

matter to certain changing places in an empty space, and to attach the forces of nature likewise to this distribution of matter. This was hardly the intention of the author himself, who saw in the so-called law of gravitation not a final explanation, but only a description of the phenomena of nature—notably of the larger phenomena. That behind the mathematical formula there may be conditions which are capable of further analysis,—that the larger or molar phenomena of moving bodies are made up of their smaller or molecular movements, was well known to Newton. For before he approached the great laws of the universe he had been occupied with investigations which led him into the minutest phenomena, those of light and colour. To him, indeed, are owing some of the observations and methods by which subsequently the greatest and the smallest measurements of natural objects have been carried out. But in exact science the deeper philosophical meanings disappear where the strict mathematical deductions point to definite conceptions, mark certain fixed paths of research, and promise definite results. The eighteenth century gradually settled down to a wholesale adoption of the gravitation theory—looked upon space as empty, upon matter as subject to a definite though changing distribution in space, and upon the forces of nature as attached to certain moving centres, between which only a mathematical, but no intelligible physical, connection

—whether it was empty or full—the two doctrines came into conflict. That Newton's position was not a final, but only a provisional one, was overlooked; he was accused of introducing again the occult quali-

ties of the scholastic philosophy, and a great fight was started against his views in the Academy of Sciences, where Descartes' philosophy reigned supreme.