

1834, Meyen made the first communication upon two Rhizopoda belonging to this group, *Physematium* and *Sphærozoum*, for which he constituted a special class of Infusoria (Palmellaria). In 1838, Ehrenberg described some fossil siliceous species, under the name *Polycystina*, and made the discovery eight years later (in 1846) that masses of rock in the island of Barbados contained a very large number (more than 300 species) of similar delicately perforated flinty skeletons. Ehrenberg subsequently discovered a great number of other skeletons belonging to this group, some of these being fossil in Tertiary formations, and others being found in deep-sea soundings. He concluded, wrongly, that these were the shells of highly organised animals related to the Polyzoa and Echinodermata.

“The first accurate observations and correct views upon living Radiolarian organisms we owe to Professor Huxley,<sup>1</sup> who, in 1851, carefully described several species, under the name *Thalassicolla*. Those examined by him in a living condition were partly solitary forms (really belonging to the present genus *Thalassicolla*), partly social forms (of the genera *Collozoum*, *Sphærozoum*, *Collosphæra*, *Siphonosphæra*). These Huxley recognised as Protozoa, from their being equivalent to single cells, and rightly described their central nuclei, also the vacuoles in the surrounding jelly, the yellow cells, &c.

“A far greater number of living species was soon after described by Johannes Müller of Berlin, who had observed them alive, during a period of ten years, especially in the Mediterranean. He observed, for the first time, the pseudopodia forming an anastomosing network, and radiating outwards from the unicellular body, and the flowing of the granules along them. This movement he compared, rightly, with that in the Foraminifera. His numerous and important discoveries he collected, shortly before his death, in his classic treatise, which appeared in 1858.<sup>2</sup> All these various forms, the discoveries for the most part of himself, were united by Joh. Müller under the name Radiolaria, and, as siliceous *Rhizopoda radiaria*, placed in opposition to the calcareous *Rhizopoda polythalamia*.

“The knowledge of the Radiolaria acquired by Joh. Müller was greatly extended by one of his pupils, Professor Ernst Haeckel of Jena, who published, in 1862, an exhaustive monograph of this group.<sup>3</sup> He first distinguished, as two principal constituents of the Radiolarian organism, the inner central capsule and the outer extracapsular sarcode with the pseudopodia. He gave the comparative morphology of the skeleton. In his classification fifteen families, containing 113 genera, were distinguished.

“The reproduction of the Radiolaria by means of swarmspores, which arise in the central capsule, was first clearly observed by Cienkowski in 1871.<sup>4</sup> He first propounded

<sup>1</sup> *Ann. and Mag. Nat. Hist.*, ser. 2, vol. viii. pp. 433-442, 1851.

<sup>2</sup> Ueber die Thalassicollen, Polycystinen und Acanthometren des Mittelmeeres, *Abhandl. d. k. Akad. d. Wiss. Berlin*, pp. 1-62, 1858.

<sup>3</sup> Monographie der Radiolarien, Berlin, 1862.

<sup>4</sup> Ueber Schwärmerbildung bei Radiolarien, *Archiv f. mikrosk. Anat.*, vol. vii. pp. 372-381, 1871.