

fathoms in depth. He accepts also the theory of a volcanic basis as the best explanation of atolls. The accuracy and completeness of Ehrenberg's researches in the Red Sea have been since confirmed by some of the best German authorities on coral life—Haeckel, Klunzinger, Walther.

The reefs of the Bermuda Islands were described by Nelson in 1837, and this author demonstrates reef-growth upon a rock-basis neither volcanic nor even firm and compact; in his conclusions regarding the origin of atolls he supports Ainsworth's views.

One of the most attractive books of the nineteenth century was undoubtedly Charles Darwin's great work, *The Structure and Distribution of Coral Reefs*, published in 1842. Ehrenberg's work had paved the way for broader conceptions about coral reefs; in it the barrier reef, which had in the older literature been kept in the background by the more aggressive features of the atoll, for the first time received its meed of attention. The balance of scientific knowledge regarding the barrier and the atoll was now fairly equal, and Charles Lyell's indication of possible modifications that might ensue in the reef-form under the influence of differential crust-movements also lay open in the recent literature when Darwin's mastermind came to the formidable task of considering all the known data and constructing a scientific generalisation.

Charles Darwin, while a member of the *Beagle* Expedition between 1832 and 1834, examined a large number of coral reefs, atolls, and volcanic islands in the Pacific Ocean, and described them with remarkable method and clearness. He classified coral structures in three groups, now universally accepted—atolls or lagoon reefs, barrier reefs, and fringing reefs. This special work contains a map of the geographical distribution of the coral reefs, and enriches our knowledge by a wealth of new observations on the mode of life of the corals, as well as on the relative part taken by the various coral types in the construction of the reefs.

Darwin confirmed the fact that reef-corals only live at small depths and in tropical areas, and proposed upon the basis of crust subsidence an ingenious theory of reef-growth which connected the three chief varieties of reefs by intermediate stages. Darwin's theory assumes that every atoll reef was originally the fringing reef of some island, but owing to the subsidence of the ocean-floor, the fringing reef was gradually