

If we take into consideration the converse of this, namely, how beds, which we know to be contemporaneous in the strict sense of the word, necessarily contain, in many cases, wholly different fossils, we shall be further convinced of the propriety of the views here advanced. If one could suddenly remove the sea from the earth, we should find at various points thus rendered accessible, deposits of different kinds, now concealed from us by the ocean, or only partially known by soundings or dredgings. Thus, where now rolls the Pacific Ocean, we should find vast accumulations of calcareous matter in the form of coral rock, and coral reefs. In high northern and in low southern latitudes, we should find great deposits of fine mud and sand, with angular blocks of stone; the whole derived from the great ice-fields of Arctic and Antarctic lands. Over wide areas, again, of the deep Atlantic, we should meet with an impalpable calcareous mud or "ooze." All these different deposits are obviously and necessarily "contemporaneous," not only in the loose geological acceptance of the word, but in its strictest sense. In spite of this fact *they would not contain the same fossils*, and indeed, they would be characterised by organic remains which would be wholly different in each case. The coral reefs of the Pacific would be mainly characterised by the abundance of the remains of corals, though they would also present the *exuvias* of other tropical forms of animals, especially Brachiopods and Echinoderms. The glacial mud of northern seas would contain the remains of arctic Molluscs, along with such other animals as delight in severe cold. Lastly, the "ooze" of the deep Atlantic would contain innumerable *Foraminifera*, along with siliceous sponges, sea-urchins, and Crinoids. We learn from this, therefore, that contemporaneous deposits not only do not necessarily contain the same fossils, but that, if widely separated geographically, they may be characterised by wholly dissimilar assemblages of organisms.

It may happen, again, as pointed out by Sir Charles Lyell, that deposits belonging to different geographical provinces may, as regards space, be extremely close together; and as regards time, may be actually contemporaneous; and yet may not contain any fossils in common, or only a very few. If, for example, any sudden upheaval were to lay bare what is now the floor of the Red Sea, together with that of the Mediterranean, we should find each to be occupied by