

deposits absolutely synchronous as regards the time of their deposition, and very little removed from one another in actual distance, and yet containing, upon the whole, entirely distinct groups of organic remains. This arises from the fact that the marine fauna of the Red Sea and Mediterranean belong to different zoological provinces; and the Isthmus of Suez constitutes an impassable obstacle to their inter-migration. We learn, therefore, from this, that owing to the existence of geographical barriers, it is possible for contemporaneous formations, to be found in close contiguity, in a single region, and yet to contain very different fossils.

We are now in a position very briefly to discuss the question of what may be called "geological continuity." As is well known, the entire series of sedimentary or fossiliferous rocks admits of a natural division into a certain number of definite rock-groups or "formations," each of which is characterised by a peculiar and distinctive assemblage of fossils, constituting the "life" of the "period," in which the formation was deposited. The older geologists held, what, perhaps, everyone would at first sight be tempted to think, that the close of each formation was signalled by a general destruction of all the forms of life characteristic of the period, and that the commencement of each new formation was accompanied by a creation of a number of new forms, destined to figure as the characteristic fossils of the same. This theory, however, not only invokes forces and processes which it can in no way account for, but overlooks the fact that most of the great formations were separated by lapses of time unrepresented by any deposition of rock, and yet as long or longer than the whole time occupied in the production of the formation itself. Indeed, we are compelled to admit that what we call the great "formations" are purely artificial divisions, rendered possible by the gaps in our knowledge only, and that if we had a complete series of rock-groups, we could have no such divisions.

Now-a-days, then, most geologists hold that there was no such sudden destruction of life at the close of each great geological epoch, and no such creation of fresh forms, at the commencement of the ensuing period. On the contrary, they hold that there is a geological "continuity," such as we see in other departments of nature; and that the lines which we draw between the great formations merely mark periods of time, the rocks deposited in which are at present