

by means of volcanic agents of which we have any knowledge.

Thus, we repeat, it is in vain to seek amidst the forces now acting on the surface of the earth, for causes sufficiently powerful to produce the revolutions and catastrophes of which its exterior bears traces; and if we have recourse to the external causes at present in action, we shall not find them adapted for the purpose.

CONSTANT ASTRONOMICAL CAUSES.

The pole of the earth moves in a circle about the pole of the ecliptic; its axis inclines more or less according to the ecliptic; but these two motions (which are well understood) are performed within known directions and limits, and have no proportion to the effects, the extent of which we have just considered. In every instance, their extreme slowness would preclude the idea that they had any influence on the catastrophe which we have proved to be violent and sudden.

This latter reason is applied to all the slow agencies that have been imagined, doubtlessly, in the hope that their existence could not be denied, because it would be always easy to assert that their tardiness made them imperceptible. True, or not, is of little consequence; they explain nothing, for no slow causes can produce sudden results. There may have been a gradual diminution of the waters, the sea may have conveyed every kind of solid matter, the temperature of the globe may have increased or diminished, but none of them have been the agents which have disturbed our layers, which have clothed with ice great quad-