

and admirable qualities which such an office requires, have justly excited in a very eminent degree the admiration which mankind feel for great intellectual powers. Their names occupy a distinguished place in literary history; and probably there are no scientific reputations of the last century higher, and none more merited, than those earned by the great mathematicians who have laboured with such wonderful success in unfolding the mechanism of the heavens; such for instance as D'Alembert, Clairault, Euler, Lagrange, Laplace.

But it is still important to recollect, that the mental employments of men, while they are occupied in this portion of the task of the formation of science, are altogether different from that which takes place in the mind of a discoverer, who, for the first time, seizes the principle which connects phenomena before unexplained, and thus adds another original truth to our knowledge of the universe. In explaining, as the great mathematicians just mentioned have done, the phenomena of the solar system by means of the law of universal gravitation, the conclusions at which they arrived were really included in the truth of the law itself, whatever skill and sagacity it might require to develop and extricate them from the general principle. But when Newton conceived and established the law itself, he added to our knowledge something which was not contained in any truth previously known, nor deducible from it by any course of mere reasoning. And the same distinction, in all other cases, obtains, between these processes which establish the principles, generally few and simple, on which our sciences rest, and those reasonings and calculations, founded on the principles thus obtained, which constitute by far the larger portion of the common treatises on the most complete of the sciences now cultivated.

Since the difference is so great between the process of inductive generalization of physical facts, and that of mathematical deduction of consequences, it is