

fathoms, as a cast of 1075 fathoms was obtained just east of the northwest part of the depression and another of 1250 fathoms just west of it.¹

Circumstances did not permit of the definition of the edge of the 100 fathom bank on the northwest side of the Bermudas, but a cast of 1370 fathoms was obtained at a distance of 6 miles from the rocks awash, and one of 2100 fathoms at a distance of 10 miles. The deepest sounding obtained close to the atoll was one of 1950 fathoms, $5\frac{1}{2}$ miles west of the extreme west point of the rocks awash (see Sheet 8).

Another important point to which attention was directed was the magnetic condition of the islands. Observations made by the Governor, General Lefroy, at his official residence, differed considerably from the Admiralty charts, and, consequently, instructions were received from the Hydrographer to ascertain whether those charts were in error or not. The observations made by the Expedition showed that the variation differed in various parts of the island as much as 6° , ranging from 4° W. to 10° W., the smallest amount being found at a small islet just under the lighthouse on Gibb's Hill, and the greatest at the point on the west side of Clarence Cove. The correct variation was found by swinging the ship on all points of the compass, and ascertaining its errors by azimuths of the sun, and the result so obtained agreed precisely with the Admiralty chart. It does not appear that before the visit of the Expedition this peculiarity of the Bermuda group was known, as the islands were said to consist entirely of calcareous rocks, derived from comminuted shells and corals, although Lieutenant Nelson, R.E., noticed on the island small pieces of oxide of iron of very questionable origin. It is, however, evident from these observations² that some disturbing cause exists in the neighbourhood of the islands which vitiates magnetic observations taken on shore.

At a depth of 200 fathoms, about 2 miles from the reefs, the deposit was composed of large fragments of Coral, Foraminifera, Echinoderms, Polyzoa, Molluscs, Algæ, and concretionary lumps, some of which were 2 or 3 centimetres in diameter. At 380 fathoms, 3 miles from the reefs, the fragments were smaller, and, in addition to the above, there were many Pteropod and Heteropod shells. At 950 fathoms, 4 miles from the reefs, the particles were still smaller, and there was a considerable admixture of pelagic Foraminifera. At 1950 fathoms, 5 miles from the reefs, the deposit was a nearly pure Globigerina ooze, made up chiefly of pelagic Foraminifera, with only a small proportion of species living on the bottom, and fragments from the reefs. All these deposits contained from 85 to 91 per cent. of carbonate of lime. The residue, after treatment with weak acid, consisted of a few siliceous spicules, fragments of felspar, augite, magnetite, and glassy rocks; none of the mineral particles exceeded 0.07 mm. in diameter. At 2600 fathoms, 30 miles from the reef, the deposit was a Globigerina ooze, containing only about 50 per cent. of carbonate of lime.

¹ Since this was written the outer bank, over which the least depth is 10 fathoms, has been surveyed by H.M.S. "Argus," and named after that vessel, the depth between it and the Challenger Bank being about 500 fathoms.

² Narr. Chall. Exp., vol. ii. p. 25, 1882.