

distance of only 2,200 yards from the shore; hence this island forms a lofty submarine mountain, with sides steeper even than those of the most abrupt volcanic cone. The saucer-shaped summit is nearly ten miles across; and every single atom,¹ from the least particle to the largest fragment of rock, in this great pile, which, however, is small compared with very many other lagoon-islands, bears the stamp of having been subjected to organic arrangement. We feel surprise when travellers tell us of the vast dimensions of the Pyramids and other great ruins, but how utterly insignificant are the greatest of these when compared to these mountains of stone accumulated by the agency of various minute and tender animals! This is a wonder which does not at first strike the eye of the body, but, after reflection, the eye of reason.

I will now give a very brief account of the three great classes of coral-reefs; namely, Atolls, Barrier, and Fringing Reefs, and will explain my views² on their formation. Almost every voyager who has crossed the Pacific has expressed his unbounded astonishment at the lagoon-islands, or as I shall for the future call them by their Indian name of atolls, and has attempted some explanation. Even as long ago as the year 1605, Pyrard de Laval well exclaimed, "C'est une merueille de voir chacun de ces atollons, environné d'un grand banc de pierre tout autour, n'y avant point d'artifice humain." The sketch on next page of Whitsunday Island in the Pacific, copied from Captain Beechey's admirable "Voyage," gives but a faint idea of the singular aspect of an atoll: it is one of the smallest size, and has its narrow islets united together in a ring. The immensity of the ocean, the

¹ I exclude, of course, some soil which has been imported here in vessels from Malacca and Java, and likewise some small fragments of pumice, drifted here by the waves. The one block of greenstone, moreover, on the northern island must be excepted.

² These were first read before the Geological Society in May, 1837, and have since been developed in a separate volume on the Structure and Distribution of Coral Reefs.