

original characters of the bone had been completely obliterated. The Sharks' teeth in this haul were also deeply imbedded in manganese depositions.

On the 1st November, where the depth was 2025 fathoms and the deposit a *Globigerina* ooze, there were about a dozen nodules, two small Sharks' teeth, and in one of the nodules a fragment of bone.

On the 11th November, in *Globigerina* ooze, obtained from 1775 fathoms, there was over a gallon of rounded manganese nodules, the largest being about the size of a hen's egg; but there were no Sharks' teeth nor fragments of Cetacean bones, either separate or occurring as the nuclei of the nodules, which at this Station were formed around hardened portions of the ooze, or around volcanic fragments.

The association of Sharks' teeth, earbones of Cetaceans, manganese nodules, highly altered fragments of volcanic rocks, and cosmic spherules, all in relatively great abundance in the deposits from the greater depths of the Central South Pacific, is a matter of considerable interest, and some of the chief points connected with these materials may be referred to in some detail.

With respect to the earbones or fragments of other Cetacean bones, none were obtained in any of the dredgings north of the Equator either in the Atlantic or Pacific Oceans. In those south of the Equator, only one earbone was found in the blue muds surrounding continental shores, and this was in a depth of 2160 fathoms, over 100 miles from the coast of South America. These Cetacean bones are almost equally rare in the *Globigerina* oozes: from these deposits one bulla of *Ziphius* was dredged from 2275 fathoms in the South Atlantic; this was the only Cetacean bone procured in the Atlantic. A fragment was also dredged in 1900 fathoms 100 miles off the Cape of Good Hope, and another fragment from 2025 fathoms in the South Pacific.

All the other bones of Cetaceans procured during the Expedition were dredged from red clay or Radiolarian ooze in very deep water far removed from land. If Station 160, in the Indian Ocean, 488 miles southwest of Australia, where there was a depth of 2600 fathoms, and where six earbones were procured, be excepted, all the Stations where these Cetacean remains were found are situated in the South Pacific, in a region the farthest removed from continental land on the surface of the globe, of which Tahiti may be taken as the centre (see Sheet 1).

It may be assumed that Whales are not more numerous in the regions where these remains have been dredged from the bottom, than in others where no bones of these animals were obtained by means of the dredge. Mr. Murray has pointed out that the abundance of the bones in some localities and rarity in others is most probably connected with the



FIG. 293.—Section of a Manganese Nodule, showing a tympanic bone of *Mesoplodon* in the centre. 13th March 1874; 2600 fathoms.