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## Original Communications.

### THE POSITIVE POLAR ACTION OF THE CONSTANT GALVANIC CURRENT ON MICROBES AND ESPECIALLY ON THE BACTERIA CHARBON.

BY DRs. APOSTOLI AND LAGUERIERE.

Being a Communication read before the Academy of Sciences of Paris, 28th April, 1890.

The antiseptic microbicide action of the constant galvanic current noticed by one of us since 1886 has been the object of our united researches since two years.

In a sealed communication to the Academy of Sciences, 19th August, 1889, we made known the results of our first experiments performed by placing the poles at the two extremities of a dish containing culture fluid, the poles being placed at a short distance from each other. All our experiments have been checked by subsequent inoculation cultivation in the animals (either rabbits or guinea-pigs.)

Our first and most important conclusions are as follows:—First, the action of the constant galvanic current on cultivations of bacteria is in direct proportion to the intensity of the current estimated in millamperes.

Second.—For a given intensity, other

things being equal, the duration of the application of the current is of only slight consequence, the intensity of the current being always of importance.

Third.—A current of 300 millamperes and over applied during five minutes invariably kills the bacteria of *charbon*; the cultivations made with fluids so treated remain sterile and inoculation of the guinea-pig proving abortive.

Fourth.—A current of from 200 to 250 millamperes applied during five minutes does not surely and invariably destroy their virulence. Some of the guinea-pigs inoculated died, but much more slowly than those that were inoculated with the same culture-fluid, but which had been submitted to the action of the current.

Fifth.—A current of 100 millamperes, and even under, a current lasting 30 minutes, does not surely and invariably destroy their virulence; a weakening is produced, which increases with the intensity of the current, which is made evident by the fact that the guinea-pig inoculated died one or two days later than those treated with the first liquid.

Since then we have proved that these effects are independent of the heat phenomena which always accompany electrolysis, and we have studied separately the influence