to 25 per cent. of carbonate of lime, derived from coral debris, fragments of Pteropods, Gasteropods, Coccoliths, with pelagic and other Foraminifera. The mass of the deposits was formed of fine mineral fragments (see Chart 39).

*Tahiti to Valparaiso.*—As might be expected from the undulating nature of the bottom, and the varying distance from land, the deposits presented considerable variety during the trip between Tahiti and Valparaiso (see Chart 38). In all depths less than 2000 fathoms the deposit was a Globigerina Ooze with over 50 per cent. of carbonate of lime, the highest percentage being 84 in 1600 fathoms. As the 40th parallel south was approached the purely tropical species of pelagic Foraminifera—such as *Globigerina conglobata*, *Sphæroidina dehiscens*, *Pulvinulina tumida*, *Pullenia obliquiloculata*—disappeared both from the surface waters and from the deposits at the bottom. At the depth of 1600 fathoms above referred to the deposit was chiefly composed of the following species, which were mostly dwarfed:—*Globigerina bulloides*, *Globigerina inflata*, *Globigerina dubia*, *Globigerina æquilateralis*, *Orbulina universa*, *Pulvinulina canariensis*, *Pulvinulina micheliniana*, and *Pulvinulina menardii*. There were a few fragments of Pteropods in the deposit from 1500 fathoms, but with this exception the shells of pelagic Mollusca were entirely removed from the bottom.

In depths greater than 2000 fathoms there was less than 50 per cent. of carbonate of lime, viz., 46 per cent. at 2075 fathoms, 26 per cent. at 2375 fathoms, still less in 2400 fathoms, and scarcely a trace in 2600 fathoms, thus showing a gradual diminution in the number of calcareous shells with increasing depth (see Diagrams 19, 20, and 21).

At several stations the sounding tube had penetrated over a foot into the deposit, and on two occasions, viz., at 2075 and 2270 fathoms, there was much less carbonate of lime in the lower layers than in the upper ones; but on another occasion, in 2335 fathoms, the arrangement was the reverse of this, a Red Clay with only a few calcareous shells occupying the surface, and a Globigerina Ooze with very many calcareous shells forming the deeper layers. There were very few remains of siliceous organisms in all these deposits, in which respect they are in marked contrast to the deposits of the Central and West Pacific.

The deposits in 2225 fathoms (see Chart 38) and 2160 fathoms off the coast of South America (see Chart 40) were Blue Muds, similar in all essential respects. The former contained 6, the latter 15, per cent. of carbonate of lime, which consisted chiefly of the shells of *Globigerina* and *Orbulina* and Coccoliths. The mineral particles consisted of quartz, mica, felspars, augite, hornblende, palagonite, and glauconite. It is worthy of note that glauconite was not observed in the deposits after leaving the coast of Japan till approaching Valparaiso, in 2225 fathoms, and with some exceptions the same remark applies to quartz grains. The trawlings on both occasions were very productive, some pumice stones and a few manganese nodules being obtained from 2160 fathoms. At 41 fathoms a Blue Mud was obtained, containing only a trace of carbonate of lime, in which