mathematician to compare the results of the theory in detail with those of experimental measures. Coulomb undertook both portions of the task. He examined the electricity of portions of bodies by means of a little disk (his *tangent plane*) which he applied to them and then removed, and which thus acted as a sort of electric *taster*. His numerical results (the intensity being still measured by the torsion-balance) are the fundamental facts of the theory of the electrical fluid. Without entering into detail, we may observe that he found the electricity to be entirely collected at the surface of conductors (which Beccaria had before shown to be the case), and that he examined and recorded the electric intensity at the surface of globes, cylinders, and other conducting bodies, placed within each other's influence in various ways.

The mathematical calculation of the distribution of two fluids, all the particles of which attract and repel each other according to the above law, was a problem of no ordinary difficulty; as may easily be imagined, when it is recollected that the attraction and repulsion determine the distribution, and the distribution reciprocally determines the attraction and repulsion. The problem was of the same nature as that of the figure of the earth; and its rigorous solution was beyond the powers of the analysis of Coulomb's time. He obtained, however, approximate solutions with much ingenuity; for instance, in a case in which it was obvious that the electric fluid would be most accumulated at and near the equator of a certain sphere, he calculated the action of the sphere on two suppositions: first, that the fluid was all collected precisely at the equator; and next, that it was uniformly diffused over the surface; and he then assumed the actual case to be intermediate between these two. By such artifices he was able to show that the results of his experiments and of his calculations gave an agreement sufficiently near to entitle him to consider the theory as established on a solid basis.

Thus, at this period, mathematics was behind experiment; and a problem was proposed, in which theoretical numerical results were wanted for comparison with observation, but could not be accurately obtained; as was the case in astronomy also, till the time of the approximate solution of the Problem of Three Bodies, and the consequent formation of the Tables of the Moon and Planets on the theory of universal gravitation. After some time, electrical theory was relieved from this reproach, mainly in consequence of the progress which astronomy had occasioned in pure mathematics. About 1801,