

over any obstacles, especially about the internal orifice. Another sound, made of platinum wire coiled around a stem of copper with a stem of caoutchouc, has been recommended instead of mine. The insulating end of caoutchouc is bad, since it stands in the way of complete cauterization. The wire also is wrong, in that it does not make a good conductor, is kept clean with difficulty, and with so many interstices can scarcely be made aseptic. The sound is too flexible and does not preserve its polish.

3d. Dirty, cold and troublesome.—Such is said to be the pad of clay which I place upon the abdomen; assuredly, I should be pleased to find something better. I have tried several of the substitutes which have been proposed for the clay, but have found none of them to have the same quality of plastic adaptive adhesiveness. Neither do they well guard against the burning of the skin. The women, therefore, have more pain and are more scarred, as I observed in London. The abdominal electrode of Franklin Martin, of Chicago, is the best I have met with, and will perhaps be adopted. It gives us the opportunity of applying it to the abdomen at an agreeable temperature.

4th. The insulating sheath of celluloid.—In exchange for this, we are offered sheaths made of gum elastic, such as used for catheters, which is corroded by many solutions and tears readily. I cannot find that it has any of the qualities of the celluloid which I introduced. This substance insulates perfectly, is aseptic, hard, easily cleaned, durable, not injured by acids, can be plunged, if necessary, into boiling water, and has only the disadvantage of being inflammable.

*B. Technique.*—For some curious reasons, which I cannot understand, there has been a sort of jealous rivalry in changing the details of my practice.

1st. In regard to intensities.—Some have talked of using currents of five hundred and one thousand milliamperes. Now, this

would be dangerous, and I should say impossible; impossible certainly without chloroform, for in all my experience I have never seen a woman on whom such a dose could be tried—dangerous for the safety of the skin of the abdomen, which must be burned, and from the general mischief which would follow the operation. But knowing the little reliance to be placed in the greater part of the galvanometers in use, I look upon all reports of excessive intensities as exaggerations.

2d. Dosage uncertain.—As I am supposed to have been rather loose in my dosage of electricity, it has been thought proper to call in the aid of mathematics to regulate matters for all sorts of cases, but especially for bleeding cases. An experiment is made showing that a current of twenty-five milliamperes intensity, traversing a positive electrode of platinum, with a surface of one square centimetre, and applied for five minutes to the mucous membrane of the neck of an enlarged uterus, will so condense the structures that no further bleeding can take place, even when they are punctured to the depth of one and one-half centimetres. Hence, it is concluded that success must follow as a constant consequence if we maintain the demonstrated proportions between sound and surface; and it is laid down as a rule that we are to use a current of fifty milliamperes for an electrode of two square centimetres surface, and of one hundred milliamperes for one of four square centimetres. This may sometimes turn out to hold good, but not with the precision announced. For who does not know how many sources there are for these hemorrhages; lesions of the mucous membrane, lesions peripheral. *a.* Lesions of the mucous membrane. These vary in extent and depth, in the condition of the blood vessels, and in the amount of congestion. *b.* Peripheral lesions, such as reflex hemorrhages, hemorrhages connected with the evolution of intra-parietal neoplasms, passive hemorrhages due to disturbance of the peri-uterine circulation, hemorrhages