

with their effects.* He alludes, for example, to the upheaving of one of the Eolian islands previous to a volcanic eruption. "The changes of the earth," he says, "are so slow in comparison to the duration of our lives, that they are overlooked (*λανθανει*); and the migrations of people after great catastrophes and their removal to other regions, cause the event to be forgotten." †

When we consider the acquaintance displayed by Aristotle, in his various works, with the destroying and renovating powers of Nature, the introductory and concluding passages of the twelfth chapter of his "Meteorics" are certainly very remarkable. In the first sentence he says, "The distribution of land and sea in particular regions does not endure throughout all time, but it becomes sea in those parts where it was land, and again it becomes land where it was sea: and there is reason for thinking that these changes take place according to a certain system, and within a certain period." The concluding observation is as follows: — "As time never fails, and the universe is eternal, neither the Tànaïs, nor the Nile, can have flowed for ever. The places where they rise were once dry, and there is a limit to their operations; but there is none to time. So also of all other rivers; they spring up, and they perish; and the sea also continually deserts some lands and invades others. The same tracts, therefore, of the earth are not, some always sea, and others always continents, but every thing changes in the course of time."

It seems, then, that the Greeks had not only derived from preceding nations, but had also, in some slight degree, deduced from their own observations, the theory of periodical revolutions in the inorganic world: there is, however, no ground for imagining that they contemplated former changes in the races of animals and plants. Even the fact that marine remains were enclosed in solid rocks, although observed by some, and even made the groundwork of geological speculation, never stimulated the industry or guided the inquiries of naturalists. It is not impossible that the theory of equivocal generation might have engendered some indifference on this subject, and that a belief in the spontaneous production of living beings from the earth or corrupt matter, might have caused the organic world to appear so unstable and fluctuating, that phenomena indicative of former changes would not awaken intense curiosity. The Egyptians, it is true, had taught, and the Stoics had repeated, that the earth had once given birth to some monstrous animals, which existed no longer; but the prevailing opinion seems to have been, that after each great catastrophe the same species of animals were created over again. This tenet is implied in a passage of Seneca, where, speaking of a future deluge, he says, "Every animal shall be generated anew, and man free from guilt shall be given to the earth." ‡

An old Arabian version of the doctrine of the successive revolu-

* Lib. ii. cap. 14, 15, and 16.

† Lib. ii. cap. 14, 15, and 16.

‡ Omne ex integro animal generabitur,

dabiturque terris homo inscius scelerum.

— Quæst. Nat. iii. c. 29.