from the bone, and the patient's masseuse has remarked that there is now a hollow between the ilium and the tumour.

9th November.— 85 milliampères for 5 minutes.

<i>10th</i>	"	90	"	"	5	"
<i>12th</i>	"	70	"	"	5	"
<i>13th</i>	"	75	"	"	5	"
<i>15th</i>	"	140	"	"	5	"
<i>17th</i>	"	125	"	"	5	"
<i>19th</i>	"	125	"	"	5	"
<i>20th</i>	"	135	"	"	5	"
<i>23rd</i>	"	125	"	"	5	"
<i>24th</i>	"	125	"	"	5	"
<i>26th</i>	"	110	"	"	5	"
<i>27th</i>	"	130	"	"	5	"
<i>29th</i>	"	120	"	"	5	"
<i>1st December.</i>		125	"	"	5	"
<i>3rd</i>	"	145	"	"	5	"

The tumour is now freely movable. It does not reach up to within 2 inches of the level of the anterior iliac spine, and the hand can be passed between it and the tumour.

June 1889.—The general health is much improved.

CASE XCIII.—Married, age 45, was sent by Dr Matthews Duncan.

The patient had suffered for several years from gradually increasing debility, due chiefly to the presence of a small fibroid tumour of the uterus, which gives rise to excessive losses at the periods.

The fundus was found to reach to 2 inches above the pubes, and it was difficult to introduce the sound on account of the position, and also to a flexion of the cervix.

2nd June 1888.—50 milliampères for 5 minutes.

14th " 50 " " 5 "

16th " 50 " " 5 "

19th " 60 " " 5 "

The lady is rather better, and her maid says that she is certainly stronger.

21st June.—55 milliampères for 5 minutes.

23rd " 65 " " 5 "

25th " 75 " " 5 "

There has been a decided improvement in the general condition.

27th June.—75 milliampères for 5 minutes.

29th " 55 " " 5 "

10th July.—65 " " 5 "

The period has been much better than usual.

13th July.—60 milliampères for 5 minutes.

16th " 60 " " 5 "

18th " 50 " " 5 "

20th " 50 " " 5 "

The lady was very anxious to get out of town, and was to come back to renew the treatment if she did not continue to improve. She was never able to bear a strong current, and it will be observed that the average strength of the fourteen applications was scarcely 60 milliampères. In every case the sound was made positive.

CASE XCIV.—Single, age 47 ; was seen first in June 1888.

The history may be best given in the patient's own words :—" After six or seven years of excessive hæmorrhage and rather quick periods, I had very violent discharges with very large clots, and on 31st March 1886 Dr Godson was telegraphed for, and he plugged me. During the remainder of that year I had regular but excessive periods, and was in bed a week each time. During 1887 much longer times of

hæmorrhage, and seldom free more than three or four weeks. During the last Christmas holidays I was only out of my room seven times in four weeks. From January 15th to May 15th I have spent about eight weeks in bed or on my couch, and now I am getting bad again."

The patient is a big-made woman ; decidedly anæmic. She says that she cannot walk farther than a hundred yards, partly on account of weakness, and partly from a very severe pain in the back, which walking or driving sets up.

On account of the thickness of the abdominal wall, it is not easy to feel the tumour, which, however, extends up to above the umbilicus. The sound passes $5\frac{1}{2}$ inches, and the cavity is large from side to side.

14th June 1888.—75 milliampères for 5 minutes.

16th " 80 " " 5 "

19th " 85 " " 5 "

21st " 75 " " 5 "

23rd " 85 " " 5 "

Is a little stronger, and has not quite so much backache

25th June.—85 milliampères for 5 minutes.

27th " 85 " " 5 "

29th " 90 " " 5 "

2nd July.—90 " " 5 "

4th " 100 " " 5 "

6th " 95 " " 5 "

Friends notice that the patient is looking much better.

9th July.—100 milliampères for 5 minutes.

11th " 100 " " 5 "

13th " 100 " " 5 "

To-day was the first application, after which there was not any backache ; and yesterday the lady had what she now considers a good long walk.

16th July.—100 milliampères for 5 minutes.

18th " 110 " " 5 "

20th " 90 " " 5 "

23rd July.—125 milliampères for 5 minutes.

25th „ 110 „ „ 5 „

27th „ 125 „ „ 5 „

30th „ 130 „ „ 5 „

1st August.—115 „ „ 5 „

Yesterday the lady walked further than she has been able to do for the last two and a half years.

3rd August.—115 milliampères for 5 minutes.

11th „ 110 „ „ 5 „

The red discharge lasted for one day only, and was followed by a profuse leucorrhœal flow. There was little discomfort, and the tumour is smaller.

13th August.—115 milliampères for 5 minutes.

15th „ 95 „ „ 5 „

17th „ 120 „ „ 5 „

There is some decidedly foetid discharge. On the 23rd inst. a mass, described as looking like a piece of tumour, came away, and this was followed by rapid improvement both in the quantity and character of the discharge.

Extracts from letters :—

17th September.—“ I have been waiting to report myself until I could send a clean bill of health. I think I may do so now, as I feel better in every way, and have only a little white discharge. Of course I feel pretty tired by the time evening comes.”

13th November.—“ I had seven such good weeks—so well and comfortable—able to get up and down stairs each day. I was waiting then to write to you until some sort of period came. On the 2nd there was a small commencement, and the next three days still quite a normal quantity. I ventured out, and in the evening I had pain, deluge, and two clots; next day rather violent too. Thursday—I syringed away two clots. Friday—a little better. Saturday—twelve hours of acute backache; and on Saturday night such a hæmorrhage, all through Sunday and Monday.

To-day—decreasing ; but, instead of being clear, bright red, it is muddy and offensive. Disappointing, isn't it ?”

4th March 1889.—“ I am recovering from another terrible time of tribulation. I had a quiet, normal sort of period towards the end of January ; and after a few days I had the most terrible pains, all around my loins and nearly down to my knees, lasting many hours at a time. It was so acute that it seemed as if all the veins and muscles in those parts were being tightly drawn out. This was all accompanied by great lumps of discharge, and lasted two and a half weeks (from 2nd to 20th of February), and then I began to get better. I had to get my doctor several times. I could not bear the pain. He gave me opium pills.”

13th May.—The last period has been very much better, and the patient feels now that she is making progress. The tumour is about one-third less than it was before treatment.

CASE XCV.—Married, age 27, was first seen in July 1888.

This lady was not aware that there was anything the matter with her pelvic organs, until she had a miscarriage a year ago. Since that time, there has been more flow at each succeeding menstrual period, and there is also more or less pain complained of in the left side. She has come home from South America for a few months, and is most anxious to be made quite well before she returns, more especially as she is very much troubled with asthma. A month or six weeks ago the tumour was examined both by a practitioner in the country, and by the obstetric physician of one of the large hospitals. Both of those gentlemen passed a sound, and both found that it entered to a depth of $4\frac{1}{2}$ inches. We found that a sound passed 6 inches, so that the tumour either was growing with great rapidity, or what is more likely is, that measurements made by different people, or even by the same person at different times, cannot always

be relied on. The sound appeared to have entered as far as it would go at $4\frac{1}{2}$ inches, and then by a little manipulation it was found that the direction of the cavity changed, and that the sound passed for another inch and a half. This shows the fallacy of insisting on a reduction in the size of a cavity before a satisfactory result can be claimed. The tumour, immediately after menstruation, extended up to 1 inch above the umbilicus.

As the lady's time in this country was short, she went out visiting and to theatres, exactly as she would have done had she been quite well. A greater number of applications than the average were made, simply because the patient had so far to go home, and could not have more of the treatment if required. There were in all thirty-eight, the sound being attached to the positive pole of the battery.

7th July 1888.—100 milliampères for 5 minutes.

10th „ 120 „ „ 5 „

12th „ 120 „ „ 5 „

14th „ 135 „ „ 5 „

17th „ 135 „ „ 5 „

The tumour is smaller than it has yet been.

19th July.—145 milliampères for 5 minutes.

21st „ 175 „ „ 5 „

23rd „ 170 „ „ 5 „

25th „ 150 „ „ 5 „

28th „ 150 „ „ 5 „

The period has been bad for only two days.

31st July. —135 milliampères for 5 minutes.

2nd August.—130 „ „ 5 „

6th „ 110 „ „ 5 „

14th „ 100 „ „ 5 „

There has been a good deal of colicky pain in the womb for the last few days.

16th August.—100 milliampères for 5 minutes.

18th „ 120 „ „ 5 „

21st August.—105 milliampères for 5 minutes.

23rd " 120 " " 5 "

The period is just on, and the tumour has not swelled up to as high as the umbilicus.

25th August.—105 milliampères for 5 minutes.

28th " 135 " " 5 "

30th " 135 " " 5 "

The lady feels very well, and the tumour continues to decrease.

4th September.—120 milliampères for 5 minutes.

6th " 140 " " 5 "

8th " 135 " " 5 "

11th " 110 " " 5 "

13th " 135 " " 5 "

15th " 125 " " 5 "

18th " 120 " " 5 "

22nd " 120 " " 5 "

The period is over ; there was not so much, but there were clots. The tumour has never been noticed to be so small as it now is.

25th September.—120 milliampères for 5 minutes.

27th " 130 " " 5 "

2nd October. —150 " " 5 "

4th " 120 " " 5 "

6th " 125 " " 5 "

9th " 115 " " 5 "

11th " 115 " " 5 "

13th " 110 " " 5 "

20th " 120 " " 5 "

The period has been much the same as the last. The cavity measures 5 inches. At about 4 there is the obstruction which has always been felt.

The lady went home to South America, and wrote on 17th January 1889,—“I think, on the whole, I may say I am fairly well, though I must confess that such a complaint

as mine is a decided 'thorn in the flesh,' and gives me a good deal of inconvenience and pain. In December I was certainly better ; but this month I had a bad time, so naturally feel somewhat depressed."

At the end of three months or so, it is not at all uncommon to get an account such as this.

CASE XCVI.—Single, age 44, was first seen with the late Dr Sidey some years ago.

When about the age of 32, it was noticed that the losses every month were increasing, and eight years ago the lady first became aware of the presence of a tumour in the abdomen. For a great many years there has been a very bad pain in the right side, and at times the flooding and the pain have both been so severe that the patient did not dare to move, and only obtained relief after a three-quarter grain dose of morphia had been injected under the skin. There were several reasons which prevented this lady seeking relief by operation, though she was often almost forced to have something done. Two years ago she was sent to Spain for several months, and returned very much improved in every way—less pain, less hæmorrhage, and stronger generally. This improvement was, unfortunately, of a temporary character, and before long the lady was back again to the old condition of anæmia and weakness.

In July 1888 the tumour was found to extend to two inches above the umbilicus. It was very prominent, and on the right side it extended very far back into the loin, and appeared to be immovably fixed in that position. The tumour filled the whole of the pelvis, coming quite low down. There was no cervix, and the os uteri was felt to be situated rather more in front than usual. The cavity was large, but it appears that its exact depth was never recorded.

The treatment consisted in twenty-five applications, during all of which the sound was made positive.

24th July 1888.—80 milliampères for 5 minutes.

26th " 80 " " 5 "

28th " 80 " " 5 "

1st August 85 " " 5 "

3rd " 85 " " 5 "

6th " 80 " " 5 "

11th " 95 " " 5 "

After every application there is a very considerable amount of backache complained of for several hours, and it is worthy of note that though this lady was able to suffer great pain without making much complaint, yet she could not stand a strong current of electricity. The tumour is smaller and is somewhat movable.

13th August.—85 milliampères for 5 minutes.

15th " 120 " " 5 "

17th " 75 " " 5 "

20th " 125 " " 5 "

23rd " 130 " " 5 "

The tumour has partly rotated; there is now some slight appearance of a cervix, which is situated rather farther back in the pelvis than natural. On account of the altered position of the tumour, the patient was assured that she would not have any backache.

25th August.—150 milliampères for 5 minutes.

There was not any backache after the last application. The tumour does not reach up to the umbilicus, and has become lobulated.

27th August.—115 milliampères for 5 minutes.

The tumour appears to have become smaller in the last two days, and instead of there being a mass fixed in the right side, that flank is now entirely free of tumour.

31st August.—75 milliampères for 5 minutes.

Menstruation has come on freely, and for the first time for many years there has been neither pain nor sickness; and, although the sickness usually prevents

the patient taking food for three days, she has not missed a meal.

10th September.—100 milliampères for 5 minutes.

On the 1st of the month, the lady, thinking that the period was over, went out for a walk, but had not gone far, when she was seized with a severe pain in the tumour, and had to drive home at once. The flow returned, and on two occasions morphia had to be injected.

12th September.—100 milliampères for 5 minutes.

14th " 100 " " 5 "

17th " 100 " " 5 "

19th " 80 " " 5 "

21st " 50 " " 10 "

29th " 65 " " 5 "

The loss has been decidedly great, but unaccompanied by either pain or sickness.

1st October.—115 milliampères for 5 minutes.

3rd " 140 " " 5 "

5th " 100 " " 5 "

The tumour is now less than half the size it was in July.

6th October.—Bleeding came on during the night, and was accompanied by severe pain.

9th.—The hæmorrhage has been very profuse, and morphia has had to be injected four times. The tumour has been steadily swelling up, and is to-night as large as it was before the commencement of the treatment.

10th.—The patient woke about four A.M., and found to her astonishment that the tumour was not half the size it had been when she went to sleep, although there had been less discharge, and no clots had been passed.

18th.—Went home to Edinburgh, looking certainly more ill than she did, when she left it three months before.

After getting home there were two bad periods. By the 21st January 1889 she was able to write,—“It means a different life for me, what you have done.”

13th April.—“Every day I announce to myself that it is a miracle—no more and no less. I am perfectly well, gradually getting quite active, and have a permanent colour. I think there have been two periods since New Year, but so slight that I scarcely recognise them as such. Before the last, the tumour had got very small; then at the period it was distended a little, but is beginning to go down again. Its being distended was about the only thing by which I knew it was a period. You remember what an object I was at the end of the treatment, and now I think I am just as much the other way.”

3rd May.—Looks splendidly well, and says that it is at least twelve years since she felt as she does now, and tells me that she has been working hard all winter.

CASE XCVII.—Married, age 45, came over from Boulogne in the beginning of August 1888.

This patient had always been a fragile, delicate woman, and for twenty years has been unable to live in England on account of bronchitis, asthma, and occasional attacks of pleurisy.

For some eight or ten years there has been menorrhagia, which had been increasing steadily year by year. Six years ago, the tumour was first noticed, and it is slowly growing larger and larger, and is now, she thinks, beginning to affect her breathing. The periods last, as a rule, for fourteen days, and the increased flow is a serious drain under the circumstances, though a strong woman would not be much affected by it. A frequent desire to pass water is also much complained of.

The tumour extends to 2 inches above the umbilicus, and descends very far into the pelvis, and presses on the bladder. There is not any cervix, and the os is reached with some little difficulty. The whole of the right side of the abdomen is tender.

3rd August.—50 milliampères for 3 minutes.

6th " 50 " " 3 "

13th " 45 " " 4 "

15th " 45 " " 4 "

25th " 70 " " 5 "

The period is over, and has been very much the same as usual.

27th August. —60 milliampères for 5 minutes.

29th " 60 " " 5 "

31st " 55 " " 5 "

3rd September.—65 " " 5 "

5th " 70 " " 5 "

7th " 70 " " 5 "

There is perhaps a little improvement in the general condition, and the tumour is certainly smaller.

10th September.—65 milliampères for 5 minutes.

12th " 55 " " 5 "

20th " 75 " " 5 "

The period has been again much the same.

22nd September.—60 milliampères for 5 minutes.

27th " 55 " " 5 "

There has been a great deal of pain complained of in the tumour.

29th September.—80 milliampères for 5 minutes.

1st October. —60 " " 6 "

There has been a marked improvement in comfort in the last few days.

3rd October.—65 milliampères for 5 minutes.

5th " 80 " " 5 "

8th " 65 " " 5 "

16th " 70 " " 5 "

18th " 70 " " 5 "

There was not any improvement in the period this month in the amount of hæmorrhage. The tumour is now barely up to the umbilicus, and is fully one-third smaller than it

was. The lady fears to remain in London longer, and goes to Falmouth for the winter.

27th November.—"You may possibly be expecting a report from me of myself, but I really have nothing good to say. After I came here, the period came on, nine days too soon, and the next time, fifteen days too soon, and it has not ceased at all, nor seems likely to do so. The loss has been far greater than ever in my life."

27th February 1889.—"Since I wrote you, nearly three months since, I have steadily grown worse—loss greater, period longer."

In April this lady came back to town, and the menstrual flow did not appear for five weeks, and the quantity was comparatively slight. An attempt was made to continue the treatment. The passage of the current could not be borne, unless while the lady was under the influence of morphia. Unfortunately, however, the action of the drug, which had to be given in large doses, was too depressing, and also caused considerable œdema of the lungs.

In May, there was a greater loss, but almost no pain, and it was considered advisable to send the patient to the country, as she is unable to be out of the house for the seven or eight cold months of the year.

The tumour is slightly larger than it was in October of last year; though still much smaller than it was before treatment.

CASE XCVIII.—Married, age 46, was seen with Dr Straton of Wilton in August 1888.

The patient had been aware of the presence of a tumour in the abdomen for about nine years. At first it gave rise to little or no inconvenience, but of late years it has caused a great deal of discomfort and pain. Within the last two months the growth has been so rapid that dresses have had

to be let out six inches. The pain has been so acute on the left side for the last five or six weeks that poultices have had to be kept almost constantly to the part. There has not been any menorrhagia.

The tumour is a very large one, and its weight is probably nearer forty than thirty pounds. It is immensely broad from side to side, and extends very high up under the ribs and sternum, raising the thoracic wall enormously. The tumour extends deeply into the pelvis, and an enormous artery is felt close to the cervix, which is itself small, and situated well up on the right side. The cavity measures about 5 inches. The weight of the mass has prevented the patient taking much exercise, and since the rapid increase in size a couple of months ago, she has been scarcely able to walk.

The treatment consisted in thirty applications, in all of which the sound was made negative. The strength of current was never great, averaging slightly over 90 milliamperes.

4th August.—45 milliamperes for 5 minutes.

6th " 45 " " 5 "

11th " 45 " " 5 "

Feels certain that she is stronger, and can move about rather more easily.

13th August.—60 milliamperes for 5 minutes.

15th " 75 " " 5 "

For the first time for fully two months the patient was able to go out for a short walk, and there is less pain.

17th August.—85 milliamperes for 5 minutes.

20th " 55 " " 5 "

There has been a decided increase in the amount of pain in the tumour, but unaccompanied by any inflammatory symptoms.

25th August.—75 milliamperes for 5 minutes.

There has been an easy period, with rather more discharge

than usual. There is a marked decrease in the amount of bulging in the flanks ; the patient can button a dress which was much too tight for her a couple of weeks ago, and there has not been any pain at all for two days.

27th August.—95 milliampères for 5 minutes.

29th " 95 " " 5 "

31st " 100 " " 5 "

The skin over the tumour is much less tense than it was.

3rd September.—110 milliampères for 5 minutes.

5th " 125 " " 5 "

7th " 100 " " 5 "

The tumour is almost free of the ribs.

13th September.—100 milliampères for 5 minutes.

There has been again rather a greater loss than usual.

15th September.—130 milliampères for 5 minutes.

17th " 110 " " 5 "

19th " 100 " " 5 "

21st " 115 " " 5 "

24th " 110 " " 5 "

The patient says that she feels very well, and the tumour continues to decrease rapidly in size.

26th September.—100 milliampères for 5 minutes.

28th " 110 " " 5 "

1st October. — 90 " " 5 "

3rd " 115 " " 5 "

5th " 110 " " 5 "

9th " 110 " " 5 "

13th " 80 " " 5 "

15th " 70 " " 5 "

17th " 70 " " 5 "

19th " 75 " " 5 "

The tumour is not half the size it was, and the improvement in the general condition and appearance is so great, that a friend remarked, that surely the days of miracles had returned.

2nd December 1888.—“ I am sorry I cannot give a good report of myself. I am not nearly so well as when I left London ; in fact, I have been obliged to spend most of my time in bed, as when I walk or move about I have such a bad dragging pain in the left side.”

6th February 1889.—“ I am pleased to tell you I am so much better than when I wrote last ; in fact, the first fortnight of the month I feel quite well, and my stomach is so much smaller. For the next ten days it gets larger, with some pain in my left side ; but each month there is less pain, and the tumour itself is much smaller.”

May.—“ I am pleased to tell you I feel much better and stronger in myself, and my stomach is much smaller three weeks at a time ; but the fourth week it gets very large, and a good deal of pain ; but every one says how much better I am looking.”

CASE XCIX.—Single, age 39, was sent by Dr Wilson, of Gateshead, in October 1888.

For several years the general health had not been at all good, and increase of menstrual discharge led to the discovery of a fibroid tumour of the uterus three years ago. The patient says that she feels tired, if she exerts herself, even slightly, and that she has a constant feeling of fulness with discomfort and pain especially during menstruation. Sleeps badly. The tumour extends to two inches above the umbilicus on the left side, and on the right it almost touches the ribs. It is slightly irregular in outline. The tumour descends deeply into the pelvis, the cervix is far back, and the passage of the sound is not easy.

11th October 1888.—70 milliampères for 5 minutes.

<i>13th</i>	„	60	„	„	5	„
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<i>15th</i>	„	85	„	„	5	„
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<i>17th</i>	„	65	„	„	5	„
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Is already sleeping better.

19th October.—90 milliampères for 5 minutes.

22nd „ 70 „ „ 5 „

The lady thinks that the tumour is smaller, and she says that she feels better.

2nd November.—75 milliampères for 5 minutes.

There has been fully as great a loss as usual.

5th November.—65 milliampères for 5 minutes.

7th „ 75 „ „ 5 „

9th „ 85 „ „ 5 „

The tumour is smaller and the lady feels stronger.

12th November.—80 milliampères for 5 minutes.

14th „ 90 „ „ 5 „

16th „ 95 „ „ 5 „

26th „ 65 „ „ 5 „

The period has been much easier than usual, and there has not been any headache. This has been, of late years, a constant accompaniment of menstruation.

30th November.—80 milliampères for 5 minutes.

3rd December.—95 „ „ 5 „

5th „ 80 „ „ 5 „

9th „ 70 „ „ 5 „

10th „ 70 „ „ 5 „

On the left side in particular, there is a marked lessening of the tumour.

19th December.—85 milliampères for 5 minutes.

The patient is in capital spirits, as she has had the best period for quite a number of years, and there has not been any headache.

21st December. — 100 milliampères for 5 minutes.

24th „ 80 „ „ 5 „

26th „ 80 „ „ 5 „

28th „ 70 „ „ 5 „

9th January 1889. — 55 „ „ 5 „

There has been rather a greater flow of blood this time, but in spite of it, the lady feels very well.

11th January.—60 milliampères for 5 minutes.

14th " 70 " " 5 "

16th " 60 " " 5 "

18th " 85 " " 5 "

23rd " 60 " " 5 "

25th " 75 " " 5 "

Is now very well. On the right side the tumour is not within $2\frac{1}{2}$ inches of the ribs, and does not extend so far towards the back. On the left, there is a clear space between the ilium and the tumour, and the growth has become more lobulated.

10th July.—To-day the lady called to say how well she was, and said that it was such a comfort to go about and not have the old tired feeling. She said that the tumour was becoming smaller.

CASE C.—Single, age 40, sister of the lady whose case is No. XCIX., was sent by Dr Wilson of Gateshead.

For several years the patient has not felt well; she is always tired, and instead of being an active woman is slowly but steadily becoming an invalid. While she is not what might be called ill, yet she is unable to have much pleasure in living. There is not any menorrhagia. On examination, the tumour is found to be of moderate size, extending up to the umbilicus.

Though older than her sister, the tumour is either of later or of slower growth. Like her, she was not able to bear a strong dose of electricity; the average in the older lady being scarcely 80 milliampères, while in the younger it was slightly over 75. In both, the sound was always attached to the positive pole, and both are entirely pleased with the result of the treatment.

24th October 1888.—60 milliampères for 5 minutes.

26th " 75 " " 5 "

29th " 80 " " 5 "

31st October. —85 milliampères for 5 minutes.

2nd November. —85 " " 5 "

7th " 85 " " 5 "

16th " 75 " " 5 "

An easy period, unaccompanied by headache.

19th November.—65 milliampères for 5 minutes.

21st " 75 " " 5 "

Dr Wilson was in town, and was much pleased with the progress that had been made.

23rd November.—80 milliampères for 5 minutes.

26th " 85 " " 5 "

30th " 80 " " 5 "

The lady and her sister should have had an application on the 28th, but they could not come, as they had some friends staying with them, and had too much to do!

3rd December.—85 milliampères for 5 minutes.

5th " 80 " " 5 "

17th " 70 " " 5 "

Again there has not been any disturbance at the period.

19th December. —95 milliampères for 5 minutes.

21st " 80 " " 5 "

24th " 85 " " 5 "

26th " 80 " " 5 "

28th " 85 " " 5 "

18th January 1889.—75 " " 5 "

23rd " 70 " " 5 "

10th July.—Says that she is very well.

CASE CI.—Married, age 30, was recommended by Dr John Duncan of Edinburgh, and was first seen in October 1888.

A tumour was discovered after the birth of one of the children three years ago. In May a dead child was born, and since then there has been too much blood lost

every month. The tumour is said to be growing rapidly. For ten years there has been dysmenorrhœa, and of late the pain has been getting much worse.

The tumour reaches to within 2 inches of the umbilicus, and extends far out on the right side, and has probably opened up the broad ligament.

18th October 1888.—100 milliampères for 5 minutes.

20th	"	100	"	"	5	"
22nd	"	75	"	"	5	"
24th	"	100	"	"	5	"
26th	"	120	"	"	5	"
3rd November.	—	100	"	"	5	"

There has been rather less flow, and accompanied by less pain, than for ten years.

5th November.—120 milliampères for 5 minutes.

7th	"	140	"	"	5	"
9th	"	145	"	"	5	"
12th	"	145	"	"	5	"

The lady feels sleepy and disinclined for exertion in the afternoons of the days on which she has the treatment.

14th October.—145 milliampères for 5 minutes.

16th	"	140	"	"	5	"
19th	"	150	"	"	5	"
21st	"	155	"	"	5	"
23rd	"	155	"	"	5	"
4th December.	—	135	"	"	5	"

The period has been much the same as usual, except that there was less pain. The lady is to come up to town three times a week, a distance of one hour by train.

8th December.—105 milliampères for 5 minutes.

11th	"	125	"	"	5	"
13th	"	110	"	"	5	"
18th	"	110	"	"	5	"
20th	"	150	"	"	5	"
22nd	"	140	"	"	5	"

1st Jan. 1889.—120 milliampères for 5 minutes.

The period has not been such an easy one as the last.

3rd January.—130 milliampères for 5 minutes.

5th	"	135	"	"	5	"
8th	"	100	"	"	5	"
10th	"	130	"	"	5	"
12th	"	120	"	"	5	"
15th	"	120	"	"	5	"
17th	"	125	"	"	5	"

23rd February.—"I am just getting over my 'monthly,' and am sorry to say I have been quite as ill this time."

12th July.—"I am glad to say I feel very well."

CASE CII.—Married, age 42, was sent by Dr Graham, of Currie, N.B., in the beginning of the winter of 1888.

For the last few years this lady had not been feeling very well, and suffered much from dyspeptic symptoms. Treatment seemed to do little good, and the patient did not mention for a long time that she had considerable irritability of the bladder, necessitating her getting up at least four times during the night, and that there was also difficulty in defæcation. As soon as those symptoms were spoken of, the tumour was discovered. For the last few months, there have been feverish attacks every month, during menstruation, due, the lady thought, to her getting cold when she had to get up during the night. Often, on going to bed feeling very tired, the patient felt certain that nothing would wake her, but for some years she has never got beyond one o'clock. She cannot sit comfortably, more especially when driving. There is not any menorrhagia.

The tumour fills the pelvis, and extends to 2 inches above the pubes. The sound enters easily about 5 inches.

1st November 1888.—65 milliampères for 5 minutes.

3rd " 85 " " 5 "

Patient says that she feels better, and she had to empty the bladder once only last night.

6th November.—85 milliampères for 5 minutes.

8th " 75 " " 5 "

Slept better last night than she had done for years, and instead of waking at one o'clock, slept on till five.

10th November.—90 milliampères for 5 minutes.

13th " 80 " " 5 "

The lady says that she does not require to take any thought how she sits ; she is perfectly comfortable.

20th November.—75 milliampères for 5 minutes.

The period is over ; there has been rather more flow than usual, but accompanied by much less pain.

22nd November.— 85 milliampères for 5 minutes.

24th " 90 " " 5 "

27th " 90 " " 5 "

29th " 100 " " 5 "

1st December. — 95 " " 5 "

4th " 80 " " 5 "

6th " 100 " " 5 "

8th " 90 " " 5 "

11th " 90 " " 5 "

The period is due, and the patient states that she feels better than she has done for many years ; usually at this time of the month, she has felt very uncomfortable.

15th December.—100 milliampères for 5 minutes.

The period was got through without any discomfort or feverishness.

17th December.— 90 milliampères for 5 minutes.

19th " 110 " " 5 "

21st " 110 " " 5 "

22nd " 110 " " 5 "

24th " 100 " " 5 "

26th December.—100 milliampères for 5 minutes.

28th " 100 " " 5 "

31st " 100 " " 5 "

2nd Jan. 1889.—100 " " 5 "

4th " 100 " " 5 "

5th " 100 " " 5 "

7th " 100 " " 5 "

10th " 115 " " 5 "

There has been nothing to chronicle, as the patient has been quite well, and has been going to concerts and the theatres, as if there were nothing the matter with her.

7th June 1889.—"I am delighted to say I am enjoying very good health, and am equal to any amount of walking, driving, gardening, etc., without the aches and pains which resulted from such exercises last summer. We drive to town twice or three times a week; so 50 or 60 miles in a high dogcart, that people 'without encumbrance' say wants the house steps to enable them to get up, is a strong testimonial in favour of the electricity that has lightened my load."

CASE CIII.—Married, age 34, was brought by Dr Ransford in November 1888.

The lady had not been well for ten years, since her younger child was born, but the history of the tumour appeared to date back about half that time. She suffers from very severe pain at the periods, so bad that lately she has required to have morphia injected usually 5 or 6 times. Hæmorrhage also is a very prominent symptom, seventy diapers being used as a rule. She feels that something must be done, and that life is scarcely worth living.

On examination the tumour is found to be very prominent, and to extend to within an inch of the umbilicus. The sound passes to a depth of ten inches.

3rd November.—75 milliampères for 5 minutes.

5th " 80 " " 5 "

7th November.—65 milliampères for 5 minutes.

24th " 100 " " 5 "

The period came on without any pain, but this appeared as the flow was leaving off. Feels very fairly well however.

26th November.—95 milliampères for 5 minutes.

28th " 100 " " 5 "

30th " 75 " " 5 "

3rd December. — 50 " " 5 "

The period is on again accompanied by a great deal of pain. To stop this if possible the application was made to-day at the patient's own house, and the rest of the treatment will be conducted in the same manner.

5th December.—70 milliampères for 5 minutes.

7th " 80 " " 5 "

10th " 80 " " 5 "

12th " 100 " " 5 "

14th " 70 " " 5 "

17th " 70 " " 5 "

The general condition improves, and the tumour is smaller.

19th December.—90 milliampères for 5 minutes.

21st " 100 " " 5 "

26th " 70 " " 5 "

A small piece of tumour (?) came away yesterday.

28th December.—65 milliampères for 5 minutes.

1st Jan. 1889. —120 " " 5 "

The loss has not been more than one-quarter of the usual, and morphia was required but three times.

3rd January.—130 milliampères for 5 minutes.

5th " 130 " " 5 "

7th " 130 " " 5 "

9th " 100 " " 5 "

11th " 150 " " 5 "

14th " 100 " " 5 "

16th " 110 " " 5 "

18th " 115 " " 5 "

The period has been much the same as usual.

17th December.—60 milliampères for 5 minutes.

20th " 70 " " 5 "

22nd " 70 " " 5 "

27th " 70 " " 5 "

29th " 65 " " 5 "

1st January 1889.—60 " " 5 "

3rd " 60 " " 5 "

5th " 55 " " 5 "

The period is commencing after an interval of three weeks.

10th January.—55 milliampères for 5 minutes.

The quantity of blood has been greater, though the time has been shorter. Feels stronger than usual.

12th January.—55 milliampères for 5 minutes.

15th " 60 " " 5 "

17th " 60 " " 5 "

22nd " 70 " " 5 "

24th " 50 " " 5 "

26th " 60 " " 5 "

28th " 55 " " 5 "

7th February 60 " " 5 "

The period has been much the same as the last.

9th February.—55 milliampères for 5 minutes.

12th " 60 " " 5 "

15th " 60 " " 5 "

17th " 75 " " 5 "

19th " 55 " " 5 "

21st " 50 " " 5 "

The tumour is smaller and does not lie so much towards the back. The patient says that she feels much stronger and can walk farther and with much more ease and comfort.

On 6th May the lady wrote,—“You said that you would like to know how I got on, also I thought I should like to

write and tell you how very much better I am feeling. My face is getting quite a colour, and I think you would be satisfied with the progress I have made."

CASE CV.—Single, age 29, was sent by Dr Coleman of Streatham in December 1888.

This young lady had been losing too much blood every month for four years. At first, and for two years, it did not affect her general health; but for the last two she has been becoming anæmic and breathless. Formerly, menstruation continued for five days; now it lasts for eight, and the loss is much in excess of what used to be natural to her. For a year she had been treated by a well-known gynæcologist, with, at first, temporary benefit; but it had become evident that something stronger than medicine and general treatment would be required. After treatment by electricity had been advised, she was taken to see the most eminent specialist in London, who agreed that it was worth trying, at any rate.

The patient was very much blanched, and on examination it was found that the pelvis was entirely filled by a tumour, which projected up into the abdomen; the cervix was within an inch of the vaginal outlet. The sound passed forwards for between 4 or 5 inches. For the first two weeks of the treatment the young lady lived in town; during the remainder of the time she went back and forwards to her own home in Streatham.

11th December 1888.—80 milliampères for 5 minutes.

13th	"	100	"	"	5	"
15th	"	100	"	"	5	"
17th	"	115	"	"	5	"
19th	"	100	"	"	5	"
21st	"	115	"	"	5	"
24th	"	100	"	"	5	"
28th	"	105	"	"	5	"

8th January 1889.—120 milliampères for 5 minutes.

The first period since the treatment was begun is over ; it lasted six days, and the quantity of blood lost was greater than it had ever been.

10th January.—130 milliampères for 5 minutes.

12th " 120 " " 5 "

15th " 120 " " 5 "

17th " 125 " " 5 "

22nd " 125 " " 5 "

24th " 150 " " 5 "

26th " 160 " " 5 "

The patient is beginning to feel a little better and stronger.

5th February.—140 milliampères for 5 minutes.

The very worst period she has ever had is over. The flow continued for ten days.

7th February.—160 milliampères for 5 minutes.

9th " 150 " " 5 "

12th " 130 " " 5 "

19th " 80 " " 5 "

The young lady is improving somewhat rapidly.

21st February.—145 milliampères for 5 minutes.

23rd " 110 " " 5 "

25th " 120 " " 5 "

The colour is much better ; the tumour is beginning to rise up out of the pelvis.

7th March.—150 milliampères for 5 minutes.

The period is just over ; there has been less discharge than for the last eight months. The cervix is now far back in the pelvis, with the fundus uteri turned up into the abdomen.

14th March.—75 milliampères for 5 minutes.

After going home on the 7th instant there was a sudden flow of blood, described as being most alarming ; the bleeding continued for several days, and was accompanied by pain.

16th March.—110 milliampères for 5 minutes.

19th " 115 " " 5 "

21st " 110 " " 5 "

23rd " 120 " " 5 "

26th " 120 " " 5 "

13th April.—Another bad period has been passed through, during which there were several sudden gushes of blood.

9th May.—"I am pleased to tell you my daughter is steadily improving. The last period was not excessive, and there was none of the sudden rushing at the end. Therefore she is much better than has been usual now it is over."

20th May.—"I am glad to say my daughter continues to progress."

6th July.—"It is two years since I had to tell Dr Coleman how bad I was getting.

"The periods do not last more than three or four days. I am feeling so different from this time last year."

CASE CVI.—Single, age 48, was sent by Sir Spencer Wells in December 1888.

This lady complained of symptoms due to the size of the tumour. For eighteen years she had known of the presence of a growth; but it has given rise to trouble only in the last year or two. She suffered from discomfort; from difficulty in walking and stooping; and also from a painful and full feeling high up in the left side. Arrangements had almost been made for the performance of hysterectomy, when the lady consulted Sir Spencer, who advised the electrical treatment, as there were no urgent symptoms calling for operative interference, especially at the age of 48. The broad ligaments were not opened up by the tumour, and operation would have been easy.

On examination, the tumour was found to be hard, large, and not movable. On the left side its upper margin was

masked by the ribs, which were much elevated ; on the right, the tumour barely reached up to the costal margin ; but it caused very considerable bulging in the side. The sound passed to a depth of 7 inches.

19th December.—70 milliampères for 5 minutes.

21st " 70 " " 5 "

24th " 90 " " 5 "

26th " 110 " " 5 "

The tumour is slightly movable, is smaller on the right side, and the lady thinks that she walks somewhat more easily.

28th December.—100 milliampères for 5 minutes.

31st " 100 " " 5 "

The period is almost due, and the patient is more comfortable than usual.

2nd January 1889.—100 milliampères for 5 minutes.

8th " 110 " " 5 "

The period has been as usual ; the patient walks better and is more comfortable.

10th January.—130 milliampères for 5 minutes.

14th " 125 " " 5 "

16th " 110 " " 5 "

18th " 130 " " 5 "

29th " 100 " " 5 "

31st " 110 " " 5 "

2nd February.—160 " " 5 "

4th " 140 " " 5 "

The tumour steadily decreases in size.

6th February.—140 milliampères for 5 minutes.

8th " 110 " " 5 "

12th " 110 " " 5 "

15th " 110 " " 5 "

23rd " 110 " " 5 "

25th " 150 " " 5 "

There is a marked difference in the size of the tumour, more especially on the right side.

27th February.—135 milliampères for 5 minutes.

1st March. —125 " " 5 "

4th " 120 " " 5 "

6th " 140 " " 5 "

14th " 145 " " 5 "

The period came on a week too soon. The tumour does not bulge so much in the flanks, and the depth of the cavity is 5 inches.

16th March.—145 milliampères for 5 minutes.

18th " 125 " " 5 "

20th " 120 " " 5 "

22nd " 120 " " 5 "

25th " 120 " " 5 "

The tumour is movable, and the abdominal wall is not so tightly stretched over it. The lady walks better and feels lighter.

27th March.—120 milliampères for 5 minutes.

29th " 115 " " 5 "

1st April. —115 " " 5 "

3rd " 110 " " 5 "

9th " 120 " " 8 "

11th " 115 " " 10 "

13th " 125 " " 10 "

For some time it has been possible to push the tips of the fingers between the ribs on the left side and what appeared to be the highest point of the tumour. To-day, on pressing deeply, a large mass was found to spring from the upper and back part of the tumour, and to extend deeply, up under the posterior half of the diaphragm. The tumour was thus larger than had been supposed, and the discomfort and feeling of fulness, originally complained of high up on the left side, were thus accounted for.

Called in July to say that she continued to improve and that her friends found her much better. The tumour was decidedly smaller than when last seen.

PRINTED BY OLIVER AND BOYD, EDINBURGH.







