

Another argument which I adduced when formerly defending this doctrine was derived from Ehrenberg's statement, that some banks of coral in the Red Sea were square, while many others were ribbon-like strips, with flat tops, and without lagoons. Since, therefore, all the genera and many of the species of zoophytes in the Red Sea agreed with those which elsewhere construct lagoon islands, it followed that the stone-making zoophytes are not guided by their own instinct in the formation of annular reefs, but that this peculiar shape and the position of such reefs in the midst of a deep ocean must depend on the outline of the submarine bottom, which resembles nothing else in nature but the crater of a lofty submerged volcanic cone. The enormous size, it is true, of some atolls made it necessary for me to ascribe to the craters of many submarine volcanos a magnitude which was startling, and which had often been appealed to as a serious objection to the volcanic theory. That so many of them were of the same height, or just level with the water, did not present a difficulty so long as we remained ignorant of the fact that the reef-building species do not grow at greater depths than twenty-five fathoms.

*May be explained by subsidence.* — Mr. Darwin, after examining a variety of coral formations in different parts of the globe, was induced to reject the opinion that their shape represented the form of the original bottom. Instead of admitting that the ring of dead coral rested on a circular or oval ridge of rock, or that the lagoon corresponded to a pre-existing cavity, he advanced a new opinion, which must, at first sight, seem paradoxical in the extreme; namely, that the lagoon is precisely in the place once occupied by the highest part of a mountainous island, or, in other cases, by the top of a shoal.

The following is a brief sketch of the facts and arguments in favour of this new view: — Besides those rings of dry coral which inclose lagoons, there are others having a similar form and structure which encircle lofty islands. Of the latter kind is Vanikoro, celebrated on account of the shipwreck of *La Peyrouse*, where the coral reef runs at the distance of two or three miles from the shore, the channel between it and the land having a general depth of between 200 and 300 feet. This channel, therefore, is analogous to a lagoon, but with an island standing in the middle like a picture in its frame. In like manner in Tahiti we see a mountainous land, with every where round its margin a lake or zone of smooth salt water, separated from the ocean by an encircling reef of coral, on which a line of breakers are always foaming. So also New Caledonia, a long narrow island east of New Holland, in which the rocks are granitic, is surrounded by a reef which runs for a length of 400 miles. This reef encompasses not only the island itself, but a ridge of rocks which are prolonged in the same direction beneath the sea. No one, therefore, will contend for a moment that in this case the corals are based upon the rim of a volcanic crater, in the middle of which stands a mountain or island of granite.

The great barrier reef, already mentioned as running parallel to the