

*Orbulina universa*, together with other Foraminifera and fragments of Echinoderms. The mineral particles appeared to make up 1 per cent. of the deposit, and consisted of hornblende, magnetite, felspar, vitreous fragments, and a few quartz grains. There was from 2 to 10 per cent. of Diatoms and Radiolaria in these Globigerina Oozes.

The remaining variety of deposit (Red Clay) was obtained in lat. 42° S. at a depth of 2600 fathoms (see Chart 24). It contained 18 per cent. of carbonate of lime, consisting of entire shells and fragments of *Globigerina bulloides*, *Globigerina inflata*, and *Globigerina rubra*, *Pulvinulina micheliniana*, *Orbulina universa*, a few other Foraminifera, Coccoliths, Polyzoa, and fragments of Echinoderms. The mineral particles only formed 1 per cent. of the deposit, and consisted of felspars, hornblende, augite, magnetite, pumice, fragments of volcanic glass, and grains of peroxide of manganese, with a mean diameter of about 0.08 mm., while a few rounded fragments of quartz reached a diameter of 0.5 mm. The remainder of the deposit consisted essentially of amorphous and clayey matter with very minute fragments of minerals and pumice. There was a larger percentage of carbonate of lime in the upper layers of the deposit than in the deeper ones. The trawl brought up 10 or 12 litres of manganese nodules, pumice stones, rolled pebbles of gneiss, fragments of palagonite, earbones of Cetaceans, and sharks' teeth.

From the foregoing description it appears that the deposits forming at the most southerly points reached by the Challenger are composed chiefly of continental debris carried into the ocean by the floating ice of these regions, and that this material makes up less and less of the deposit as the distance from the Antarctic Continent increases until it almost disappears about lat. 46° or 47° S., although at other longitudes in the Atlantic and Pacific continental debris from the Antarctic Continent appears to be carried fully ten degrees farther to the north. The deposits along the Antarctic Ice-barrier, which have been called Blue Muds, resemble in many respects the deposits formed at similar depths off the Atlantic coast of British North America. The nature of the rock fragments dredged in these latitudes conclusively proves the existence of continental land certainly of considerable extent within the Antarctic Circle. One of the fragments of gneiss dredged from a depth of 1950 fathoms measured 50 by 40 centimetres, and weighed more than 20 kilogrammes. In the region occupied by the Diatom Ooze, northward of the Blue Muds, the predominant feature of the deposit is due to the innumerable frustules of Diatoms and skeletons of Radiolaria which have fallen from the surface and subsurface waters of the ocean. Farther north again the pelagic Foraminifera predominate in the deposit, except at the depth of 2600 fathoms, where the greater part of them has been removed by the solvent powers of the sea-water, as is usual at the great depths of the ocean.

South of lat. 50° S., Diatoms were frequently met with in the surface nets in enormous abundance. The most abundant were various species of *Chatoceros*, but there were also many other genera. The tow-nets were on some occasions