

while passing through the placenta to the infant. When ozone is, specially prepared, and in its purity, we meet with no difficulties when testing. But with the methods I have adopted a few extraneous agents are developed at the same time with ozone by the electrolytic action of the positive pole. These substances would necessarily interfere more or less with the character of the tests employed; while the small quantity of ozone sometimes evolved would not be sufficient to characterize satisfactorily a few of the tests; as, for instance, with indigo, a very weak solution should be employed.

The instrument I used when experimenting was a zinc carbon battery of thirty-two cells, manufactured by the Galvano-Faradic Company.

METHOD I.—After electrolyzation of the beef, and the removal of the metal conductors, I laid a piece of white bibulous paper, previously impregnated with a solution of iodide of potassium, and then pressed the paper gently with porcelain buttons against the electrolyzed portions of the meat for a few moments, when a brown stain was produced on the paper, oxidizing the potassium and setting the iodine free. By this method of testing I found a few agents satisfactory, while others gave only a faint indication of ozone.

METHOD II.—Upon a glass plate I placed a piece of bibulous paper saturated with a reagent, and over the paper a thin slice or shaving of raw beef, lastly the platinum plates. I then employed a strong galvanic current for a few minutes. I expected by this method that as soon as the ozone was evolved, and from its diffusive character, a sufficient portion would at least penetrate the meat, and come in contact with the prepared test-paper. Most of the tests employed by this mode of experimenting gave satisfactory results.

METHOD III.—On a piece of raw beef I applied a strip of thick white blotting-paper (about one-third the width of the conductor), and over it the metal disks. I had my tests, etc., at hand, and as soon as the ozone odor was developed I removed the conductors and immediately brushed the surface of the paper, which had been allowed to remain on the meat, with a test solution. By this proceeding the blotting-paper was impregnated with ozone sufficient to characterize satisfactorily whatever test I chose to employ.

In treating ulcers I have also applied the above method of testing.

METHOD IV.—I placed a piece of beef on the bottom of a small glass jar, and over it the metal disks, and securely covering the vessel, allowed only the wires of the conductors to be exposed outside, to form the connections with the battery. The test-papers were suspended from the inside of the cover, directly over the electrodes. This method gave very unsatisfactory results.

"Necessity is the mother of invention." I may not have employed the most scientific method of ascertaining the presence of this odoriferous agent; however, such as it is, I am convinced of one fact, that I have discovered that ozone is evolved by the electrolytic action of the positive pole when applied directly to ulcers. I feel assured in saying of this discovery that it will have a very important and practical bearing, and aid us also to arrive at a more definite and scientific basis, as to which pole we should employ directly in the treatment of diseases by electrolysis. I find no reference whatever regarding its use or mode of application in any work on electro-therapeutics which I have consulted. I am aware that ozone is derived by the action of the ordinary electrical machine, and evolved when we strike together the metal conductors of a galvanic battery in operation, by chemical action, etc.

Galvanism, when employed in the treatment of ulcers, possesses many important and decided advantages which are wanting in the usual local remedies daily in use. It is easily applied, and by no means a painful remedy. Its action is various, that is to say, it is electrolytic, catalytic, and thermal.

*The elements evolved by the decomposing power of the positive pole, especially when the conductor is formed of an unoxidizable metal, and applied directly to the ulcer, possess the following properties: stimulant, antiseptic, disinfectant, de-odorizing, oxidizing, besides possessing the power of coagulating blood and albumen, as well as promoting absorption of the abnormal secretions.*

It matters little in the surgical treatment of ulcer what the nature of the agent or agents may be their action when developed by electrolysis, or whether its beneficial effects are due more to the primary or secondary chemical results which occur in the ulcer during the application; it is sufficient for our purpose when we have the practical fact, that ulcers heal rapidly after its application, generally in about one-sixth the time ordinarily consumed by the usual methods of treatment,

The flabby livid-colored granulations which are