

depth is 2 or 3 feet. The bottom is covered with a fine calcareous sand, and in some parts of the lagoons living Actiniaria, Hydroids, &c., are found growing. These little atolls were evidently formed without subsidence, and at once suggested the possibility that the larger atolls of the Pacific and Indian Oceans might have been formed by a somewhat similar mode of growth.

Attention was directed during the stay to defining, as far as practicable, the edges and slope of the bank or atoll, carrying the soundings down to 1500 or 2000 fathoms, in fact, to oceanic depths. No information on these points had as yet been ascertained, but it was believed—from the fact of H.M.S. “Ariadne” having obtained a cast of $11\frac{1}{2}$ fathoms 4 miles from the breakers or rocks awash, and from the statement that banks existed in a S.W. direction from the island,¹ which had been surveyed by H.M.S. “Columbine” in 1829—that the bank on which the islands and reefs are situated was really of much larger extent than was generally supposed. By the kindness of Captain Aplin, then in charge of the dockyard, who placed one of the yard tugs at the disposal of the Expedition, and gave assistance in other ways, it was possible to commence this work at once. It was found that on the southeast edge of the bank the 100 fathom line of soundings was at an average distance of $1\frac{1}{4}$ miles from the rocks awash, and that the depth increased rapidly from 30 to 350 or 400 fathoms, the slope being at an angle of about 20° from the horizontal, but from that depth to 1000 fathoms the slope varied from 7° to 15° from the horizontal. On the northeast edge of the bank the 100 fathom line of soundings was at an average distance of 3 miles from the rocks awash, and the slope was much more gradual. On the southwest side of the bank the 100 fathom line of soundings appears to extend at one point nearly 5 miles from the rocks awash.

About 4 miles southwest of the southwest extremity of the 100 fathom edge of the Bermuda Bank the Challenger sounded and anchored on the “inner bank” of the “Columbine,” in 30 fathoms, with Gibb’s Hill lighthouse, N. $54^\circ 14'$ E. (true), distant 13 miles. The boats were employed one day in obtaining soundings on this bank, but owing to the rough weather rendering the men sick,² and to the barometer falling, the officers were unable to define its limits or to look for the “outer shoal,” out of sight of land, on which the “Columbine” anchored in 1820, and on which soundings were also taken by the “Larne” in 1836. From the depths obtained, the inner or Challenger Bank appears to be of some extent, certainly not less than 10 miles in circumference, the shallowest water found being 24 fathoms, and it is quite possible that it joins the outer or “Columbine” Bank, or that at any rate the depths between the two do not much exceed 100 fathoms.

In the depression, $3\frac{1}{2}$ miles wide, between the Challenger Bank and the southwest extremity of the Bermuda Bank, the soundings, in all probability, do not exceed 1000

¹ Dana, Corals and Coral Islands, London, 1872; Findlay, North Atlantic Memoir, London, 1856.

² Seamen unused to the work of surveying ships are very often sea-sick in boats.