

of Dolphin shoal, below the level of this slab, was carefully ascertained. By adopting this precaution, any error from change of level in the island was guarded against. The slab remains as a stationary mark for future voyagers to test the rate of increase of the shoal. Before, however, the results can be of any general value towards determining the average rate of growing reefs, it is still necessary that the growing condition of the reef should be ascertained, the species of corals growing upon it be identified, and the influence of the currents investigated which sweep in that direction out of Matavai bay.¹

The depth to which the shells of *Tridacnas* lie imbedded in coral rock has been supposed to afford some data for estimating the growth of reefs. But Mr. Darwin rightly argues that these mollusks have the power of sinking themselves in the rock as they grow, by removing the lime about them. They

¹ Since the above was written, a memoir, by MM. Le Clerc and de Bénazé, has appeared in Paris (1872), on their attempts to make use of the stone planted by Captain Wilkes in determining the rate of growth of the Dolphin Shoal. They made various measurements; but they observe that Wilkes does not state whether he measured from the top of a head of coral or from a solid bank on which the corals were growing, and further, that the use of an "excellent spirit level," from a stone of so little length is not sufficiently exact for correct results; and hence, were not able to draw any satisfactory conclusion from their results. Before leaving the region, they made the following arrangements with reference to future measurements. They planted two blocks of coral, cementing them below and nearly burying them in the soil, placing them 0.21 metres above the Wilkes stone which is between them; they then put a mark upon them on plates of metal, directed toward the place of observation on the shoal. A third stone was placed 40 metres from the south-west angle of the Point Venus lighthouse, in order to give a second observation on the position of the spot on which soundings were to be made. This spot was found to bear from the two new stones N. 77° 30' E.; from the third stone N. 70° 55' E.; from the bell of the new mission church S. 81° 40' E. A horizontal line passing from the mark on the new stone is 7.460^m above the madreporic heads. This observation they leave for comparison with future measurements. They farther made observations that satisfied them that Tahiti was not at present undergoing any general elevation. Two maps accompany the pamphlet; one is copied from Wilkes; the other (see opposite page) is from a chart by MM. Le Clerc and Minier, lieutenants of the vessel, and contains lines showing the position of the points referred to above.