

not the perfection of the mathematical habits of the mind, but the deficiency of the habit of apprehending truth of other kinds;—not a clear insight into the mathematical consequences of principles, but a want of a clear view of the nature and foundation of principles;—not the talent for generalizing geometrical or mechanical relations, but the tendency to erect such relations into ultimate truths and efficient causes. The most consummate mathematical skill may accompany and be auxiliary to the most earnest piety, as it often has been. And an entire command of the conceptions and processes of mathematics is not only consistent with, but is the necessary condition and principal instrument of every important step in the discovery of physical principles. Newton was eminent above the philosophers of his time, in no one talent so much as in the power of mathematical deduction. When he had caught sight of the law of universal gravitation, he traced it to its consequences with a rapidity, a dexterity, a beauty of mathematical reasoning which no other person could approach; so that on this account, if there had been no other, the establishment of the general law was possible to him alone. He still stands at the head of mathematicians as well as of philosophical discoverers. But it never appeared to him, as it may have appeared to some mathematicians who have employed themselves on his discoveries, that the general law was an ultimate and sufficient principle: that the point to which he had hung his chain of deduction was the highest point in the universe. Lagrange, a modern mathematician of transcendent genius, was in the habit of saying, in his aspirations after future fame, that Newton was fortunate in having had the system of the world for his problem, since its theory could be discovered once only. But Newton himself appears to have had no such persuasion that the problem he had solved was unique and final: he laboured to reduce gravity to some higher law, and the forces of other physical operations to an analogy