

the name of the kinetic<sup>1</sup> theory or view of nature. It has frequently been placed in opposition to the atomic theory, and the history of the natural philosophy of the earlier ages, down to Newton, has in recent years been written from this point of view.<sup>2</sup> If everything is motion, there must still be something that moves, and the question arises, What is it that moves? The system of Epicurus, and the great poem in which it has found a classical expression, are really more occupied with describing the final elements of matter—the so-called nature of things—than with studying the different modes of their motion. In the atomic theory, in the conception of an infinite number of moving particles, the kinetic tendency of thought repeatedly found both in ancient

“There is no certainty in science where some mathematics are not applicable” (quoted by Lasswitz, ‘Geschichte der Atomistik,’ 1890, vol. ii. p. 11); and Leibniz, in a letter to Foucher dated 1693, condemns his earlier tract entitled ‘Hypothesis Physica’ as a “juvenile attempt of one who had not yet fathomed mathematics” (Gerhardt’s edition of Leibniz’s ‘Philosophische Schriften,’ vol. i. p. 415).

<sup>1</sup> The word “kinetic” seems to have been introduced into scientific literature by Ampère, who uses the term “cinématique” to denote that portion of mechanics where “les mouvements sont considérés en eux-mêmes, tels que nous les observons dans les corps qui nous environnent, et spécialement dans les appareils appelés machines” (‘Essai sur la Philosophie des Sciences,’ 1834). In English text-books the term kinematics, following Thomson and Tait (‘Natural Philosophy,’ Preface), is used to denote what French writers call “cinématique

pure,” formerly called “phoronomie,” the doctrine of the purely geometrical properties of motion, without reference to the cause of motion; the consideration of the latter being the special study of “kinetics,” which, together with “statics,” is comprised in the term “dynamics.” The acceptance of the word “kinetic” to denote the view that motion is at the bottom of all natural processes dates probably from the writings of Thomson (Lord Kelvin), Tait, and Clerk Maxwell, who, under the influence of Newton and the great French school of Lagrange, Ampère, Poincaré, Poncelet, and others, have reformed English, and subsequently also German, thought and nomenclature in these subjects.

<sup>2</sup> I refer to the highly interesting and important work of Professor Kurd Lasswitz, ‘Geschichte der Atomistik vom Mittelalter bis Newton,’ 2 vols., Hamburg and Leipzig, 1890.