

the bottom consisted of Coral Sands and Muds yielding on analysis about 87 per cent. of carbonate of lime, coming from fragments of Coral, calcareous Algæ, Lamellibranchs, Gasteropods, pelagic and bottom-living Foraminifera. Many of the large fragments were overgrown with *Serpula* and Polyzoa. Mineral particles were few and small, and consisted of pumice, felspar, volcanic glass, augite, magnetite, quartz, and some manganese grains. A few imperfect casts of the organisms remained after treatment with dilute acid. From 150 fathoms, about a mile from the reef, traces of a greenish coloured Volcanic Sand were obtained.

*Admiralty Islands to Japan.*—The deposits between the Admiralty Islands and Japan (see Chart 31) were of very high interest, chiefly from the large number of Radiolaria present in them, and also from the almost complete absence of carbonate of lime in the deeper soundings. In depths greater than 2400 fathoms there was either no carbonate of lime in the deposit or only a small percentage, as for instance in 2450 fathoms in lat. 2° N., where there was 6 per cent., due to the presence in the deposit of a few broken fragments of pelagic Foraminifera shells. On the other hand, there was 79 per cent. of carbonate of lime in the deposit at 1850 fathoms on the Caroline Islands plateau, which was a Globigerina Ooze made up principally of the shells of pelagic Foraminifera, Coccoliths, and Rhabdoliths. The absence of the shells of Pteropods, Heteropods, and other pelagic Molluscs from this deposit is worthy of note, as well as the absence of the Foraminifera shells from all the deeper deposits, as these organisms were very numerous at the surface throughout the whole region. As already stated, siliceous shells and skeletons were especially abundant in some of the deposits in this section, more numerous than in any deposits previously met with during the cruise. In one instance these beautiful little organisms made up about four-fifths of the deposit, which was in consequence called a Radiolarian Ooze. This was the case in the deepest sounding, viz., 4475 fathoms, the greatest depth from which a specimen of the bottom had hitherto been obtained. On this occasion the sounding tube had sunk about 3 or 4 inches (8 or 10 centimetres) into the bottom and brought up a section to that extent. The layer, which formed the upper surface at the bottom of the sea, was of a reddish or chocolate colour, and contained, besides the Radiolarian and Diatomaceous remains, numerous small round pellets of manganese peroxide, fragments of pumice, and clayey matter. The deeper layers were of a pale straw colour, and resembled both in appearance and touch the Diatom Ooze from the Antarctic Ocean. These deeper layers had a laminated structure, and were very compact and difficult to break up, being composed of felted masses of Radiolaria and frustules of Diatoms.

Pumice was very abundant in all the deposits, the trawl frequently bringing up numerous rounded pieces, many of them partly decomposed and coated with manganese peroxide. The mineral fragments in the deposits appeared to be chiefly derived from the pumice, except in the soundings close to the Japan coast. All the deeper deposits