Ascension to Cape Verdes.—On this trip three dredgings, four soundings, and eight serial temperatures were obtained (see Chart 12 and Diagram 7). The depths ranged from 2010 fathoms to 2450 fathoms, and the deposit in each case was a Globigerina Ooze, containing 94 per cent. of carbonate of lime in the former depth and 83 per cent. in the latter depth. Only one or two small fragments of Pteropod shells were observed in these deposits, in which the carbonate of lime consisted chiefly of the shells of pelagic Foraminifera, Coccoliths, and Rhabdoliths. The remains of siliceous organisms did not make up more than 2 per cent. of the whole deposit. The mineral particles were exceedingly minute, and consisted of fragments of felspars, hornblende, augite, and magnetite.

Cape Verdes to England.—On the 3rd May 1876, in lat. 26° 21′ N., long. 33° 37′ W., a sounding was obtained in 2965 fathoms (see Chart 6), the bottom being Red Clay containing in the surface layers 12. per cent. of carbonate of lime, which consisted of a few shells of the larger pelagic Foraminifera and their broken fragments. The mineral particles did not exceed 0·1 mm. in diameter, and consisted of a few grains of felspar, quartz, hornblende, magnetite, volcanic glass, and manganese peroxide. The principal part of the deposit consisted of flocculent clayey matter, with exceedingly minute fragments of minerals, Radiolarians, and Sponge spicules.

On the 6th May, in lat. 32° 41′ N., long. 36° 6′ W., another sounding was obtained in 1675 fathoms, the deposit being a Globigerina Ooze containing 91 per cent. of carbonate of lime, which consisted of pelagic Foraminifera, Coccoliths, Rhabdoliths, and a few fragments of Pteropods and Echinoderms. The residue, after the removal of the carbonate of lime by dilute acid, resembled in most respects the Red Clay found at greater depths in the same region of the Atlantic.

2. *Southern and Antarctic Oceans.*

Cape of Good Hope to Prince Edward and Marion Islands.—On the 17th December 1873, the Challenger left Simon's Bay for the southern cruise. A sounding and dredging were taken in 98 fathoms (see Chart 18 and Diagram 8). The deposit consisted of a green glauconitic sand, containing 50 per cent. of carbonate of lime, which was derived chiefly from shells of Foraminifera, fragments of Molluscs, Polyzoa, *Serpula*, and Echinoderms.

On the 18th the ship sounded and dredged in 150 fathoms. The deposit was nearly the same as on the preceding day, the carbonate of lime being a little higher, viz., 68 per cent. Glauconite is exceptionally abundant in these deposits on the Agulhas Bank; the grains are about one millimetre in diameter, and are isolated or agglomerated into phosphatic nodules several centimetres in diameter. Besides these grains, the Foraminifera are often filled with a pale green glauconitic substance, which only rarely shows all the typical characters of glauconite. This green material remained as an internal cast of the