

and the longer the subsidence continues the farther will the coast of the mainland recede.

When the first edition of this work appeared in 1831, several years before Mr. Darwin had investigated the facts on which his theory is founded, I had come to the opinion that the land was subsiding at the bottom of those parts of the Pacific where atolls are numerous, although I failed to perceive that such a subsidence, if conceded, would equally solve the enigma as to the form both of annular and barrier reefs.

I shall cite the passage referred to, as published by me in 1831: —  
 “It is a remarkable circumstance that there should be so vast an area in Eastern Oceanica, studded with minute islands, without one single spot where there is a wider extent of land than belongs to such islands as Otaheite, Owhyhee, and a few others, which either have been or are still the seats of active volcanos. If an equilibrium only were maintained between the upheaving and depressing force of earthquakes, large islands would very soon be formed in the Pacific; for, in that case, the growth of limestone, the flowing of lava, and the ejection of volcanic ashes, would combine with the upheaving force to form new land.

“Suppose a shoal, 600 miles in length, to sink fifteen feet, and then to remain unmoved for a thousand years; during that interval the growing coral may again approach the surface. Then let the mass be re-elevated fifteen feet, so that the original reef is restored to its former position: in this case, the new coral formed since the first subsidence will constitute an island 600 miles long. An analogous result would have occurred if a lava-current fifteen feet thick had overflowed the submerged reef. The absence, therefore, of more extensive tracts of land in the Pacific, seems to show that the amount of subsidence by earthquakes exceeds, in that quarter of the globe, at present, the elevation due to the same cause.” \*

Another proof also of subsidence derived from the structure of atolls, was pointed out by me in the following passage in all former editions. “The low coral islands of the Pacific,” says Captain Beechey, “follow one general rule in having their windward side higher and more perfect than the other. At Gambier and Matilda islands this inequality is very conspicuous, the weather side of both being wooded, and of the former inhabited, while the other sides are from twenty to thirty feet under water; where, however, they may be perceived to be equally *narrow* and well defined. It is on the leeward side also that the entrances into the lagoons occur; and although they may sometimes be situated on a side that runs in the direction of the wind, as at Bow Island, yet there are none to windward.” These observations of Captain Beechey accord with those which Captain Horsburgh, and other hydrographers, have made in regard to the coral islands of other seas. From this fortunate circumstance ships can enter and sail out with ease; whereas if the narrow inlets were to windward, vessels which once entered might not succeed for months in making their way out again. The

\* See Principles of Geology, 1st ed., vol. ii. p. 296.