

and thus increased the known period of the developmental history of the class by many millions of years (§ 244).

The great significance of the Radiolaria in geology and palæontology has been brought into new light not only by these extensive discoveries, but also by the important relations which have been shown to exist between the Radiolarian rocks and the deep-sea deposits of the present day. In this direction the wonderful discoveries of the Challenger, and especially the investigations of the deep-sea deposits by Wyville Thomson (L. N. 31) and John Murray (L. N. 27), have furnished us with new and valuable information (compare §§ 236-239, and §§ 245-250). The Tertiary Polycystine formations of Barbados and the Nicobar Islands, with which we have been acquainted for the last forty years, as also the Mesozoic Radiolarian quartzes, which have only recently been made known to us from the Jura, are ascertained to be fossil representatives of the same deep-sea deposits which now occur in the form of Radiolarian ooze (§ 237), and to some extent also of Globigerina ooze and red clay (§§ 238, 239), on the bottom of the ocean, at depths of from 2000 to 4500 fathoms.

These investigations into fossil Radiolaria and their comparison with recent deep-sea forms have a further general significance, inasmuch as the identity of many living and fossil species from the Tertiary formation has been shown beyond all doubt. In this direction the numerous measurements and accurate comparisons which I have made during the last ten years of the abyssal forms in the Challenger collection, and of fossil species from Barbados and Caltanissetta, have brought to light many important facts. In this I had the able assistance of my friend, Dr. Reinhold Teuscher (compare § 250, and p. 1760). Further valuable contributions in this direction are found in the careful observations and comparative measurements recently published by Emil Stöhr (L. N. 35, 1880), regarding the Radiolarian fauna of the Tripoli of Grotte in the province of Girgenti, Sicily. From these it appears that the number of Miocene species which are still extant, is much greater than would appear from the results of Ehrenberg.

Ehrenberg himself, towards the end of his long and laborious life, collected the results of the systematic and palæontological researches, which he had begun thirty-seven years previously (L. N. 16, pp. 3-12) into the Polycystina, in two large works (L. N. 24, 25). The first treatise (L. N. 24, 1872) contains the *Mikrogeologische Studien über das Kleinste Leben der Meeres-Tiefgründe aller Zonen und dessen geologischen Einfluss*, with a list of 279 Polycystina observed by him from the deep-sea, as well as figures of 127 species. The second work (L. N. 25, 1875) contains the *Fortsetzung der Mikrogeologischen Studien, mit specieller Rücksicht auf den Polycystinen-Mergel von Barbados*; the list of fossil Polycystina observed by him includes 325 species, of which 26 are still extant; 282 of them are figured on the thirty plates accompanying the memoir. By means of these numerous figures, as well as by the appended systematic and chorological tables, Ehrenberg furnished a welcome supple-