The deposits from depths greater than 1000 fathoms off the coast were Blue Muds containing from a mere trace to 4 per cent. of carbonate of lime, consisting to some extent of remains of pelagic organisms. In these deposits there were two layers—the upper red and the lower of a green or blue colour. Mineral fragments formed from 10 to 30 per cent. of the whole; these were of a volcanic nature. From 1875 fathoms the trawl brought up several pumice stones and many large blocks having the same mineralogical composition and clastic elements as the mud itself; these appeared to be indeed simply conglomerated portions of the bottom. Hardened conglomerations of deposit were also obtained from 420 fathoms.

Japan to the Sandwich Islands.—The deposits between Japan and the Sandwich Islands (see Chart 36) were most interesting. The deposit in 1875 fathoms, off Japan, has already been noticed. In all the greater depths there was no carbonate of lime in the deposits, but it is instructive to notice that at two stations where the depth was less than the average, viz., 2300 and 2050 fathoms, there was respectively 17 and 56 per cent. of carbonate of lime, consisting chiefly of the shells of pelagic Foraminifera; this clearly shows, as has been already pointed out, that the amount of carbonate of lime deposited is in inverse relation to the depth, when as in this instance the surface conditions are the same or nearly so. It is to be noticed, however, that in 2225 fathoms close to the Sandwich Islands there was only a trace of carbonate of lime. A sounding (Station 247), where the depth was 2530 fathoms, was remarkable. In the upper part of the section brought up by the sounding tube there was a reddish clay without any carbonate of lime; this layer was about an inch in thickness, and was somewhat sharply marked off from the lower layers, which were of a much lighter colour, and contained about 10 per cent. of carbonate of lime in the form of shells of pelagic Foraminifera. This condition of things might be explained by supposing that after the lower layers had been laid down, a subsidence of the bottom had taken place to the extent of 200 or 300 fathoms. All the deposits from the Japan coast to the 170th meridian of west longitude contained a very large number of the remains of surface-living siliceous organisms, chiefly Radiolaria. As the Sandwich Islands were approached, the siliceous organisms almost disappeared from the deposits, which were then almost wholly composed of the triturated fragments of pumice and amorphous clayey matter. For the relative depths and percentages of carbonate of lime, see Diagrams 17, 18, and 19.

There were eleven trawlings and two dredgings during the trip, but on four occasions the line parted and the trawls with a considerable length of line were lost. The others were fairly successful and productive. On all occasions the bag of the trawl contained numerous pieces of pumice and many manganese nodules. Some of the rounded fragments of pumice were quite fresh and unaltered; others had undergone profound alteration, and were frequently coated with successive layers of the peroxide of manganese. These pieces of pumice seem to have formed the centres of most of the manganese