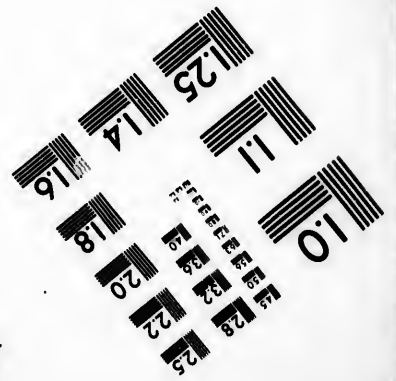
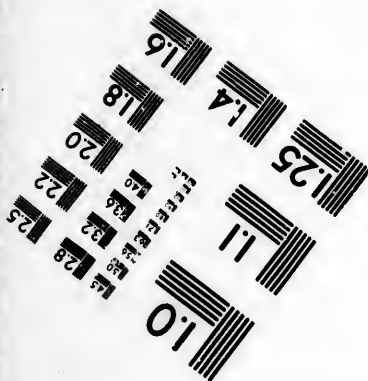
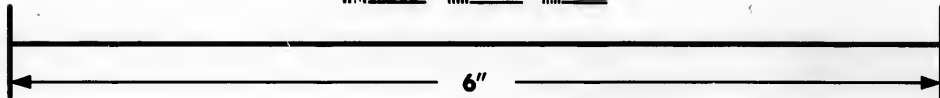
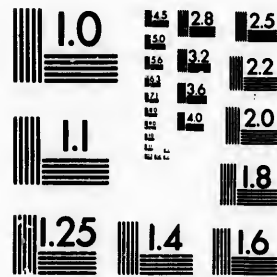


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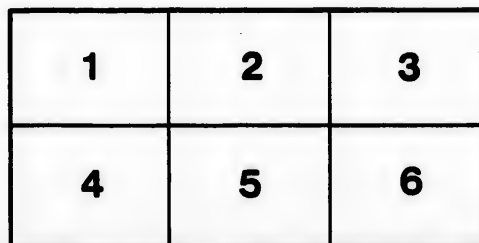
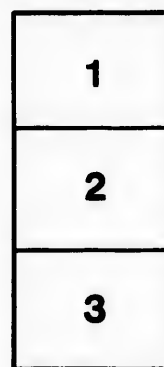
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Reprinted from the *American Journal of Obstetrics*,
August, 1889.

A YEAR'S EXPERIENCE WITH APOSTOLI'S METHOD, WITH REPORTS OF CASES.

By A. LAPTHORN SMITH, B.A., M.D.,

LECTURER ON GYNECOLOGY, BISHOP'S COLLEGE, MONTREAL ; SURGEON
TO THE WOMEN'S HOSPITAL.

Having begun the use of Apostoli's method about the month of October, 1887, and having had an almost daily experience with it ever since, and some nine months having elapsed since the termination of the year, I am, perhaps, justified in now laying my experience in this most interesting department of gynecological therapeutics before the profession. Before I began the use of it I had a somewhat too exalted opinion as to its value. This was followed by the usual reaction, and being brought face to face with a number of cases noted for their difficulty, I became a little discouraged. Later on as the benefits of the treatment began to slowly but surely mount up with the increasing number of cases, a firm and lasting belief in its capabilities has been acquired. I mention these three phases of opinion of the treatment because I see around me evidence that my confreres, who are trying it, are going through the same stages. In the following remarks I shall endeavor to give the treatment its true and well-earned place, as I believe it is as much in its interest to avoid forming an erroneously high opinion of it as it would be to decry it altogether.

For the information of my brethren who are seeking knowledge as to the best method of going about this treatment, it might be well to lay before them a few points which experience has taught me. In several former articles I have given the Leclanche conglomerate cell as the source of electricity. I am now altogether willing to admit that the old pattern of Leclanche cell, with a porous cap, which can be purchased in quantities in the United States for about half a dollar apiece, is quite as good for this purpose ; also that the improved Law battery will do equally well. I may state that thirty cells will give enough power for general use, owing to improvements which I shall shortly describe for conveying the current to the morbid growth. The cells should be arranged with the zincs pointing to the right—the first zinc being attached to the second carbon and the second zinc to the third carbon, and so on. The beginner should remember that the wire from the first carbon is called the positive pole and the wire from the last zinc the negative pole.

The next question to be asked is: What is the best appliance for turning the current on and off? During the first year in which I used this method of treatment, I employed the Gaiffe current collector which I brought from Paris and which was similar to that used by Apostoli. But after hearing of the Bailey rheostat I procured one, and a very short trial of it convinced me that it was far superior to the Paris instrument. The disadvantages of the double dial collector of Gaiffe is that you have a wire going from each cell to the switchboard, so that you have as many sources of danger of a broken connection as there are contact points. In the one I used there were 120 contact points and consequently 120 places at which the current might be accidentally broken. This accident, in fact, has actually happened to me on several occasions.

Since I have adopted the Bailey rheostat, the current has always been turned on and off with perfect smoothness, and with it I have been able to make the finest possible adjustment from one to over two hundred milliamperes. Another defect of the switchboard collector is that the first ten or fifteen cells being used more than the next ten or fifteen, are run down to one-half or a quarter of the strength of the latter, so that no matter what care be taken to run down all the cells equally, we cannot avoid occasionally striking a very weak or very strong cell, in some cases the difference in strength caused by adding another cell to the circuit being sufficient to cause an appreciable shock. With the Bailey rheostat all the cells are worked equally at the same time, so that, with ordinary use, the battery requires almost no attention during the first one or two years, and then all the cells must be recharged together.

The Bailey rheostat is manufactured by the Law Telephone Company, Liberty street, New York. Should the ratchet on this instrument become too loose, it must be tightened up with the screw for the purpose, otherwise its weight might cause the carbons to drop an inch or two into the water without our wishing it.

We now come to the important question of the best galvanometer. My own experience has been limited to Gaiffe's instrument, of which I have two, one measuring from one to fifty milliamperes and the other from ten to two hundred and fifty. The former has of course proportionately larger spaces for each milliampere. I am in a position to state, from information which I have received from a number of correspondents in the United States, that the Gaiffe instrument is far superior in accuracy to any instrument so far manufactured in this country, although I can see no reason why such an instrument should not be

made here. In the meantime, I can recommend anyone purchasing an outfit to obtain that part of it, at any rate, from Paris.

It might be well to mention, with regard to the galvanometer that the needle which registers the strength of the current on the scale is only a nickle one, fastened at right angles to the real magnetic needle, which is concealed under the coil of wire. I mention this because some of my confrères who knew where the north and south poles in their city were situated spent some time in vainly trying to get the needle of the galvanometer to point in those directions. It is also important that no steel instrument, such as dressing forceps or scissors, nor any faradic machine, be allowed to lie near the galvanometer when it is in use. Care must be taken, too, that no magnetic machines be placed in its vicinity. A place should be chosen for it as far removed from iron pipes as possible. It is also desirable that the galvanometer be placed considerably below the level of the patient, so that, while sitting in front of her, we may keep our eye constantly on the needle.

The current having been led from the first carbon through the artificial resistance of the rheostat and then through the galvanometer, must now be made to enter the patient so as to encounter the least amount of friction, for friction means heat, and unless the surface of contact of the electrode with the skin be very large, a high power cannot be used owing to the burning and even vesication which it produces. In this consists one of the great secrets of Apostoli's success.

By means of his abdominal electrode of moist potter's clay, which adapts itself to the open mouth of every pore of the skin, the electrical current finds its way into the

body through many thousand pores, and thus resistance to its entrance is reduced to a minimum.

Martin, of Chicago, has introduced a modified electrode of the same size, however, as Apostoli's, but differing from it in that instead of a flat cake of clay to which the pole is attached by means of a piece of zinc, a metal dish filled with water and covered with animal membrane is employed.

Engelmann uses a piece of absorbent cotton loosely sewed to several thicknesses of tinfoil, to which the wire is attached. The advantage of Apostoli's clay is that its weight is sufficient to keep it applied closely to the skin ; but its disadvantages are that it is apt to soil the clothes, has a constant tendency to dry unless frequently moistened, and feels very cold when applied to the skin unless previously warmed, it being as good an abstractor of heat as it is a conductor of electricity. If it is warmed before its application, it is apt to dry up, while if it is immersed in hot water, it is apt to wash away.

Martin's electrode is neat and clean and if, when not in use, it is left with the animal membrane immersed in bichloride solution, it will not soon get an unpleasant odor or putrefy. Some of the water can easily be poured out each time and some boiling water introduced so as to make it pleasantly warm ; but, some day when we least expect it, and during an application, it will play us false, for a tiny hole will appear through which the contained water will escape over the patient's clothing. After this accident had occurred to me several times, I determined to discard the animal membrane and to employ a combination of Apostoli's and Martin's electrodes by filling Martin's metal dish with Apostoli's clay and covering it with one or two layers of gauze. The result has been all that I could desire. The clay, being contained in the metal dish, does

not escape upon the patient's clothing and is not difficult to apply. Instead of mixing the potter's clay with water only, I have added from one-third to one-half of glycerine, which, owing to its great avidity for moisture, will always keep the clay wet, so that I am no longer in danger of finding that my clay has dried up during the night. As an extra precaution, I am in the habit of wrapping up my abdominal electrode in a large sheet of gutta percha tissue or oiled silk, into which I throw an ounce or so of water to supply the thirst of the glycerine.

This electrode weighs four or five pounds, which is sufficiently heavy to guarantee its close application to the abdominal integument and does away with the danger which I have several times experienced of the patient's suddenly removing her hands in order to gesticulate while talking to me during the application.

Martin's instrument is somewhat expensive, so that to meet the wants of those to whom expense was a consideration, I had the same thing manufactured by a local tinsmith for forty cents apiece, thus enabling me to have three or four; some with projecting surfaces of clay for the abdomen of thin women, others with more or less hollow surfaces, according to the prominence of the abdomen or of any part of it. For instance, in a case where a large fibroid is projecting prominently, I apply an abdominal plate very much hollowed out, which fits on top of the tumor like a cap. Any tinsmith can convert deep pie plates into Martin's electrodes by soldering on to the rim a corrugated flange and attaching a binding post and screw to the bottom of the plate. A piece of rubber tape or bandage must be fastened around the edge to prevent the metal from burning. The current having entered the body, we will suppose, by the abdominal positive pole, pours through like a fine, invisible rain from every part of the clay in a

direct line towards the other pole, which, we will say, is the negative one in the uterus. If we could see it, it would look very like the spokes of a wheel running from the tire towards the hub. This will explain the condensation of force which takes place when the exposed surface of the electrode in the uterus is very much smaller than the surface on the abdomen and, for this reason, the electrode in the uterus is called the active pole.

When it is desired to produce a cauterizing effect, either positive or negative, this can be obtained by making the exposed surface in the uterus exceedingly small, for Martin has proved that it requires 50 milliamperes to one square centimetre of surface during a period of five minutes in order to obtain a cauterizing effect. Where a cauterizing effect is desired, there is every advantage in making the surface of the internal electrode as small as possible; but, *in cases where we wish to obtain the greatest possible interpolar action*, we should make the internal as well as the external electrode as large as possible. Of course, if the internal electrode is connected with the positive pole, either gold or platinum must be employed, and the cost of these precious metals acts as a barrier to their being used. To overcome this objection, Apostoli has lately introduced graduated carbon electrodes containing one, two, three, four and more centimetres of surface, with which he is able to treat successively different portions of the intra-uterine mucous membrane. These carbon electrodes have another advantage in that they do not cauterize the cervical canal when it is our desire to only treat the lining membrane of the uterine cavity.

He has also invented another means of applying electricity to the interior of the uterus by means of a substance called gelosin, a semi-solid vegetable material, which is injected into the uterus so as to touch the whole mucous

membrane. It does for the interior of the uterus what the clay does for the abdomen—enlarges the surface of contact.

Dr. Goelet, of New York, has recently introduced a steel sound, which, owing to the peculiar manner in which it is prepared, is able to withstand the action of acids. As it is cheap and is a good conductor, it should supersede the costly platinum sounds and trocars which have hitherto been in use. I lay considerable stress on these points of diminishing the cost of necessary apparatus, as I have no doubt that the great expense of the armamentarium hitherto necessary has prevented many of the most wide-awake and progressive practitioners from possessing an outfit.

When the negative pole is used in the uterus the ordinary intra-uterine sound with a hole in the handle for connecting the wire from the negative pole is all that is required. I have a number of them curved to different degrees, always standing with their insulators in a carbolic solution, and I soon become familiar with the curves in the uterine canal of each patient and choose the sound which suits her best. If you have only one sound it soon becomes cracked by frequent bending. The negative pole is bathed in alkalies which only brighten its polish.

In dysmenorrhœa from stenosis of the internal os, the softening and dilating influence of the negative pole has been thoroughly established. In cases of fibroid in which the dysmenorrhœa is a more marked symptom than the bleeding, I also prefer the negative pole in the uterus, which I fancy can be tolerated stronger than the positive. But when there is hemorrhage the positive pole is decidedly indicated. Nevertheless, I have frequently observed the duration of menstruation to be rapidly diminished by the use of the negative pole. The positive pole also seems to have a more tonic effect on the system generally.

I now come to another point, namely, the necessity for irrigation before and after each application. During the first year I used this method I spent a great deal of time in giving each patient a vaginal antiseptic douche, not only before but after every application, and perhaps if one is apt to produce a lesion of the uterine lining membrane, it would be well to take that precaution; but having learned from several of my confreres, whom I have induced to adopt Apostoli's method, that they had modified without bad effects the rigor of his instructions, I have for the last few months been contenting myself with swabbing out the vagina with a one in a thousand bichloride solution before and after each application when the speculum has been used; or with ordering a weak sublimate injection to be given by the patient herself at her home before and after each application, when the speculum cannot be employed.

As for the duration and frequency of applications I have generally tried to give them every second day when I had time or as long as the patient was able to come. As a rule the treatment of out-patients is often enough interrupted so that it is unusual to be able to get on an average more than eight or ten applications a month. Most of my cases felt so well the next and following days after an application that they were anxious to come back. I have also noticed that the strength of current which a given patient could comfortably endure gradually increased with each application. No rule for the strength of current can be laid down. I give the patient all she can bear, but the moment I see by her face that she is beginning to suffer a little I reduce the current, as I do not think anything is to be gained by giving a current strength which they would have any reason to dread. Apostoli says in his work on treatment of endometritis (p. 74) "Could we not, in order to render the operation still more harmless if possible, and

at any rate extinguish all operative sensibility, diminish the dose by lowering the intensity to 30 or 40 milliamperes for instance, and increase in proportion the duration of the application, in order to render always the same the sum of the electric outflow?" He answers this question in the negative in the case of endometritis, because in that particular disease it is the intense local action which is required. But in electrolysis I see no reason why 100 milliamperes for ten minutes should not be as effective as 200 for five minutes.

Indeed I believe that some way will yet be devised for passing a comparatively weak current through the tumor day and night, and thus procure the electrolysis of the largest tumor in the course of a few days. As far as electrolysis is concerned 10 milliamperes during 100 minutes would be as effective as 100 milliamperes during 10 minutes. I have devised a plan by which a small battery is placed under the bed and the current is carried to the front and back of the tumor, but I have not yet been able to give this method an extended trial.

What about galvano punctures? Although my experience with them has been limited, I have seen enough of them to be able to say that the less frequently they have to be resorted to the better, and then only at the patient's home or at the hospital, but, with one exception, never at the office. First of all, because they are exceedingly painful, and, second, because the after condition of the patient is such as to cause considerable anxiety. In the case of Mrs. D. I tried galvano punctures many times before I was able to pass the sound, and I found that anything more than 30 milliamperes could not be borne for more than a minute or two. I also tried them many times in the case of Mrs. T., who was unable to bear more than 20 milliamperes without an anesthetic. Besides the pain caused by the

activity of the current being concentrated on so small a surface as the point of a trocar (for the electro-chemical action is always in direct proportion to the size of surface for a given milliamperage), there must also be taken into account the suffering caused by piercing the vagina and the sometimes very sensitive tumor itself. In many cases the patient cannot bear to have her tumor touched far less to have the trocar thrust into it. In any case, when a puncture is to be made it is well to have the tumor steadied by a firm hand on the abdominal wall to press it down towards the trocar. Even when an anesthetic is employed and a sufficiently high current is turned on, say of 200 milliamperes for five minutes, powerful contractions of the intestines are set up, which continue long afterwards, amounting in some cases to tormina. These may be diminished, but not entirely avoided, by augmenting and decreasing the strength of the current very gradually and by administering a hypodermic of morphia previously. In the case of Mrs. T., who has an insuperable repugnance to the drug and refused to take it, these griping pains were terrible, and lasted for two days afterwards. By keeping the patient in bed for two days after the puncture and applying emollient applications to the abdomen and by giving antiseptic injections, the punctures are free from danger, and, in Apostoli's hands, are very successful.

Martin, of Chicago, never uses them, and I much prefer the intra-uterine applications, which are much safer and hardly at all painful. Some of my patients have frequently borne 250 milliamperes for five minutes without an anesthetic. They are safer because they may generally be performed without causing the slightest lesion of the uterine mucous membrane. It is now a rare occurrence for me to draw one drop of blood when introducing the sound after the first application. But there is one case in which

the intra-uterine applications are powerless, when the tumor lies altogether outside of the line of the cone-shaped current, the apex of which is at the sound and the base at the clay. In three of my most obstinate cases all the morbid growth in the anterior wall of the uterus was absorbed, because I could feel the tip of the intra-uterine sound under my finger on the abdomen. In one of them, Madame D., I then began to place the clay electrode on the back, so as to take in the posterior half of the tumor between it and the sound, with the result that the posterior half of the tumor also rapidly disappeared. I think this observation, if correct, to be important, as it would explain why I and others have failed in certain cases to obtain absorption of the whole of the tumor.

As Mr. Tait and Dr. Bantock at a recent meeting of the British Gynecological Society made the statement that a fibroid tumor could not be electrolyzed—that is, decomposed into its constituent elements by any amount of current which it was possible to bear, 200 milliamperes, for instance, for five minutes—I proceeded with my galvanometer and rheostat to an electroplating establishment and interposed them in the circuit while the process was going on, when to my surprise I found that two and a half milliamperes was the greatest strength they ever employed. In fact, a copper article was completely coated with silver in five minutes with a current of that strength, which, on being weighed, showed that an equivalent of two grains of cyanide had been decomposed. Now if two grains are decomposed by two and a half milliamperes in five minutes, 480 grains would be decomposed in 11 minutes by 250 milliamperes; so that 16 applications of 11 minutes with a current strength of 250 milliamperes would decompose one pound weight of the tumor. Whether a tumor out-

side of the body would lose that amount of weight in that time and with that current strength is a different thing, for in the living body, as is well known, there are the thousands of open-mouthed lymphatics ready to seize upon and carry away the products of decomposition, while in the dead tumor this would not be the case and the products of electrolysis would not be removed, so that the weight might not appear very different.

But besides the electrolytic action of the continuous current we have the remarkable effect which it has on the trophic nerves, an action which would lead us to believe that the electric current is very similar to the vital current. These trophic nerves preside over the quantity of blood flowing in the vessels and the interchange of material in the tissues, as well as the absorption of foreign matter by the lymphatics. We know that it very much depends on the amount of nervous influence which the cells receive as to whether they shall keep up to the normal or degenerate. From the consideration of the history of the cases of fibroids which have come under my notice I have been led to consider that fibroids are primarily due to defective vitality of the uterus accompanied by slowing of the circulation. And the difference between fibroids and areolar hyperplasia is only one of greater or less localization. Thus if an impediment occurs to the circulation of the uterus, and we all know how great these impediments are in the modern women, with their tight corsets, their heavy draperies, their engorged livers their constipated bowels and their want of exercise, if any of these causes prevent the blood from returning from the uterus it is dammed back in the uterine veins and arteries from which a fibroplastic material exudes. If the absorbents are active this may be carried off; if not, it will remain, and after a time become organized into white

fibrous tissue. This, small as it may be, is a foreign body, and still further obstructs the circulation so that it goes on increasing. At last it reaches a size sufficient for the uterus to take cognizance of, when, as is customary with that organ, the intruder is promptly expelled either towards the peritoneum or towards the cavity of the uterus in the line of least resistance, dragging with it the vessels from which it was first exuded, and from which it continues to receive its nourishment. In every case of fibroid which I have had under my care the patient had always been constipated and nearly all of them were of sedentary or intellectual occupations. Then again nearly all fibroids begin in the posterior half of the fundus where the circulation is the most difficult. Now the continuous current increases the nutrition of the part by hastening the circulation and interchange of tissues, in other words, acting as the best of alteratives. The exuded lymph goes back where it came from by virtue of the renewal of the defective vital action. Certainly *in the case of small fibroids the continuous current never fails to remove them.* This reminds me of an observation which I wish to record, that in many cases of fibroids there is a considerable edema in the outside cellular tissue, into which the finger may be made to sink by a firm and continued pressure. Now when a fibroid begins to diminish under electric treatment, the first thing to go is the edematous swelling, so that what seemed at first a single large tumor becomes resolved into a number of hard masses.

It is by the improvement in the circulation and consequently of the nutrition of the part that I would explain the marked relief of ovarian neuralgia by galvanism; for the best definition of neuralgia of which I am aware is that it is the cry of the nerves for better nourishment. But the relief of ovarian pain may be explained in another

way. Those who operate for this condition tell us that they frequently find the ovaries and tubes compressed and bound down by a retracting plastic effusion; but owing to the stimulation of absorption these exudations are removed and the ovary is left free. The absorption of effusions by galvanic treatment has been observed by writers, not gynecologists, who have advocated this measure for the treatment of ascites.

In nearly every case of fibroid there is an atonic condition of the walls of the intestines which permits of their being distended with gas. A few applications of the galvanic current tone up the intestines, which expel their gaseous, liquid and even solid contents with a corresponding diminution in the abdominal distension. In nearly all my cases not only of fibroids but also of endometritis in which electricity has been employed the good effects of it on the constipation have been very pronounced.

This may, perhaps, be a good opportunity for repeating an opinion I never miss a chance of expressing, that *constipation is one of the prime factors in the majority of cases of diseases of women.*

I can hardly find a case in my note book which does not contain the note, bowels have always been confined. Surely I have not erred in teaching that the first step in any and every case of diseases of women is to get the bowels regular so as to remove the obstruction to the venous circulation.

There is one thing about Apostoli's treatment which every one who has given it a trial is agreed upon, and that is that it never fails to arrest hemorrhage in fibroids and metritis. Now this is all that Mr. Tait claims to do by removal of the appendages, and although this operation in Mr. Tait's hands is almost devoid of danger, that does not make it easy or safe in the hands of the

general practitioner under whose care the patients come. There is very little satisfaction to a woman who has been confined to her bed for years with exhausting hemorrhages, to be told that she can have them stopped by an operation which has only a small death rate in the hands of Mr. Tait. Even if she could be operated on by him she would not even then be sure of relief. On the other hand, several hundred cases are on record in which several years after treatment by Apostoli's method the arrest of the hemorrhage has proved to be permanent. I have the highest esteem for the wonderful diagnostic skill and manual dexterity of Mr. Tait, but I do not think he has been just to my friend and teacher, Apostoli, when he basis his disbelief in Apostoli's honesty and veracity upon the hearsay evidence of some of his Paris rivals rather than on his own personal investigation. How much better the course pursued by Sir Spencer Wells, who sent a trusty observer to spend a year with Apostoli in studying the value of the treatment, and on his favorable report, going over himself to verify his observations, and then publicly giving Apostoli his hearty endorsement! Apostoli may be enthusiastic, as all inventors are, and some may have over-estimated the value of his treatment; but the tendency of human nature to jog along in the old groove is so great that all his enthusiasm is more than needed in order to drag along the body of the profession in the march of so great an advance. I cannot close without protesting against the assertion that there is any danger connected with Apostoli's treatment. I have seen none during the two years that I have been using it many times a day. I had one narrow escape, when nothing but a kind Providence saved me and the credit of the method. A patient who had been treated by me was so enthusiastic about it that she brought a friend,

who was a great sufferer, to undergo the same treatment. By great good luck I had been called out of town by telegram a few hours before and missed her. At eleven o'clock that night something gave way inside of her, and in a few hours she was dead. I have no doubt that if I had even seen her when she came to me, that I would have had to shoulder for all time one death under Apostoli's treatment. I have not only had no accidents, except one miscarriage which I reported, but every patient has felt better after the first application ; and I candidly maintain that I do not see how a single death can ever be justly attributed to the method. It is the simplest and safest treatment of which I am aware, and it does not mutilate the patient for life, as do other methods of treatment, but it actually restores to her faculties and functions of which she had been previously deprived. I cannot trespass so much on the space of this journal to report even briefly all my cases treated by this method, but I have taken twelve consecutive ones from my note book and condensed them as follows, but there are a great many others which I shall tabulate on a future occasion, of dysmenorrhœa, ovarian, tubal and uterine, of pelvic pain due to pelvic exudation, of ovarian neuralgia, of varicocele of the broad ligaments, of prolapsus of the ovary and uterus from passive congestion of these organs,—which have been either cured or relieved so much that the patient was satisfied. I do not deny that I have had one failure and a few partial failures, but I maintain that even these are rather owing to want of experience due to the newness of the method than to the inability of electricity to remove the pathological conditions. Before the 9th International Congress I stated that electricity was useful in every disease of the female generative organs, with the exception of ovarian tumors and malignant disease. But I

believe that at the next congress I will be able to remove epithelioma from the list of exceptions, having recently had sent to me a hopeless case of cancer of the uterus, on whom I determined to try the continuous current, and in whom half a dozen applications of the positive current have made such a difference in the whole aspect of the case that the patient believes that she is cured, in spite of my assurance to the contrary, and I am almost convinced myself that the disease has been arrested. What a reward for Apostoli's untiring efforts to introduce his method if it should be found that it was reserved for his treatment to cure the one hopeless disease of women—cancer of the uterus.

CASE I.—Mrs. S., 39, widow, artist; sent by Dr. Kennedy. Fibroid tumor since eight years. Messure symptoms had rendered her helpless and hopeless. After twenty-four applications during two and a half months, circumference of abdomen reduced six inches, and she is able to do all her work and enjoy life. Absolutely free from any subjective symptoms.

CASE II.—Miss W., 40, single, cook; sent by Dr. Reddy. Hopeless invalid, fibroid completely filling pelvis. Dysmenorrhea and pressure symptoms on bowels and bladder agonizing. After three months' treatment was able to start a large boarding house, for which she caters and cooks, and enjoys robust health one year after treatment was concluded.

CASE III.—Mrs. L., my own patient. Endometritis and perimetritis. Cured by ten applications of positive pole.

CASE IV.—Mrs. P., 31, millipara; sent by Dr. Chown, of Winnipeg, with rapidly growing fibroids causing great pain, rendering her helpless. Growth arrested by thirty-five intra-uterine applications. One year later is in good health, able to do her own work and goes tobogganing.

CASE V.—Miss C., 41, virgin. Metritis and ovaritis. Cured by nine applications of positive pole.

CASE VI.—Miss McP., 41, virgin, cook; sent by Dr. Reddy. Large, rapidly growing fibroid, causing intense pain from pressure symptoms. Pain removed and tumor diminishing after forty-five applications. Has resumed work as a cook in a large family.

CASE VII.—Mrs. D., 46, married, millipara; brought by Dr. Jeannotte with very large fibroid completely filling pelvis and extending above umbilicus. Had to be kept under morpha for eight days of every month for last ten years on account

of dysmenorrhea and pressure symptoms. After sixty-five applications, tumor reduced to size of an orange and patient absolutely cured of all symptoms. Six months after cessation of treatment Dr Jeannotte reports to me that she menstruates like a young girl, free from the slightest pain, and enjoys life as she has not done for sixteen years. He also says that the tumor has completely disappeared.

CASE VIII.—Mrs H., carried into my office by Drs. Cleroux and Caisse and her husband, remaining in a faint for half an hour afterwards. Had a large, fibrous polypus completely filling the vagina, which, for a variety of good reasons, I was not allowed to remove with the snare. Has frequently fainted in bed from hemorrhage. After seven positive galvano punctures, polypus shrunk to half its size and patient regained color and strength, and hemorrhage ceased. Saw her four months afterwards in robust health.

CASE IX.—Mrs. X., sent to me by kindness of Dr. Proudfoot. Had a six years' history of hemorrhages due to a fibroid, which compelled her to remain in bed ten days every month, during which she would often faint if she raised her head from the pillow. After twenty-eight positive intra-uterine applications, menstruation reduced to four days; no longer obliged to remain in bed during the periods; able to eat and sleep well, and able to go long walks while the flow was going on.

CASE X.—Mrs. N., sent to me by Dr. Munro with cancer of the cervix, causing incessant metrorrhagia which had lasted one year in spite of the best treatment. The slightest touch on cervix would cause granulations to bleed profusely, and the tissues were so soft and friable that a tenaculum would not hold in the cervix, which latter is so hypertrophied that it will barely enter between the extended valves of a Cusco speculum. After six applications, no pain, no hemorrhage; patient eats and sleeps well and able to work. Swelling of lips of cervix gone so that the two lips can be nicely approximated, revealing a very deep laceration, which was the starting point of the disease. Decided cancerous cachexia beginning to disappear. Patient declines further treatment, considering herself cured.

CASE XI.—Mrs. G., sent to me by Mrs. Dr. Fuhrer, with a large, rapidly growing tumor. Suffers terribly from pressure symptoms and want of sleep. After first application pain left, and has not since returned, three months afterwards. Menstruation is now painless and lasts only three days, instead of ten, as formerly.

CASE XII.—Miss B. Endometritis from cold severe pain in womb and ovaries, with menorrhagia and dysmenorrhea.

Eight applications of the positive pole cured the pain, stopped the leucorrhœa, and reduced the period from ten down to four days.

In conclusion, let me urge those who are working with this method to allow nothing to discourage them, for every day they will learn better and better to overcome the difficulties which must always beset the way of those who start out on a new path. It was Apostoli's courage alone which was able to rescue this powerful treatment from being buried alive for another decade, and which has placed him at the head of the great and noble army of conservative gynecologists.

