

a summary statement, the results of the general examination of nature, so far as it has been prosecuted to the discovery of natural agents, and the mode in which they act.

(233.) The first great agent which the analysis of natural phenomena offers to our consideration, more frequently and prominently than any other, is force. Its effects are either, 1st, to counteract the exertion of opposing force, and thereby to maintain *equilibrium*; or, 2dly, to produce *motion* in matter.

(234.) Matter, or that, whatever it be, of which all the objects in nature which manifest themselves directly to our senses consist, presents us with two general qualities, which at first sight appear to stand in contradiction to each other—activity and inertness. Its activity is proved by its power of spontaneously setting other matter in motion, and of itself obeying their mutual impulse, and moving under the influence of its own and other force; inertness, in refusing to move unless obliged to do so by a force impressed externally, or mutually exerted between itself and other matter, and by persisting in its state of motion or rest unless disturbed by some external cause. Yet, in reality, this contradiction is only apparent, force being the cause, and motion the effect, produced by it on matter. To say that matter is inert, or has *inertia*, as it is termed, is only to say that the cause is expended in producing its effect, and that the same cause cannot (without renewal) produce double or triple its own proper effect. In this point of view, equilibrium may be conceived as a continual production of two opposite effects, each undoing at every instant what the other has done.

(235.) However, if this should appear too metaphysical, at all events this difference of effects gives rise to two great divisions of the science of force, which are commonly known by the names of **STATICS** and **DYNAMICS**; the latter term, which is general, and has been used by us before in its general sense, being usually confined to the doctrine of motion, as produced and modified by force. Each of these great divisions again