

The species of Radiolaria are most abundant in tropical waters of rather low salinity, especially in the western and central Pacific and eastern Indian Oceans. In the Diatom Ooze at Station 157, in 1950 fathoms, lat. 53° 55' S., 84 species of Radiolaria have been recognised, while in the Radiolarian Ooze at Station 225, in 4475 fathoms, lat. 11° 24' N., 338 species have been found, and of these only six species are common

to the two stations, two belonging to the order Sphæroidea, three to the Discoidea, and one to the Cyrtioidea. The results of numerous tow-net experiments appear to show that the Phæodaria, and many of the Nassellaria, live in deep water, at a temperature as low as 40° F. In a Radiolarian Ooze the percentage of Radiolaria may be as high as 60 or 70 per cent., and in a Diatom Ooze or Globigerina Ooze, as high as 10



FIG. 30.—*Tuscarora belknapi*, Murray (one of the Phæodaria). North Pacific, 500 fathoms.



FIG. 31.—*Challengeria naresii*, Murray (one of the Phæodaria). North Pacific, 500 fathoms.

per cent., but generally the percentage is very much less. In terrigenous deposits the Radiolarian remains seldom make up over 2 or 3 per cent. of the whole deposit.

Sponge Spicules.—The spicules of siliceous Sponges are universally distributed in the different kinds of deep-sea deposits, the Hexactinellid spicules prevailing in deep water and the Tetractinellid and Monaxonid spicules in the shallower depths. In some regions siliceous Sponges were dredged in great numbers, for instance, off Kerguelen, in 120 fathoms, over one hundred specimens of *Rossella antarctica* were obtained in one haul of the trawl; at Zebu, Philippines, numerous specimens of *Euplectella* and other Sponges were obtained in 100 fathoms; off the Ki Islands, in 129 fathoms, there were eighteen species of Hexactinellida and a large number of individuals; in the Atlantic near the Cape Verdes there was procured in 1525 fathoms a large specimen of *Poliopogon amadou* (2 × 2 feet), attached to the branches of an Alcyonarian Coral; off the Kermadecs, in 630 fathoms, there was obtained another *Poliopogon* (*Poliopogon gigas*), measuring 3½ × 2 feet, which was but a fragment of what appeared to be an enormous Sponge; in the Faroe Channel a large number of specimens of *Pheronema* (*Holténia*) were dredged from a depth of 530 fathoms by the "Porcupine." In the deposits from areas like the above, where these siliceous Sponges flourish in large numbers, the spicules are particularly abundant, and make up a large proportion of some specimens of the deposit. With the exception, however, of the samples obtained from among these patches, terrigenous or pelagic deposits do not as a rule contain a large percentage of Sponge spicules, the average proportion in any of the types of deep-sea deposits not exceeding 2 or 3 per