contained carbonate of lime in the upper layers in the form of pelagic Foraminifera, but that in the trawl did not show any effervescence when treated with dilute acid. STATION 285.

There were between two and three bushels of manganese nodules. The great majority of these were of small size, from 1 to 2·5 cm. in diameter, resembling a lot of marbles. One large nodule, however, with a large white-coloured nucleus, appeared to have been broken to pieces in the trawl. The white nucleus had at one time been a portion of a deep-sea deposit, but not like the dark-coloured clay that came up in the trawl, for it contained numerous casts of *Globigerina* shells, along with many angular fragments of basic volcanic glass. The inner concentric layers of the great majority of the nodules formed light brown coloured nuclei, which have frequently been compared to coprolites by geologists who have examined them. These lighter layers are less than 1 mm. in diameter, and are arranged concentrically around altered pieces of volcanic glass, sharks' teeth or their fragments. The outer layers are of a darker colour, and contain much more manganese than the inner ones. The typical nodules contain about 37 per cent. of manganese peroxide and 24 per cent. of ferric oxide. The structure of bone can be readily recognised in some of the nodules, while others appear to have been formed upon fragments of bone, though now all traces of the bone have disappeared.

Altogether about fifty petrous and tympanic bones of Cetaceans were procured, belonging to the genera *Balænoptera*, *Mesoplodon*, *Delphinus*, *Globiocephalus*, and Baleen whales. Many of these were deeply imbedded in concentric layers of manganese, while in other cases large portions of the bone had been removed and substituted by depositions of manganese.

More than fifteen hundred sharks' teeth and fragments, over 1 cm. in length, were present, belonging to the genera *Carcharodon*, *Oxyrhina*, *Lamna*, *Corax* or *Galeus* or *Hemipristis*, while immense numbers of smaller teeth and fragments were found in the deposit or in the nodules. Some of the larger teeth were surrounded with layers of manganese, but, as a rule, they were not so deeply imbedded as the smaller teeth and fragments. The internal portions of the teeth were generally filled with deposits of manganese; the vaso-dentine and osteo-dentine had been entirely removed, the hard external enamel-like dentine alone remaining.

The nuclei of the nodules were occasionally pieces of volcanic rock; most of these had undergone considerable alteration, the glassy base having been converted into palagonite. Many of the specimens showed agate-like bands. These palagonitic layers were soft and could be cut with a knife like cheese when taken from the sea, but they have since become quite brittle. Among the nodules were several bomb-like fragments, about 1 cm. in diameter, with a hard thin exterior, and a hollow interior partly filled with ferruginous matters. Some of the nodules contained hollow spaces, in which the manganese assumed a radiate, crypto-crystalline, structure. The outsides of the nodules were generally covered with Rhizopod tubes, or the stolons of Hydroids, and these