

agglutinated or coagulated by an argillo-calcareous cement which is not in great abundance. Some of the shells are entirely filled with pale green glauconite, others only partially. The intervals between the shells are not filled up with the cementing matter, and these concretions appeared to be the last phase of disintegration.

Those of the second variety are very irregular in shape, and consist of large pieces of a hard rock traversed in all directions by large and small perforations, with a diameter varying from 1 to 4 centimetres. These blocks have thus a cavernous or coarse cellular appearance. The perforations are covered, like the surface of the rock, with organisms, as Sponges, Polyzoa, &c., and rough to the touch. The smaller perforations have sometimes the appearance of having been produced by lithophagous Molluscs. These concretions have the hardness of calcite; the fragments freshly broken are white-grey. A microscopic examination shows that they are mainly composed of various species of pelagic Foraminifera. Treated with dilute acid the concretions decompose with effervescence, leaving a residue of 20·44 per cent., essentially composed of amorphous matter and glauconitic casts of the Foraminifera, these last being brown or green and feebly transparent. The greenish casts present most of the characters of true glauconite. In the residue there are also a few grains of felspar and quartz. A section of these concretions resembles in most respects a section of a hardened *Globigerina* Ooze from tropical regions, and near a continental shore (see Pl. XII. fig. 2). In this case, however, the shells are nearly all filled and cemented by the finely granular carbonate of lime, while in a *Globigerina* Ooze they are empty. It is not improbable that these large concretions or rock-fragments are hardened portions of a deep-sea deposit formed at a much greater depth, and subsequently elevated into the position in which they were found, probably by the same elevation as that which upheaved the neighbouring islands.

The deposit at 2800 fathoms was a fine-grained Volcanic Mud containing only a trace of carbonate of lime in the form of a few *Pulvinulina* shells. Mineral particles of volcanic origin made up about 60 per cent.; these were angular fragments of felspars, volcanic glass, augite, magnetite, and andesitic lapilli, having a mean diameter of 0·2 mm. There was also 5 per cent. of Sponge spicules, Radiolaria, and Diatoms. At 200 and 360 fathoms close to Banda (see Chart 33) the deposits consisted essentially of volcanic materials with a few pelagic Foraminifera. The dredge brought up several fragments of volcanic rocks and pumice measuring from 2 to 10 centimetres in diameter, Corals, siliceous Sponges, and calcareous Algæ.

In 17 fathoms off Banda the bottom was a sand or gravel with 52 per cent. of carbonate of lime made up of Foraminifera, Gasteropod, and Lamellibranch shells, Echinoderm fragments, Corals, and calcareous Algæ.

*Banda to Amboina.*—The deposit in 1425 fathoms (see Chart 31) was a Blue Mud containing 31 per cent. of carbonate of lime. The surface layer, about half an inch in thickness, was brownish in colour, while the deeper ones were blue and very compact.