all sediment being intercepted by intervening hollows, in which a marine current must clear its waters as thoroughly as a turbid river in a lake. Erroneous theories in geology may be formed not only from overlooking the great extent of simultaneous deposits now in progress, but also from the assumption that such formations may be universal or coextensive with the bed of the ocean.

We frequently observe, on the sea beach, very perfect specimens of fossil shells, quite detached from their matrix, which have been washed out of older formations, constituting the sea-cliffs. They may be all of extinct species, like the Eocene freshwater and marine shells strewed over the shores of Hampshire, yet when they become mingled with the shells of the present period, and buried in the same deposits of mud and sand, they would appear, if upraised and examined by future geologists, to have been all of the same age. That such intermixture and blending of organic remains of different ages have actually taken place in former times, is unquestionable, though the occurrence appears to be very local and exceptional. It is, however, a class of accidents more likely than almost any other to lead to serious anachronisms in geological chronology.

CHAPTER LI.

FORMATION OF CORAL REEFS.

Growth of coral chiefly confined to tropical regions — Principal genera of coral-building zoophytes — Their rate of growth — Seldom flourish at greater depths than twenty fathoms — Atolls or annular reefs with lagoons — Maldiva Isles — Origin of the circular form — Coral reefs not based on submerged volcanic craters — Mr. Darwin's theory of subsidence in explanation of atolls, encircling and barrier reefs — Why the windward side of atolls highest — Subsidence explains why all atolls are nearly on one level — Alternate areas of elevation and subsidence — Origin of openings into the lagoons — Size of atolls and barrier reefs — Objection to the theory of subsidence considered — Composition, structure, and stratified arrangement of rocks now forming in coral reefs — Lime whence derived — Supposed increase of calcareous matter in modern epochs controverted — Concluding remarks.

THE powers of the organic creation in modifying the form and structure of the earth's crust, are most conspicuously displayed in the labours of the coral animals. We may compare the operation of these zoophytes in the ocean, to the effects produced on a smaller scale upon the land by the plants which generate peat. In the case of the Sphagnum, the upper part vegetates while the lower portion is entering into a mineral mass, in which the traces of organization remain when life has entirely ceased. In corals, in like manner, the more durable materials of the generation that has passed away serve as the foundation on which the living animals continue to rear a similar structure.