there appeared in the *Bulletin des Sciences*,[12] an exact solution of the problem of the distribution of electric fluid on a spheroid, obtained by M. Biot, by the application of the peculiar methods which Laplace had invented for the problem of the figure of the planets. And in 1811, M. Poisson applied Laplace's artifices to the case of two spheres acting upon one another in contact, a case to which many of Coulomb's experiments were referrible; and the agreement of the results of theory and observation, thus extricated from Coulomb's numbers, obtained above forty years previously, was very striking and convincing.[13] It followed also from Poisson's calculations, that when two electrized spheres are brought near each other, the accumulation of the opposite electricities on their nearest points increases without limit as the spheres approach to contact; so that before the contact takes place, the external resistance will be overcome, and a *spark* will pass.

Though the relations of non-conductors to electricity, and various other circumstances, leave many facts imperfectly explained by the theory, yet we may venture to say that, as a theory which gives the laws of the phenomena, and which determines the distribution of those elementary forces, on the surface of electrized bodies, from which elementary forces (whether arising from the presence of a fluid or not,) the total effects result, the doctrine of Dufay and Coulomb, as developed in the analysis of Poisson, is securely and permanently established. This part of the subject has been called *statical electricity*. In the establishment of the theory of this branch of science, we must, I conceive, allow to Dufay more merit than is generally ascribed to him; since he saw clearly, and enunciated in a manner which showed that he duly appreciated their capital character, the two chief principles,—the conditions of electrical attraction and repulsion, and the apparent existence of two kinds of electricity. His views of attraction are, indeed, partly expressed in terms of the Cartesian hypothesis of vortices, then prevalent in France; but, at the time when he wrote, these forms of speech indicated scarcely anything besides the power of attraction. Franklin's real merit as a discoverer was, that he was one of the first who distinctly conceived the electrical *charge* as a derangement of equilibrium. The great fame which, in his day, he enjoyed, arose from the clearness and spirit with which he narrated his discoveries; from his dealing with electricity in the imposing form of thunder and lightning; and partly, perhaps, from his character as an

[12] No. li. [13] *Mém. A. P.* 1811.