

*generalize* the phenomenon, and include it, with others analogous to it, in the expression of some law, in the hope that its consideration, in a more advanced state of knowledge, may lead to the discovery of an adequate proximate cause.

(138.) Experience having shown us the manner in which one phenomenon depends on another in a great variety of cases, we find ourselves provided, as science extends, with a continually increasing stock of such antecedent phenomena, or causes (meaning at present merely proximate causes), competent, under different modifications, to the production of a great multitude of effects, besides those which originally led to a knowledge of them. To such causes Newton has applied the term *veræ causæ*; that is, causes recognised as having a real existence in nature, and not being mere hypotheses or figments of the mind. To exemplify the distinction:—The phenomenon of shells found in rocks, at a great height above the sea, has been attributed to several causes. By some it has been ascribed to a plastic virtue in the soil; by some, to fermentation; by some, to the influence of the celestial bodies; by some, to the casual passage of pilgrims with their scallops; by some, to birds feeding on shell-fish; and by all modern geologists, with one consent, to the life and death of real mollusca at the bottom of the sea, and a subsequent alteration of the relative level of the land and sea. Of these, the plastic virtue and celestial influence belong to the class of figments of fancy. Casual transport by pilgrims is a real cause, and might account for a few shells here and there dropped on frequented passes, but is not extensive enough for the purpose of explanation. Fermentation, generally, is a real cause, so far as that there *is such a thing*; but it is not a real cause of the production of a shell in a rock, since no such thing was ever witnessed as one of its effects, and rocks and stones do not ferment. On the other hand, for a shell-fish dying at the bottom of the sea to leave his shell in the mud, where it becomes silted over and imbedded, happens daily; and the elevation of the bottom of the sea to become dry