

derived from the pure Radiolarian ooze, which forms the bed of the Central Pacific at depths of from 2000 to 4000 fathoms (§ 237). Many of these abyssal forms were brought up with the malacoma uninjured, and they show, both when mounted immediately in balsam, and when preserved in alcohol, all the soft parts almost as clearly as fresh preparations of pelagic Radiolaria. These species are to be regarded as truly abyssal, *i.e.*, as forms which live floating only a little distance above the bottom of the deep-sea, having become adapted to the peculiar conditions of life which obtain in the lowest regions of the ocean. Probably the majority of the PHÆODARIA belong to these abyssal Radiolaria, as well as a large number of NASSELLARIA, but on the other hand, only a small number of ACANTHARIA and SPUMELLARIA are found there. A character common to these abyssal forms, and rarely found in those from the surface or from slight depths, is found in their small size and their heavy massive skeletons, in which they strikingly resemble the fossil Radiolaria of Barbados and the Nicobar Islands. The lattice-work of the shell is coarser, its trabeculæ thicker and its pores smaller than in pelagic species of the same group; also the apophyses (spines, spathillæ, coronets, &c.), are much less developed than in the latter. From these true abyssal Radiolaria must be carefully distinguished those species whose empty skeletons, devoid of all soft parts, occur also in the Radiolarian ooze of the deep-sea, but are clearly only the sunken remains of dead forms, which have lived at the surface or in some of the upper zones.

236. *Deposits containing Radiolaria.*—The richest collection of Radiolaria is found in the deposits of ooze which form the bed of the ocean. Although the pelagic material skimmed from the surface of the sea, and the zonarial material taken by sinking the tow-net to various depths, are always more or less rich in Radiolaria, still the number of species thus obtained is, on the whole, much less than has hitherto been got merely from deep-sea deposits. Of course the skeletons found in the mud of the ocean-bed, may belong either to the abyssal species which live there (§ 235), or to the zonarial (§ 234), or to the pelagic species (§ 233), for the siliceous skeletons of these latter sink to the bottom after their death. Almost all these remains found in the deposits belong to the siliceous "Polycystina" (SPUMELLARIA and NASSELLARIA); PHÆODARIA occur but sparingly, and ACANTHARIA are entirely wanting, for their acanthin skeleton readily dissolves. The abundance of Radiolaria varies greatly according to the composition and origin of the deposits. In general marine deposits may be divided into two main divisions, terrigenous and abyssal, or, more shortly, muds and oozes. The *terrigenous* deposits (or muds) include all those sediments which are made up for the most part of materials worn away from the coasts of continents and islands, or brought down into the sea by rivers. Their greatest extent from the coast is about 200 nautical miles. They contain varying quantities of Radiolaria, but much fewer than those of the next group. The *abyssal* deposits (or oozes) usually commence at a distance of from 100 to 200 nautical miles