

so filled with these that large quantities could be dried by heating over a stove, when a whitish felt-like mass was obtained. Mixed up with these Diatoms there were many species of Radiolaria. Coccospheres and Rhabdospheres, which were found so abundantly in the surface water of the warmer parts of the Atlantic and Southern Oceans, were not met with south of lat. 50° S., either on the surface or in the deposits at the bottom. The same remark applies to *Orbulina universa*, *Pulvinulina*, and several species of *Globigerina*. South of lat. 50° S., the only pelagic Foraminifera found on the surface were *Globigerina bulloides*, *Globigerina dutertrei*, and *Globigerina inflata*, and these were the only pelagic species found in the deposit at the bottom (see Diagrams 9 and 10).

3. Pacific Ocean.

Melbourne to Sydney.—The deposits from the shallow water between Melbourne and Moncœur Island (see Chart 25) were shelly sands with 82 per cent. of carbonate of lime, coming chiefly from fragments of Polyzoa; these fragments were usually over 5 mm. in diameter. Mineral particles formed about 5 per cent., and consisted for the most part of quartz, mica, and felspars. Green casts of the shells were left after treatment with dilute acids.

Soundings were taken in 2200 and 150 fathoms to the north of Cape Howe, the shallower depth being several miles nearer shore. In the former case the deposit was a *Globigerina* Ooze with 62 per cent. of carbonate of lime largely coming from the remains of pelagic Foraminifera. The trawling in 150 fathoms showed that the bottom was covered with Polyzoa, shells, and gravel.

Off Sydney.—The deposits in depths of from 120 to 1200 fathoms off the Australian coast (see Chart 26) were Green Sands and Muds, containing a considerable quantity of glauconite, and resembling in many respects the deposits at similar depths off the south coast of Africa. The deposits from 120 and 290 fathoms were Green Sands, those from greater depths Green Muds. The carbonate of lime ranged from 46 to 50 per cent., and consisted of the shells of *Globigerina*, *Orbulina*, *Pulvinulina*, *Pullenia*, *Miliolina*, *Textularia*, *Discorbina*, *Cristellaria*, and other Foraminifera; Coccospheres and Rhabdoliths; fragments of Pteropods and other pelagic Molluscs; Ostracode valves, fragments of Echinoderms, Polyzoa, and other calcareous organisms. The mineral particles in these deposits were about 0.12 mm. in diameter, and consisted of rounded fragments of quartz, felspars, hornblende, magnetite, mica, volcanic glass, in addition to glauconite. There were a few Radiolaria and Sponge spicules. Many of the Foraminifera shells were filled with green glauconitic matter which remained as internal casts after treatment with dilute acids. A quantity of the glauconitic grains and casts were carefully collected after removing the calcareous organisms by dilute acid, and an analysis of these is given in the description of glauconitic deposits (see Pl. XXIV. fig. 2 for glauconitic casts).