

been a permanence of the position of the continents and oceans throughout geological time, but with many oscillations of these areas, producing submergences and emergences of the land. In this way we can reconcile the vast vicissitudes of the continental areas in different geological periods with that continuity of development from north to south, and from the interiors to the margins, which is so marked a feature. We have, for this reason, to formulate another apparent geological paradox, namely, that while, in one sense, the continental and oceanic areas are permanent, in another, they have been in continual movement. Nor does this view exclude extension of the continental borders or of chains of islands beyond their present limits, at certain periods; and indeed, the general principle already stated, that subsidence of the ocean bed has produced elevation of the land, implies in earlier periods a shallower ocean and many possibilities as to volcanic islands, and low continental margins creeping out into the sea; while it is also to be noted that there are, as already stated, bordering shelves, constituting shallows in the ocean, which at certain periods have emerged as land.

We are thus compelled, as already stated, to believe in the contemporaneous existence in all geological periods, except perhaps the earliest of them, of the three distinct conditions of areas on the surface of the earth, defined in chapter second—oceanic areas of deep sea, continental plateaus and marginal shelves, and lines of plication and folding.

In the successive geological periods the continental plateaus, when submerged, owing to their vast extent of warm and shallow sea, have been the great theatres of the development of marine life and of the deposition of organic limestones, and when elevated, they have furnished the abodes of the noblest land faunas and floras. The mountain belts, especially in the north, have been the refuge and stronghold of land life in periods of submergence; and the deep ocean basins have