deflect a magnet, to make a magnet, to decompose water, and to produce a spark.

Dr. Faraday's Views of Statical Electric Induction.

According to the theories of electricity of Æpinus and Coulomb, which in this Book of our History are regarded as constituting a main part of the progress of this portion of science, the particles of the electric fluid or fluids exert forces, attractive and repulsive, upon each other in straight lines at a distance, in the same way in which, in the Newtonian theory of the universe, the particles of matter are conceived as exerting attractive forces upon each other. An electrized body presented a conducting body of any form, determines a new arrangement of the electric fluids in the conductor, attracting the like fluid to its own side, and repelling the opposite fluid to the opposite side. This is Electrical *Induction*. And as, by the theory, the attraction is greater at the smaller distances, the distribution of the fluid upon the conductor in virtue of this Induction will not be symmetrical, but will be governed by laws which it will require a complex and difficult calculation to determine—as we have seen was the case in the investigations of Coulomb, Poisson, and others.

Instead of this action at a distance, Dr. Faraday has been led to conceive Electrical Induction to be the result of an action taking place between the electrized body and the conductor through lines of contiguous particles in the mass of the intermediate body, which he calls the *Dielectric*. And the irregularities of the distribution of the electricity in these cases of Induction, and indeed the existence of an action in points protected from direct action by the protuberant sides of the conductor, are the causes, I conceive, which lead him to the conclusion that Induction takes place in *curved lines*[1] of such contiguous particles.

With reference to this, I may remark that, as I have said, the distribution of electricity on a conductor in the presence of an electrized body is so complex a mathematical problem that I do not conceive any merely popular way of regarding the result can entitle us to say, that the distribution which we find cannot be explained by the Coulombian theory, and must force us upon the assumption of an action in curved lines:—which is, indeed, itself a theory, and so vague a one

[1] *Researches*, 1165, &c.