

and modern times a convenient resting-place; but the repose which it afforded has never been long enjoyed; every new attempt to attach permanent, ultimate, or intrinsic properties to matter, or to its particles, has provoked the desire to explain these properties by going still farther back, and to see in them, through the dissecting microscope of the mind's eye, a still more hidden motion. Two of the most suggestive ideas by which physical science has benefited in the nineteenth century are the successful explanation of the dead pressure of gases by a rapid translational, and of the rigidity of solid bodies by a rapid rotational, motion of matter. The second of these suggestions is far from being exhausted in its capabilities; the working out of the ultimate problems which it suggests will be one of the principal tasks of the coming age.

2.
Descartes'
develop-
ment of
the kinetic
view.

The kinetic view of nature, however useful and suggestive it may have shown itself to be in recent times, did not yield any fruits of real knowledge either in the hands of the ancients or even in those of the first great philosopher of modern times, in those of Descartes. Just like attraction and atomism, the kinetic theory had to be worked out by the instruments of measurement and calculation, by the exact method, before it led to any actual results. The kinetic view of nature was made scientifically possible when Newton, in the First Book of the 'Principia,' laid down for all time the laws of motion. And yet we can hardly say that Newton himself developed this promising vein of exploration; for, even while opening out an endless vista of research, he also, in the enunciation of the so-called law of gravitation, afforded only