

grow scattered over the surface, like vegetation upon the land; there are large areas that bear nothing, and others of great extent that are thickly overgrown. There is, however, no green sward to the landscape; sand and fragments fill up the bare intervals between the flowering tufts: or, where the zoöphytes are crowded, there are deep holes among the stony stems and folia.

These fields of growing coral spread over submarine lands, such as the shores of islands and continents, where the depth is not greater than their habits require, just as vegetation extends itself through regions that are congenial. The germ or ovule, which, when first produced, is free, finds afterward a point of rock, or dead coral, or some support to plant itself upon, and thence springs the tree or other forms of coral growth.

The analogy to vegetation does not stop here. It is well known that the *débris* of the forest, decaying leaves and stems and animal remains, add to the soil; that in the marsh or swamp—where decaying vegetation is mostly under water, and sphagnous mosses grow luxuriantly, ever alive and flourishing at top, while dead and dying below,—accumulations of such *débris* are ceaselessly in progress, and deep beds of peat are formed. Similar is the history of the coral mead. Accumulations of fragments and sand from the coral zoöphytes growing over the reef-grounds, and of shells and other relics of organic life, are constantly making; and thus a bed of coral *débris* is formed and compacted. There is this difference, that a large part of the vegetable material consists of elements which escape as gases on decomposition, so that there is a great loss in bulk of the gathered mass; whereas coral is an enduring rock material undergoing no change except the mechanical one of comminution. The animal portion is but a mere fraction of the whole zoöphyte. The coral *débris* and shells fill up the intervals between the coral patches and the cavities among the living tufts, and in this manner produce the reef deposit; and the bed is finally consolidated while still beneath the water.