

that Radiolaria are distributed throughout all seas without distinction of zones and physical conditions, even though these latter may be the cause of differences in their qualitative and quantitative development. In the case of the Radiolaria as well as of many other classes of animals, the law holds good that the richest development of forms and the greatest number of species occurs between the tropics, whilst the frigid zones (both Arctic and Antarctic) exhibit great masses of individuals, but relatively few genera and species (see note A). In the Challenger collection the greatest abundance of species of Radiolaria is exhibited by those preparations which were collected at low latitudes in the immediate neighbourhood of the equator; this is true both of the Atlantic (Stations 346 to 349) and of the Pacific (Stations 266 to 274); in the former the richest of all is Station 347 (lat. $0^{\circ} 15'$ S.), in the latter Station 271 (lat. $0^{\circ} 33'$ S.) (see note B). From the tropics the abundance of species seems to diminish regularly towards the poles, and more rapidly in the northern than in the southern hemisphere; the latter also appears, considered as a whole, to possess more species than the former. A limit to the life of the Radiolaria towards the poles has not yet been found; the expeditions towards the North Pole (see note C), like those towards the South (see note D), have obtained bottom-deposits and ice enclosures which contained Radiolaria; in some of the most northerly and most southerly positions which were reached the number of Radiolaria enclosed in the ice was relatively great.

A. The greater abundance of Radiolaria in the tropical seas is probably to be explained by the more favourable conditions of existence, and in particular the larger quantity of nutritive material (especially of decayed animals) and not by the higher temperature of the surface, for at depths of from 2000 to 3000 fathoms where the abyssal Radiolaria live, the temperature is but little above the freezing point or even below it (compare the bottom temperatures in the list of Challenger Stations, § 240).

B. Station 271 of the Challenger Expedition, situated almost on the equator in the Mid Pacific (lat. $0^{\circ} 33'$ S.), exceeds all other parts of the earth, hitherto known, in respect of its wealth in Radiolaria, and this is true of the pelagic as well as of the zonarial and abyssal forms. In the Station List the deposit at this point is stated to be "Globigerina ooze"; but after the calcareous matter has been removed by means of acid, the purest Radiolarian ooze remains, rich in varied and remarkable species. More than one hundred new species have been described from this Station alone.

C. Regarding the Arctic Radiolaria compare the contributions of Ehrenberg (L. N. 24, pp. 138, 139, 195) and Brady on the English North Polar Expedition, 1875-76 (Ann. and Mag. Nat. Hist., 1878, vol. i. pp. 425, 437).

D. Regarding the Antarctic Radiolaria, compare § 230, note A, and Ehrenberg, Mikrogeologie (L. N. 6, Taf. xxxv., A.), also L. N. 24, pp. 136-139.

229. *Fauna of the Pacific Ocean.*—From the splendid discoveries of the Challenger, and the supplementary observations obtained from other sources, the Pacific seems to be the ocean basin which is richest both quantitatively and qualitatively in Radiolarian life,