

the action of the pole is somewhat similar to that produced by the local use of the peroxide of hydrogen.

*Fistula in ano*, when free from any complication, can be successfully treated by introducing an electrode of platinum (a silver probe will answer) into the fistulous canal, and into the rectum a scoop of wood or hard rubber. The circuit should be closed by the application of a well-moistened chamois-covered disk on the neighbouring parts, and moved slowly around and over the fistulous canal, in a labile manner. The object of using the scoop when the fistula is complete, is to allow the free end of the metal electrode, when inserted in the sinus, to rest against it. By this means we can avoid causing unnecessary irritation of pain in the rectum during the application. The rectal scoop is not required when the fistula is incomplete, with the opening external. The advantages of this simple and bloodless method of operating are, that it does not need any preparatory treatment, or cause hemorrhage, inflammation, nor absence from business. The fistula neither requires dressing, nor is constipation of the bowels necessary after the operation. One application of galvanism is generally sufficient to close the abnormal canal in a few days.

The *séance* should not be longer than from eight to ten minutes, when insensibility is rendered by ether, etc. A strong battery current should be applied, using the negative pole in the sinus for five or six minutes, and then the poles should be reversed, and the positive employed in the fistula during the remainder of the sitting; or we may use an application as strong as can be comfortably borne for twenty minutes' duration without the aid of an anæsthetic.

Plated electrodes should not be used on moist or ulcerated surfaces when attached to the positive pole, unless we specially wish to form an oxide of the metal employed. With a negative connection, however, there is no objection whatever to their use.

As a rule, I would recommend generally the use of platinum or gold, and especially when *we desire ozonization*. When the positive pole is formed of any oxidizing metal, ozone is not formed, and the electrode is quickly oxidized.

Dr. Althaus has ascertained, when experimenting on the different animal tissues and fluids by elec-

trolysis, that oxygen, acids, and albumen are accumulated at the positive pole, and hydrogen and alkalis at the negative pole. These agents give the key for further scientific research.

*Ozone* is supposed to be an intensified or an allotropic modification of oxygen, and is one of the most powerful oxidizing agents we possess; it has a peculiar odor, which somewhat resembles weak chlorine. *Antozone* is also an active condition of oxygen; it unites with water, and is strongly oxidizing in its action. *Oxygen* is a colorless, odorless, and tasteless gas. *Chlorine* is a yellowish-green gas of a peculiar suffocating odor.

When treating a large indolent ulcer, situated on the lower extremity, by galvanism, with the positive pole in the sore, I could easily detect the odor of ozone as evolved.

This fact induced me to submit to galvanization a piece of lean raw beef, with both poles placed about half an inch from each other. I employed plates of platinum, as this metal forms the best electrode for electrolytic purposes.

*At the anode (positive pole) the ozone odor emitted was manifest in a marked degree to the sense of smell, while at the cathode a fleshy odor only was perceptible.*

I did not wish to trust altogether to the sense of smell; but was anxious to ascertain its presence beyond a doubt by chemical reagents. The following are the methods I employed when experimenting for ozone. I selected a portion of perfectly fresh beef, free from fat, for each test. Meat that has been kept on ice, or with the least tainted odor, should not be used; for though we may succeed with every reagent employed to-day, we could not perhaps with the same meat obtain a satisfactory result on the following day.

I submitted a portion of healthy placenta to galvanization. In a few moments the odor of ozone was perceptible in every part of my office, and at the same time I noticed that there was also a large quantity of hydrogen evolved at the negative pole, with occasional mimic explosions beneath the disk, scattering a bloody froth in all directions. The free elimination of both hydrogen and ozone in this instance was to me remarkable, and was in quantity about five or six times as much as I could obtain from a piece of beef of the same size.

The large quantity of oxygen contained in the placenta is evidently intended for the special purpose of further oxygenation of the maternal blood