

on the surface, and at a similar depth and latitude in the Atlantic they were usually present in considerable numbers. The Foraminifera shells were in some instances quite white, or with a rosy tinge as if lately fallen from the surface, but the great majority were brown coloured, and in some instances black, from a deposit of oxide of manganese on their surface. When one of these dark coloured shells from 1450 fathoms is broken, three zones can be distinguished: at the centre an internal cast of the shell, then the white carbonate of lime shell itself, and outside this an external cast of the same nature and aspect as the internal one, to which it is connected by little red pillars which fill up the foramina of the shell. These casts do not appear to be formed by a simple filling of the shell, but to be due to a chemical combination. There were in these deposits none of the smooth pale yellow and green casts so abundant in the green muds along continental shores. If the brown casts be treated with warm hydrochloric acid and the iron thus extracted, a number of colourless globules are obtained, which have resisted the action of the acid. It has been found that these casts consist of a hydrated silicate containing alumina, lime, magnesia, and alkalis. The mean diameter of the minerals in these deposits—felspars, black mica, augite, hornblende, and magnetite—rarely exceeded 0.05 mm. The great bulk of the residue, however, after removal of the lime, consisted of pumice stone in a fine state of division, with argillaceous matter. Radiolarians and Diatoms made up about 2 per cent. of the whole deposit.

The trawling at 1350 fathoms gave a few deep-sea animals, many rounded fragments of pumice covered with oxide of manganese, and the branch of a tree several feet in length which was carbonised in some places.

There were many very productive hauls with the surface nets between the Fiji Islands and the New Hebrides, Pteropods, Heteropods, and pelagic Foraminifera being specially abundant. With the exception of a very large cylindrical species of *Etmodiscus*, Diatoms were very rare both on the surface and at the bottom. It was observed that the larger Foraminifera, such as *Sphæroidina dehiscens*, *Pulvinulina menardii*, and thick shelled *Orbulina*, were procured in greatest abundance when the tow-net was dragged at a depth of 80 or 100 fathoms.

On one occasion the otter trawl was towed for some time from the lower boom, a short distance beneath the surface. It was not so successful in catching fish as was hoped; it contained, however, large masses and strings of jelly, which on examination turned out to be the eggs of a Cephalopod.

Flying Fish (*Exocetus*) were especially abundant during this trip, and at night frequently dashed on board ship near the exposed lights.

*Halobates*.—Specimens of this insect, of which very many were collected during the cruise, were especially abundant on the surface between the Fijis and the New Hebrides. This group of Hemiptera is interesting as containing (along with the allied genus