

end of the cruise. Unfortunately no bottom-deposits were obtained from the most important stations (except Nos. 346 and 347, depths 2350 and 2250 fathoms) in this region; at these the deposit was a Globigerina ooze containing numerous different species of Radiolaria.

B. In the South Atlantic, between Buenos Ayres and Tristan da Cunha (between lat. 35° S. and 43° S., long. 8° W. and 57° W.) there appears to be a long stretch covered partly with Globigerina ooze (Stations 331 to 334), or red clay (Stations 329, 330), partly with blue mud (Stations 318 to 328), which contains not only large masses of individuals but numerous peculiar species of SPUMELLARIA and NASSELLARIA. The preparations from the surface-takings of this region are also rich in these, as well as in peculiar PHÆODARIA.

C. The northern part of the Atlantic appears on the whole to be inferior to the tropical and southern portions as regards its richness in Radiolaria, and from the western half more especially, only few species are known. From my researches at Lanzerote in 1866–67, it appears that the pelagic fauna of the Canary Islands is very rich in them, as is also the Gulf Stream in the neighbourhood of the Færøe Channel, according to the investigations of John Murray (see his Report on the "Knight-Errant" Expedition, Proc. Roy. Soc. Edin., vol. xi., 1882).

D. The Radiolaria of the Mediterranean are of special interest, because almost all our knowledge of these organisms in the living conditions and of their vital functions has been derived from investigations conducted on its shores. Johannes Müller laid the foundation of this knowledge by his investigations at Messina, and on the Ligurian and French coasts at Nice, Cette, and St. Tropez (L. N. 10). The many new Radiolaria which I described in my Monograph (L. N. 16, 1862), were for the most part taken at Messina, the place which possesses a richer pelagic fauna than any other, so far as is yet known, in the Mediterranean. Other new species I found afterwards at Villafranca near Nice, in 1864 (L. N. 19), at Portofino near Genoa (1880), at Corfu (1877), and at other points on the coast. In Messina also, Richard Hertwig collected the material for his valuable treatise on the Organisation of the Radiolaria (L. N. 33), after he had previously made investigations into their histology at Ajaccio in Corsica (L. N. 26). Lastly, at Naples, Cienkowski (L. N. 22) and Karl Brandt (L. N. 38, 39, 52) carried out their important investigations into the reproduction and symbiosis of the Radiolaria. With respect to the character of its Radiolaria, the Mediterranean fauna is to be regarded as a special province of the North Atlantic.

E. Among the smaller contributions which have been made towards our knowledge of the Atlantic Radiolarian fauna, the communications of Ehrenberg on the deposits obtained in sounding for the Atlantic cable, and on the Mexican Gulf Stream near Florida, deserve special mention (L. N. 24, pp. 138, 139–145).

232. *Vertical Distribution.*—The most important general result of the discoveries of the Challenger, as regards the vertical or bathymetrical distribution of the Radiolaria, is the interesting fact that numerous species of this class are found living at the most various depths of the sea, and that certain species are limited to particular bathymetrical zones, *i.e.*, are adapted to the conditions which obtain there. In this respect three different Radiolarian faunas may be distinguished, which may be shortly termed "pelagic," "zonarial," and "abyssal." The *pelagic* Radiolaria swim at the surface, and when they sink (*e.g.*, in a stormy sea), only descend to a small depth, probably not more than from