chanics, any more than the notions of *square* and *round* make a Geometry, or the notions of *months* and *years* make an Astronomy. The unfolding these Notions into distinct Ideas, on which can be founded principles and reasonings, is further requisite, in order to produce a science; and, with respect to the doctrines of Motion, this was long in coming to pass; men's thoughts remained long entangled in their primitive and unscientific confusion.

We may mention one or two features of this confusion, such as we find in authors belonging to the period now under review.

We have already, in speaking of the Greek School Philosophy, noticed the attempt to explain some of the differences among Motions, by classifying them into Natural Motions and Violent Motions; and we have spoken of the assertion that heavy bodies fall quicker in proportion to their greater weight. These doctrines were still retained: yet the views which they implied were essentially erroneous and unsound; for they did not refer distinctly to a measurable Force as the cause of all motion or change of motion; and they confounded the causes which *produce*, and those which *preserve*, motion. Hence such principles did not lead immediately to any advance of knowledge, though efforts were made to apply them, in the cases both of terrestrial Mechanics and of the motions of the heavenly bodies.

The effect of the Inclined Plane was one of the first, as it was one of the most important, propositions, on which modern writers employed themselves. It was found that a body, when supported on a sloping surface, might be sustained or raised by a force or exertion which would not have been able to sustain or raise it without such support. And hence, *The Inclined Plane* was placed in the list of Mechanical Powers, or simple machines by which the efficacy of forces is increased: the question was, in what proportion this increase of efficiency takes place. It is easily seen that the force requisite to sustain a body is smaller, as the slope on which it rests is smaller; Cardan (whose work, *De Proportionibus Numerorum, Motuum, Ponderum*, &c., was published in 1545) asserts that the force is double when the angle of inclination is double, and so on for other proportions: this is probably a guess, and is an erroneous one. Guido Ubaldi, of Marchmont, published at Pesaro, in 1577, a work which he called *Mechanicorum Liber*, in which he endeavors to prove that an acute wedge will produce a greater mechanical effect than an obtuse one, without determining in what proportion. There is, he observes, "a certain repugnance" between the direction in which the side of the wedge tends to