effects which it produces, and which are in proportion to the square of the electrical energy, according to the analogous formula for the measurement of the energy of other natural forces.

- (d) In the more easy generalization of the method in rebellious cases (hard and sub-peritoneal fibroids, fungus endometritis etc.,) and for young women.
- (e) In the avoidance of relapses, which, other things being equal, will be so much the less to be feared, as we have made the applications more intense.

Fourth. If the vaginal application of the galvanic current (which is the method invented by M. Caron for fibroids, only applied since by A. Martin, Onimus, Charpentier, Mundeé, etc.,) does give any results, they are very much less than those following intra-uterine applications, which should always be the method of choice.

- (a) Because it utilizes to the greatest extent the maximum of the current and of its energy.
- (b) Because it utilizes the anti-septic action of the positive pole which is altogether local, and which is extinguished in the intra-polar circuit and at the level of the negative pole.
- (c) Because it brings into action the derivative and caustic effect of the intrauterine application, treating thus at one stroke, either mere metritis or endometritis, which is so often the complication both of fibroids and peri-uterine inflammation, and assuring in this manner a more rapid, more complete and more permanent cure, because it allows better than vaginal application, of diminishing pain and of rendering high doses more bearable, and because it ensures a greater efficiency in rendering possible an increase of the intensity applied—the bloody flow which it brings on.

Fifth. Vaginal galvano punctures made a few millimetres in depth (two to five) by means of a filiform trocar made of gold, and insulated all of its extent except the point,

form, sometimes, a very valuable part of the intra-uterine therapeutics created by Apostoli:

(a) In better localizing the galvanic action, and (b) in rendering more efficient in certain cases the application of small or medium doses.

Sixth. The harmlessness of his intra-uterine therapeutics is proved, first by the parallel harmlessness of the chemical or bloody methods of intra-uterine curetting, and especially by the figures collected throughout the world and by his own experience from July, 1882, to July, 1890, he has made 11,499 galvanic applications, divided as follows:—8,177 positive intra-uterine galvano cauterizations, 2,486 negative intrauterine galvano cauterizations, 222 positive vaginal galvano punctures, 614 negative vaginal galvano punctures. He has treated 912 patients, composed of 581 fibroids, 133 simple endometritis, 248 cases of endometritis complicated with peri-uterine inflammation, which may be divided as follows: at the clinic-313 fibroids, 70 simple endometritis, 163 endometritis complicated with peri-uterine inflammation. At his office or in the city: 218 fibroids, 63 simple endometritis, 35 complicated endometritis. has had three deaths due to operative mistakes (two galvano punctures, of which one was for a subperitoneal fibroid, and the other for salpingo ovaritis, and the third, a galvano cauterization of an ovarian cyst, which was mistaken for a fibroid.) He has seen thirty cases of pregnancy following the intra-uterine applications of galvanism.

## A FURTHER COMMUNICATION ON A CURE FOR TUBERCULOSIS.\*

By Professor Robert Koch, M.D., of Berlin.

In an address delivered before the International Medical Congress I mentioned a remedy which conferred on the animals experimented upon an immunity against innoculation with the tubercle bacillus, and

<sup>\*</sup>Translated from the original article published in the Deutsche medicinische Wochenschrift, November 14th, 1890.